

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background of the study**

The relevance of management accounting practices (MAPs) has been examined in the context of developed economy (Chenhall and Morris, 1986; Drury et al., 1993; Chenhall and Langfield-Smith, 1998), and very little is known about the current state of those practices in the contexts of developing and less developed economies (Joshi, 2001; Lin and Yu, 2002; Van Triest and Elshahat, 2007). Several researches (e.g., Luther and Longden, 2001; Haldma and Laats, 2002; Hooper et al., 2004; Leftesi, 2008) recognized the fact that MAPs are not uniform and their proper understanding requires knowledge of political, cultural and economic factors of the context (Hopper, 2000). More specifically, socio-economic factors such as the level of poverty, institutional framework, form of capital market (Hooper et al., 2004), and legal accounting environment and supply of professional accountants in emerging and transitional economy affect the proper understanding of MAPs (Luther and Longden, 2001; Haldma and Laats, 2002; Leftesi, 2008). Considering these facts, the present research explores the current status of advanced and innovative MAPs (preferably strategic management accounting practices), factors contingent to their usage, and the impact of their usage on several facets of performance in the publicly traded companies of Bangladesh which is considered as an emerging and developing economy. Additionally, this research offers an institutional explanation of management accounting change over time.

Bangladesh has secured a place in the “Next Eleven (N-11)” emerging economies and consistent growth-generating economy in the world as per Goldman Sachs, a leading global investment banking, securities and investment management firm. Bangladesh, along with the other 10 countries in the N11, might over take the West by 2050 due to its continuous and

sustainable economic development (The Guardian, 2012). PricewaterhouseCoopers (PwC), the second largest professional services firms in the world (The Telegraph, 2016) predicts in a report titled 'the long view: how will the global economic order change by 2050' that Bangladesh has the prospect to be one of the top three fastest growing economies in the globe by 2030 (Dhaka Tribune, 2017; Rashid, 2020c). However, the report also noticed a number of challenges that are to be dealt with to make this prediction true. The market capitalization to gross domestic product (GDP) ratio are 28.241% (World Bank, 2020a), which signifies that public limited companies are an important part of Bangladesh economy. Accordingly, these companies have to perform better to contribute significantly in the process of transformation from an emerging to a developed economy (Rashid, 2020a). In this endeavor, the use of sophisticated decision making techniques like strategic management accounting (SMA) techniques can be useful to the public limited companies in Bangladesh. The rationale for the adoption of SMA techniques lies in the fact that companies in the developed countries have already experienced a favorable impact of adopting a number of SMA techniques (Guilding et al. 2000; Guilding and McManus, 2002; Cadez and Guilding, 2007; Cinquini and Tenucci, 2007; Cadez and Guilding 2008; Cinquini and Tenucci, 2010; Lorenz, 2015; Turner et al., 2017; Cescon et al., 2019; Hadid and Al-Sayed, 2021) on strategy formulation, implementation and communication process (Kaplan and Norton, 1996, 2001) along with favorable impact on firm performance (Chenhall and Langfield-Smith, 1998; Narayanan and Sarkar, 2002; Al-Khadash and Feridun, 2006; Cadez and Guilding, 2008). Considering these effects, it is imperative to learn about the current state of SMA practices in the public limited companies in Bangladesh and, in particular the factors contingent to their adoption decision. Using the ground of contingency theory, a questionnaire survey is conducted at the first stage of this research to explore what SMA techniques are being used in the public limited companies in Bangladesh and the factors influencing the decision to their adoption. In the

second stage, an in-depth interview is conducted to explore what institutional and economic forces changes MAPs over time, specifically a shift from traditional MAPs to SMA practices. The rest of this chapter focuses on the following issues. The motivation of the study is presented in section 1.2. Section 1.3 outlines the philosophical perspective of the study, while section 1.4 presents the theoretical framework. Section 1.5 presents statement of the problem. The objectives of the study are highlighted in section 1.6, followed by research questions in section 1.7. Section 1.8 summarizes research methodology to be followed, while contribution of the thesis is presented in section 1.9, and. Finally, section 1.10 outlines the structure of the thesis.

## **1.2 Motivation of the study**

In 1980s, the relevance of management accounting (MA) was questioned in several researches (e.g., Kaplan, 1983, 1984; Johnson and Kaplan, 1987), and it was claimed that information provided by MA was not relevant and useful in making appropriate managerial decision in the changed business environment (Johnson and Kaplan, 1987; Bromwich and Bhimani, 1989). Following the world recession of 1970s, firms in western countries (such as the UK and the USA) began to face increased competition in selling their products in the global market due to the emergence of new manufacturing technologies and use of information technology (e.g., personal computer) in information processing (Ashton et al., 1995). Surprisingly, academics were teaching and firms were practicing management accounting techniques that were developed before 1925; and therefore, could not supply information required by the management to make decision in the changed business environment (Kaplan, 1984; Johnson and Kaplan, 1987). The most offensive criticism came from the words of Kaplan (1984, p. 414) where he commented that “Management accounting can no more exist as a separate discipline”. However, Bromwich and Bhimani (1989) rejected

their claim and stated that the extent of crisis faced by management accounting in the UK was not identical as it was in the USA. However, they recognized the fact that management accountants have to extend their skills to cope with the information needs of changed business environment by adopting advance techniques such SMA techniques (Lorenz, 2015). The fundamental weaknesses of conventional management accounting techniques were that they are internally-focused and financial-oriented, and therefore ignored external or environmental and non-financial information (Chenhall and Langfield-Smith, 1998; Guilding et al., 2000; Cadez and Guilding, 2008). In response to such criticism raised by academics and practitioners, several researchers (e.g., Simmonds, 1981, 1982, 1986; Cooper and Kaplan, 1988; Shank, 1989; Shank and Govindarajan, 1988, 1992a, 1992b, 1993; Bromwich, 1990; Bromwich and Bhimani, 1989; Cooper and Kaplan, 1991; Kaplan and Norton, 1992, 1996; Shields and Young, 1991; Wilson, 1991; Moon and Bates, 1993; Guilding, 1999; Guilding et al., 2000; Roslender and Hart, 2002; Jain and Singh, 2002) came up with new and innovative management accounting techniques that have external/environmental and/or long-term orientation along with substantial reliance on non-financial data.

Simmonds (1981) introduced the term “strategic management accounting” for the first in literature in a paper titled “strategic management accounting” published in *Management Accounting Journal*. He was the first to use external orientation of management accountants’ role specifically by emphasizing the use of external oriented information such as competitors’ data in the development and implementation of business strategy. Following his footsteps, several other researchers (such as Michael Bromwich in the UK, and Robert Kaplan, Robin Cooper, John Shank and Vijay Govindarajan in the US, Zahirul Hoque and Chris Guilding in Australia) strived to advance the popularity of SMA practices through their scholarly works. However, due to the dearth of a widespread empirically based SMA research (Cadez and Guilding, 2008; Hadid and Al-Sayed, 2021), the success or failure of SMA practices could

not be assessed (Langfield-Smith, 2008). More importantly, majority of these research works (e.g., Guilding et al. 2000; Cravens and Guilding, 2001; Cadez and Guilding, 2007; Cinquini and Tenucci, 2007; Cadez and Guilding 2008; Cinquini and Tenucci, 2010; Turner et al., 2017; Nuhu et al., 2017; Pavlatos and Kostakis, 2018; Cescon et al., 2019; Hadid and Al-Sayed, 2021) have used the context of developed economies (such as UK, USA, Australia, New Zealand, Slovenia, Italy). Furthermore, studies in the context of developing economies that have focused solely on SMA practices almost do not exist. This provides the context for the present study. This study focuses on the SMA practices of a developing economy- Bangladesh.

### **1.3 Theoretical Consideration**

The use of a particular theoretical underpinning is critical to inform, explain and predict accounting practices (Zimmerman, 2001). Wanderley and Cullen (2012) viewed management accounting research as eclectic and diverse. Management accounting scholars have employed a number of theories to interpret MAPs. This field of research was dominated by economics in the period of 1930-1970, particularly neo-classical economic theory (Scapens, 2006), and almost all techniques of management accounting have been developed around the economic theory (Scapens and Arnold, 1986). The assumptions of both the theories were questioned by management accounting academics (Ryan et al., 2002) and such theories do not assist to realize what and how management accounting techniques to be used (Burns and Scapens, 2000). Consequently, some other theories emerged in this field that can explain MAPs. Prior researches used a number of theories in understanding and explaining MAPs such as agency theory, contingency theory, institutional theory, structuration theory, and critical theory.

In the first stage, this research aims to explore what internal/organizational and external/environmental contingent variables affect the usage of SMA practices in the listed

companies in Bangladesh. Accordingly, this study employs contingency theory. The central proposition of the contingency theory is that organizational performance depends on the fit between organizational context and structure. A conditional relationship of two or more independent variables with a dependent variable is hypothesized in this theory that makes it a complex proposition (Drazin and Van De Ven, 1985; Cadez and Guilding, 2008). Chenhall (2003) has offered an overview of contingency-based management accounting studies from functionalists view point. The central view is that management accounting systems are adopted and developed by firms to meet information requirements in achieving organizational objectives. In SMA research, contingency theory has been used by several scholars (Cravens and Guilding, 2001; Cadez and Guilding, 2008; Cinquini and Tenucci, 2010; Nuhu et al., 2017; Turner et al., 2017; Hadid and Al-Sayed, 2021) to investigate the impact several contingencies on the usage of SMA techniques, and to a limited extent the impact on adoption on performance (Cadez and Guilding, 2008). For example, Cravens and Guilding (2001) employed eight sub-dimensions of competitive strategy as contingent factors based on Porter's framework (1985) to investigate their association with SMA techniques. Guilding and McManus (2002) consider intensity of competition, firm size, and market orientation in examining the use of SMA techniques (Customer Accounting). Cadez and Guilding (2008) employ business strategy, degree to which adopted strategy is deliberately formulated, market orientation, and firm size as contingent factors in studying SMA practices. Cinquini and Tenucci (2010) consider strategic pattern (defender or prospector), strategic mission (build or harvest), and strategic positioning (cost leadership or product differentiation) as contingent variables in exploring their impact on the usage of SMA techniques. In addition to these factors, the present study includes some other contingent factors (such as several facets of culture, organizational structure, environmental uncertainty, competition intensity and institutional pressures) proposed by prior researchers (Chenhall,

2003; Cadez and Guilding, 2008; Hadid and Al-Sayed, 2021) in examining their impact on the usage of SMA techniques and the impact of usage on performance.

In the second stage, this research conducts an in-depth interview survey to investigate what and how institutional and economic forces drive change in the MAS, specifically why and how companies shift from traditional MAPs to SMA practices. To achieve this objective, the study employs New Institutional Sociology (NIS). Meyer and Rowan (1977) provided the foundation of NIS based on the observation of educational sector of USA in 1970. They identified inconsistencies between formal structures and actual work practices that could not be explained by any existing organizational theory (Meyer and Scott, 1992). The key theme of NIS is that some organizations exist in highly institutionalized environments. The environments include the cultural rules and social norms instead of merely a source of task constraints or a relational network (Ribeiro and Scapens, 2006). If organizations are to be successful, they are obliged to conform to the dictates of their institutional environments (DiMaggio and Powell, 1983; Scott, 2008). Such organizations adopt structures and procedures that are accepted and valued in their social and cultural environment to achieve legitimacy and secure resources required for survival (Ribeiro and Scapens, 2006). In other words, NIS explains institutionalized organizations at 'macro' level particularly in explaining organizations that adopt innovations (Meyer and Rowan, 1977; DiMaggio and Powell, 1983). Institutional theories have been prominent in the study of MA to include social and institutional dimensions of organization and their environment (Hopper and Major, 2007). It has become the most popular choice among researchers who seek to understand why and how management accounting practices change (Moll et al., 2006). Moreover, Scapens (2006) suggested the use of 'institutional theory' to study that adopts 'pragmatism' paradigm.

## **1.4 Statement of the problem**

Following the criticism of Kaplan (1983, 1984) and Johnson and Kaplan (1987) in respect of “relevance lost” of traditional MAPs, several innovations have emerged in this field and have been successfully implemented in many firms across the globe. Majority of these innovations with strategic focus have been termed under the umbrella or package of “strategic management accounting” by several academics. Such innovative MAPs (SMA techniques) have been developed and implemented in the context of developed economies. Unfortunately, a very little is known about the scenario of adoption of such practices, benefits of adoption, and the impact of their adoption on performance in the context of a developing economy like Bangladesh. As prior literatures demonstrated the positive influence of these contemporary techniques on company performance, it would be interesting to know the feasibility of these practices in the context of a developing economy. The present study is expected to explore the extent of adoption, benefits, contingencies, and impact of these techniques on several facets of performance.

## **1.5 Objectives of the study**

The main objective of this study is to investigate the state of SMA practices using the context of a developing economy-Bangladesh. To accomplish this, the study has set the following five specific objectives:

1. To explore the current state of adoption of SMA techniques in the listed public limited companies in Bangladesh and the extent of benefits derived from their use.
2. To identify the contingent factors that influence the decision of adopting SMA techniques in the Bangladeshi listed companies.



3. To examine the effect of using SMA techniques on several aspects of firm performance (both perceived and observed performance);
4. To provide an explanation of changes in Management Accounting System (MAS) over time.

Table 1.1 present how each of these objectives is achieved in the present thesis. More specifically, this Table shows what methods and theories were adopted to achieve each of these objectives. The Table also demonstrates the outcomes derived from each of these objectives.

Table 1.1: Research plan

Research objectives	Methodology	Theory	Outcome
1. To explore the current state of adoption of SMA techniques in the listed public limited companies in Bangladesh and the extent of benefits derived from their use.	Questionnaire survey	NA*	Low to moderate adoption rate are expected with high adoption rate for few techniques
2. To identify the contingent factors that affect the decision of adopting SMA techniques in Bangladeshi listed companies.	Questionnaire survey	Contingency theory	A significant effect of both internal organizational and external environmental factors on the usage of SMA techniques is expected.
3. To examine the effect of the use of SMA techniques on several aspects of firm performance (both perceived and observed performance).	Questionnaire survey	Contingency theory	A favorable effect of using SMA techniques on several facets of performance is predicted.
4. To provide an institutional explanation of changes in Management Accounting System (MAS) over time.	Interview	New Institutional Sociology	Institutional pressures promote the imitation of best MAPs available in the industry.

\* NA= Not applicable

## 1.6 Research questions

The research questions of this study are as follows:

**RQ1** - Do public limited companies in Bangladesh use any strategic management accounting (SMA) techniques in their decision making process?

**RQ2** - What are the contingent factors that affect the decision of adopting such techniques in public limited companies in Bangladesh?

**RQ3-** Does the adoption of SMA techniques affect company's performance (both perceived and observed performance)?

**RQ4** – Why companies change existing MAS and go for SMA and how such changes are implemented?

## **1.7 Research methodology**

In line with the objectives, the present study adopts a mixed method approach that combines both quantitative and qualitative approaches. In terms of priority, quantitative approach is the dominant approach as this study aims to investigate the current level of adoption of SMA techniques and factors influencing the adoption decision. In terms of implementation, data have been collected sequentially- a questionnaire survey has been conducted in the first stage to collect quantitative data followed by interview survey in the second stage to collect qualitative data. Moreover, survey method as the main methodology is regarded appropriate by several academics (e.g., Collis and Hussey, 2003; Leftesi, 2008) where the researcher adopts a critical or pragmatic perspective, specifically to trace relationship among variables, conducting required statistical analysis and for generalizations of outcomes. The survey method is also considered the most popular and primary method for data collection in business particularly where the sample size is large (Collis and Hussey, 2003; Leftesi, 2008).

This research is slightly descriptive, as well as exploratory and explanatory based on its objectives. The examination of current state of SMA techniques can be categorized as descriptive. The part of research that focuses on the identification of contingencies and the effect of using a portfolio of practices on performance can be described as exploratory and explanatory. Data collected through questionnaire survey have been analyzed using

descriptive statistics such as mean, median and frequency to meet the requirements of descriptive objectives. Multiple regression analysis is employed to test the hypotheses of the study to meet the explanatory and exploratory objectives.

In the second stage, qualitative data have been gathered through an in-depth interview survey employing purposive sampling. A substantial number of comments and recommendations of the respondents are cited wherever applicable to demonstrate why and how MAPs have changed over time. The underlying theoretical arguments are also cited wherever appropriate to confirm or otherwise on the findings of the research.

## **1.8 Contribution of the thesis to the literature**

To date, majority of the research works on SMA practices have been performed using the setting of developed economies (e.g., Lord, 1996; Guilding et al. 2000; Guilding and McManus, 2002; Roslender and Hart, 2003; Cadez and Guilding, 2007; Cinquini and Tenucci, 2007; Cadez and Guilding 2008; Cinquini and Tenucci, 2010; Lorenz, 2015; Hadid and Al-Sayed, 2021). There exist considerable differences between the context of an emerging economy and developed economy from a number of grounds including cultural, political, and economic factors and this can have substantial impact on the understanding of MAPs (Hopper, 2000). Several prior research (e.g., Hopper, 2000; Luther and Longden, 2001; Haldma and Laats, 2002; Hooper et al., 2004; Leftesi, 2008) also recognized the fact that MAPs are not universally uniform, and a very little is known about the current state of such practices in the context of less developed economy (Joshi, 2001; Van Triest and Elshahat, 2007). Additionally, socio-economic factors such as the level of poverty, institutional framework, form of capital market (Hooper et al., 2004), and legal accounting environment and supply of professional accountants in emerging economy (Luther and Longden, 2001; Haldma and Laats, 2002) affect the proper understanding of management

accounting practices (Leftesi, 2008). Surprisingly, to the best of the researcher's knowledge, no single study was carried out in the developing context that have focused entirely on SMA practices as a package. Therefore, the present study expects to contribute to the extant SMA literature by providing a clear picture of the current status of SMA usage using the setting of a developing economy.

Anderson and Lanen (1999), Chenhall (2003) and Cadez and Guilding (2008) recognized that there are contingency factors such as technology, structure, environmental uncertainty, intensity of competition, organizational culture, and institutional pressures that can have effect on the decision of adoption of innovative management control system (MCS), and suggested to include such factors in further research. In response to their call, the present study examines the effect these contingent factors on the adoption decision, and therefore expect to enrich the contingency-based research.

Moreover, very few studies (e.g., Cadez and Guilding, 2008, 2012) have focused on the effect of SMA usage on performance. This provides another context for the current study. This study is expected to contribute to the existing stock of literature by examining the effect of the adoption of SMA techniques on both observed and perceived firm performance.

Moreover, most of the studies focused on manufacturing sector (e.g., Bright et al, 1992; Drury et al, 1993; Innes and Mitchell, 1995; Dugdale et al 2006; Cinquini and Tenucci, 2007, 2010; Cadez and Guilding, 2012), and very few studies focused on both manufacturing and service sector (e.g., Guilding et al., 2000; Lorenz, 2015) in regard to the adoption of SMA techniques. Several prior studies (Bright et al, 1992; Drury et al, 1993; Innes and Mitchell, 1995; Dugdale et al 2006; Cinquini and Tenucci, 2007, 2010) documented the usefulness of SMA techniques in manufacturing environment. Also, majority of the SMA techniques (e.g., ABC, BSC, competitor accounting, target costing) emerged as result of case study conducted in manufacturing undertakings. Bromwich and Bhimani (1994) recommend the use such

techniques in the service organizations and expect they would be equally valuable in service organizations (Lorenz, 2015). This study focuses on both the sectors, and therefore will facilitate meaningful comparison between the two sectors with respect to the level of adoption and perceived benefits from their use. Accordingly, this is another contribution of the current study.

In the context of Bangladesh, majority of the studies (e.g., Sharkar et al., 2006; Shil et al., 2010; Yeshmin and Fowzia, 2010; Yeshmin and Hossan, 2011; Yeshmin, 2015; Shil et al., 2015; Musharof et al., 2020) have focused on the combination of traditional MAPs and SMA techniques (one to three techniques) in a single study. However, no prior study has focused on a package of SMA techniques, specifically their extent of adoption, perceived benefits derived from adoption, factors contingent to their adoption, and more importantly, what and how MAS changes over time. Accordingly, this study expects to fill this gap of SMA literature in the context of Bangladesh.

Langfield-Smith (2008) reviewed the empirical works of previous 25 years that directly researched SMA adoption in order to evaluate the extent of usage and success of SMA. The findings revealed low adoption and success of SMA as compared to the expectation of Simmonds (1981), the pioneer of the concept. However, she calls for more researches on several aspects of SMA by concluding that “understanding how management accounting practices come to the attention of organizational actors and how they are implemented and developed will continue to be a source of interesting research”. In response to her call, the present study conducted interviews to understand what and how SMA techniques have been developed and implemented along with what organizational actors implement them. More specifically, using the grounds of New Institutional Sociology (NIS), this study attempts to provide a better understanding of what institutional forces influence the adoption of innovative cost management tools and how the implementation of such practices take place in

the organizational set up. A modified version of Granlund and Lukka's (1998) model is used to include economic pressures (both internal and external) in addition to the three famous institutional pressures (coercive, mimetic, and normative). Started with the nature of MA changes over the years, this study concentrated on several aspects of implementation of changes including who initiate the change, participants in the change process, the implementation process, and the effect of those changes on several facets of performance. More specifically, the present study provides an institutional explanation of how and why changes in MAS take place, specifically in the public limited companies in an emerging and developing economy. This aspect has rarely been addressed in the extant SMA literature.

## **1.9 Structure of the thesis**

In order to response to the research questions and achieve the research objectives, the thesis comprises eight more chapters in addition to this first chapter.

Chapter two provides an overview of SMA and each of its techniques starting with the evolution of management accounting followed by emergence of SMA and an apparent description of each technique under the umbrella of SMA. The chapter concludes by revisiting the relevance of SMA that responses to the criticisms noted by several academics with respect to the low usage rate and apparent benefits of SMA usage.

Chapter three provides a summary of literature on empirical research relating to this study. The usage rates and perceived benefits of SMA techniques along with methodology employed in the context of both developed and developing countries have been summarized. Moreover, the chapter analyzes prior researches to identify variables influencing the SMA adoption decision. The chapter concludes by identifying research gap through summarizing the limitations of prior studies.

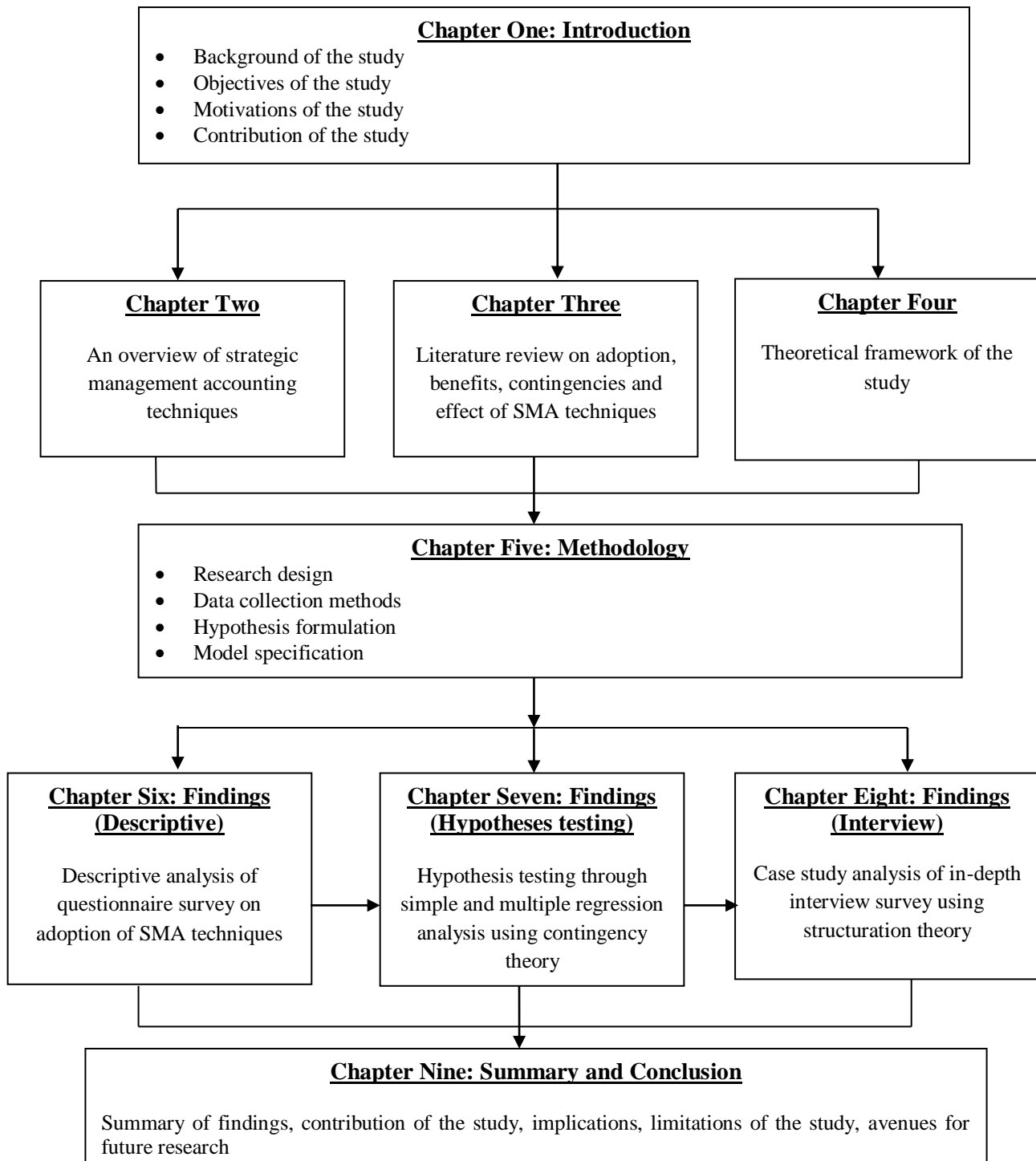


Figure 1.1: Structure of the Thesis

Chapter four provides an overview of theoretical framework which is followed in the study. Different theories on management accounting have been discussed along with their advantages and limitations. The rationale for adopting the particular theories are also provided. The chapter concludes by exhibiting theoretical framework to be followed in this study.

Chapter five offers detailed discussion on research methodology. The justification for philosophical perspective selected and the methodology employed to attain research objectives are discussed here. In addition, the chapter highlights the designing of questionnaire, way of conducting pilot survey and finalizing of the survey questionnaire. Moreover, the chapter offers explanation of variables and hypotheses development. The questionnaire design for interview and conduct of interview are also discussed here. The chapter concludes by describing how validity and reliability of data are assessed and what statistical analyses are applied to confirm or reject hypotheses.

Chapter six reports descriptive statistics on the usage of SMA techniques across industries using data gathered through questionnaire survey. To meet the first objective of this thesis, the adoption status of specific SMA techniques, particular group of techniques, and SMA as a package are presented in this chapter. Moreover, a thorough comparative discussion between industries and across the globe is also presented here. Finally, frequency of each of the techniques is presented separately to learn about the extent of adoption of each technique.

Chapter seven presents correlation and regression results to test the hypotheses of the thesis. Specifically, this chapter focuses on identifying what contingent factors affect the adoption of SMA techniques in the listed public limited companies in Bangladesh.

Chapter eight discusses the results interview survey. Frequencies and percentages are determined to analyze the data gathered from interview survey. Additionally, the perceptions and statements of respondents are analyzed using the grounds of NIS to recognize and demonstrate how MAS changes over time in the sample companies.



Chapter nine presents the summary and conclusions of the study. This chapter also identifies areas of future research that can be conducted in this emerging field of research. Finally, major contributions of this research along with limitations are also provided in this chapter.

# **CHAPTER TWO**

## **STRATEGIC MANAGEMENT ACCOUNTING: AN OVERVIEW**

### **2.1 Introduction**

This chapter provides an overview of strategic management accounting (SMA) in general and a package of practices that comprise SMA. Section 2.2 presents general background of the origin of SMA, followed by section 2.3 that offers evolution of management accounting. Section 2.4 presents a detailed discussion on the emergence of SMA, while section 2.5 focuses on the definition of SMA. Section 2.5 discusses the criteria of isolating SMA from conventional MAPs. This section also presents an overview of each of the SMA techniques selected for the present thesis. Finally, section 2.6 outlines chapter summary and conclusion.

### **2.2 Background**

The formal journey of accounting profession started many centuries ago with the introduction of “double entry book keeping principle” by Luca Pacioli in Venice in 1494 (Botes, 2005). Pacioli also introduced the concepts cash budgeting and variance accounting along with double entry book keeping system in his book “*Summa de Arithmetica, Geometria, Proportioni et Proportionalita*” (Review of Arithmetic, Geometry, Ratio and Proportion). So, Pacioli can also be credited with the origins of cost accounting along with financial accounting (Botes, 2005).

However, the development of cost accounting became more evident with the introduction of cost per unit calculations and recording system for finished goods and raw materials by Edwards (1937) and Solomons (1952). International Federation of Accountants (IFAC)

summarized the evolution of management accounting through four stages in which management accounting is considered as a “technical activity” in the first stage (pre 1950) with particular focus on product costs (IFAC, 1998; Abdel-Kader and Luther, 2006). The focus of management accounting is shifted to the provision of information for planning and control purposes in stage two (1950-1960) which IFAC describes as ‘staff role’. Reduction of waste in resources as a response to increased competition and rapid technological development was the center of management accounting in the third stage (1970-1980) (IFAC, 1998). Up to this period, a number of management accounting tools were developed that are considered as traditional or conventional by today’s academicians and professionals in this field. Budgeting (Solomons, 1952; Boyns, 1998; Bhimani et al, 2012; Drury, 2012), standard costing (Parker, 1969; Armstrong, 1987; Fleischman and Tyson, 1998; Boyns et al, 2004), absorption costing (Garcke and Fell, 1887; Boyns and Edwards, 1997), variable costing or marginal costing (Anthony, 1989; Dugdale and Jones, 2003), capital budgeting (Lowry, 1990; Freeman and Hobbs, 1991) are considered traditional management accounting tools used by organizations throughout the world (Dugdale, 1994; Chenhall and Langfield-Smith, 1998; Horngren, 2004, Lorenz, 2015). Most of these tools were fully developed by 1925 and were still being studied in educational institutions and employed in firms in the 1980 (Kaplan, 1983, 1984, 1985; Johnson and Kaplan, 1987).

Radical changes in economic and social environment including a wider recession, rapid technological developments and increased global competition (Ashton et al., 1995) made most of the traditional management accounting tools incompetent to satisfy the needs of firms in making strategic decisions in coping with such competitive and dynamic environments (Kaplan, 1984; Johnson and Kaplan, 1987). These lead to the emergence of new and advanced tools of management accounting that focus not only on internal financial information but also financial and non-financial strategic information related to the external

environment and competitors with long run time horizon (Kaplan 1984; Johnson and Kaplan, 1987; Guilding et al., 2000; Cadez and Guilding, 2008). The new innovations in the field of management accounting were labeled under the umbrella of “strategic management accounting (SMA)” in the UK by Simmonds (1981) followed by Bromwich (1990) and Bhimani (1994), and “strategic cost management” in the USA by Shank (1989), Kaplan (1984), and Cooper (1996).

Apart from these variations to represent the term ‘SMA’, Roslender and Hart (2002, 2003) suggested combining marketing concepts and theories with management accounting to develop a new technique “brand management accounting” under the umbrella of SMA. Specifically, Roslender and Hart (2003) reported interfunctional collaboration between management accountants and marketing management. To advance SMA as a generic approach to accounting for strategic positioning, Roslender and Hart (2002) suggested extension of attribute costing of Bromwich (1990) and strategic cost analysis matrix for at least three reasons. These reasons are: first, SMA must move beyond costs (i.e., it must consider other factors such as ‘price’ along with ‘costs’); second, shift the focus on ‘benefits’ of products (intangible aspect) rather than focusing only on tangible aspects of product (e.g. attributes and characteristics); and third, marketing content of the SMA is to be increased (Roslender and Hart, 2002, p. 268-269). They identified the courtship between management accounting and marketing management as productive experience, and suggest moving further by executing marriage between these two equal partners. Rather than borrowing few ideas and concepts from marketing, they suggest to give SMA a marketing flavor.

### **2.3 Evolution of Management Accounting**

Prior to 1950 (stage 1 in IFAC Evaluation of Management Accounting), management accounting was regarded as “technical activity” required for the quest of organizational

objectives with primary focus on cost determination and financial control (IFAC, 1998). As the production technology was relatively simple (Abdel-Kader and Luther, 2006) and well understood (Ashton et al., 1995), existing products were sold well due to the low level of competition; accordingly there was little innovations in products or production processes (Ashton et al., 1995). Management was highly concerned with internal matters particularly production capacity, and therefore ignoring external environmental factors. Material and labor costs were easily traceable and direct labor provided a natural basis for the allocation of overhead costs to specific products (IFAC, 1998; Abdel-Kader and Luther, 2006). Budgeting was the main tool of management accounting along with very little use of dissemination of cost information for management decision making (Ashton et al., 1995; Abdel-Kader and Luther, 2006). Performance evaluation based on financial measures, non-discounted cash flow techniques of capital budgeting (e.g. payback period, accounting rate of return) are also used by management accountants in this era (Abdel-Kader and Luther, 2006).

Between 1950 and 1960 (stage 2), provision of information for management planning and control purpose became the prime focus of management accounting (IFAC, 1998; Abdel-Kader and Luther, 2006). As a part of MCS, management accounting was seen to be reactive only in the event of deviation from business plan (Ashton et al., 1995). In this stage, management controls still ignored external environment and strategic considerations and focused on manufacturing and internal administration (IFAC, 1998; Abdel-Kader and Luther, 2006). IFAC (1998) described management accounting of this era as “*management* activity, but in a *staff* role” (Para 19). The use of tools such as decision analysis and responsibility accounting were keys to management accountants to provide staff support to the line management (IFAC, 1998; Abdel-Kader and Luther, 2006). More specifically, cost-volume-profit analysis, performance evaluation based on non-financial measures, product-wise profitability analysis, and stock control models, and discounted cash flow methods (e.g. net

present value, internal rate of return) were employed by management accountants (Abdel-Kader and Luther, 2006).

IFAC (1998, Para 7) described the role of management accounting in the third stage (1970-1985) as “reduction of waste in resources used in business processes”. Wider economic recession in 1970, increased global competition of late 1980, rapid technological development and the use of computerized manufacturing processes (IFAC, 1998; Abdel-Kader and Luther, 2006) punched the management thought with respect to the relevance of information provided by traditional management accounting tools (Kaplan, 1984; Johnson and Kaplan, 1987). Predominantly, the use of personal computers changed the scope and nature of data managers need; and therefore, information system became the critical component for effective management (Ashton et al., 1995). To meet these challenges, management of firms in the western economy emphasized on the reduction of waste in resources used in the business processes (IFAC, 1998) through introduction of novel management and production processes (Abdel-Kader and Luther, 2006).

In the fourth stage (1985-1995), massive uncertainty, emergence of E-commerce caused by the development of world-wide web and improvement in manufacturing and information technologies (Ashton et al., 1995) led to increase competition globally (IFAC, 1998; Abdel-Kader and Luther, 2006). To meet these challenges, a number of new and advanced management accounting techniques emerged in both the UK and USA (Simmonds, 1981; Kaplan and Norton, 1992; Shank and Govindarajan, 1992a; Bromwich, 1990) that focused on creation of value through effective use of resource (IFAC, 1998; Abdel-Kader and Luther, 2006). IFAC (1998, Para 7) recommends the “use of technologies which examine the drivers of customer value, shareholder value, and organizational innovation” to achieve the goal of value creation (Abdel-Kader and Luther, 2006).

## **2.4 Emergence of Strategic Management Accounting**

Prior to 1970, Western countries (particularly USA and UK) did not face notable competition in the international market either in terms of price or quality which resulted in keeping the management of firms busy with internal matters like production capacity (Ashton et al., 1995). The world economic recession of 1970s and rapid advancement and use of technology in operations and information processing through use of personal computers increased competition in the early 1980s in the global market (Ashton et al., 1995; IFAC, 1998; Abdel-Kader and Luther, 2006). Improvement in quality and control of costs through reduction of waste in resources used in business process (IFAC, 1998; Abdel-Kader and Luther, 2006) and use of new and innovative management and production techniques became vital to combat the resultant increased competition (Ashton et al., 1995). Unfortunately, firms were applying and academicians were teaching management accounting tools that were fully developed by 1925; therefore, the information needs of organizations that were using advanced and computerized manufacturing processes could not be met (Kaplan, 1983; 1984, Johnson and Kaplan, 1987). Kaplan (1984, p. 414) stated this misery of management accounting as “management accounting can no more exist as a separate discipline”. These inability of the traditional management accounting tools were noticed by Johnson and Kaplan (1987) in USA in a paper titled “Relevance Lost: The Rise and Fall of Management Accounting” published by Harvard Business School Press. Johnson and Kaplan (1987) cited several reasons in favor of the relevance lost of management accounting in 1980s.

First, management accounting has rarely evolved new techniques required to complement the rapid progress in manufacturing technology environment (e.g. non-existence of techniques in measuring and reporting increased productivity or improved quality and flexibility), thereby, failed to meet detailed information needs of the management in decision making in the changed environment (Tayles, 2011; Lorenz, 2015).

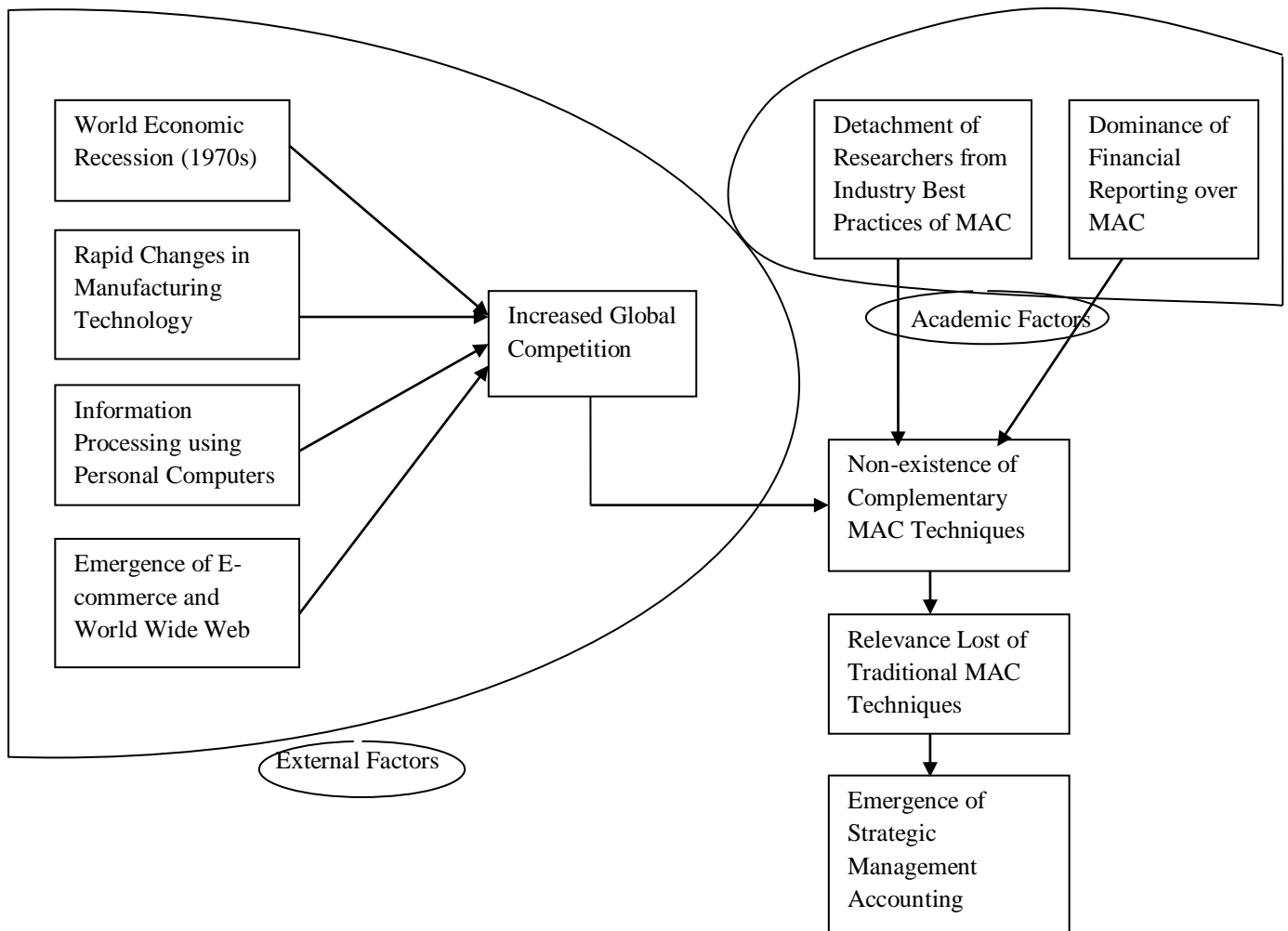


Figure 2.1: Emergence of Strategic Management Accounting. Source: Author's work.

Second, the dominance of financial reporting requirements in corporate world kept management accounting as subordinate to financial accounting, and therefore the principal focus of cost and management accounting was to allocate overhead costs to products and to meet the stock valuation needs of financial reporting (Kaplan, 1984, 1985, Johnson and Kaplan, 1987; Tayles, 2011; Lorenz, 2015). The short-term focus of financial reporting (as financial reports are mostly prepared and presented for a financial year) obscured the need for long-term investment in research and development and innovation of new product (Ezzamel et al., 1990; Lorenz, 2015) that are critical for raising earnings in the long-run.



Third, accounting academics divorced their researches from actual management accounting practices to the development of analytical and economics-based models (Kaplan, 1984, 1985; Johnson and Kaplan, 1987; Tayles, 2011) which led to the failure of recognizing much improved MAPs used in the firms by both research articles and academic textbooks.

To restore the lost relevance of traditional management accounting techniques, SMA came to prominence in the late 1980s as a range of new techniques and approaches (Roslender and Hart, 2003).

Thus, the emergence of new technologies and increased competitions of early 1980s following world recession of 1970s (Ashton et al., 1995) and failure of management accounting innovations complementary to such rapid changes in manufacturing environment (Kaplan, 1984; Johnson and Kaplan, 1987), the dominance of financial reporting, and the negligence of academic and professional researchers to identify industry best practices revolutionize management accounting in 1980s (Kaplan, 1985, Johnson and Kaplan, 1987; Tayles, 2011). Bromwich (1990, p. 28) mentioned that ‘a further and, perhaps, even more crucial revolution in management accounting may be required to help enterprises meet global challenges in product markets’. This revolution in management accounting was vigilant on both sides of the Atlantic (Langfield-Smith, 2008) and scholars and practitioners suggested a list of new management accounting techniques. These new innovative cost management tools were labeled under the package of “strategic management accounting” by Simmonds (1981) in the UK, followed by some other influential scholars such as Bromwich (1990) and Bromwich and Bhimani (1994). Whereas in the USA, new innovations in this field were termed under the umbrella of “strategic cost management (SCM)” by influential academics like Robert Kaplan, John Shank, and Vijay Govindarajan (Langfield-Smith, 2008; Rashid et al., 2021). Shank (2007) viewed this revolution as from cost accounting to management accounting to strategic cost management (Tayles, 2011).

## **2.5 Definition of Strategic Management Accounting**

As discussed in the preceding section, the term “Strategic management accounting” was first introduced by Simmonds (1981, p. 26) that include external orientations by inserting competitors’ data (external focus) along with firm’s internal data in formulating and monitoring business strategy. Management accounting was seriously criticized for becoming too internally focused on operational issues. Since then, researchers have defined the term differently due to the absence of a generally accepted conceptual framework (Langfield-Smith, 2008; Tayles, 2011; Nixon et al., 2011; Rashid et al., 2020). Moreover, the term has a number of variations including strategic cost management (Shank 1989, 1996) and accounting for strategic management (Roslender and Hart, 2010). As claimed by Langfield-Smith (2008, p. 205) after reviewing the reviews of articles published on SMA in academic and professional journals that ‘there is no agreed definition of SMA in literature’. Additionally, the term is not well understood by practicing accountants (Guilding et al., 2000; Langfield-Smith, 2008; Nixon et al, 2011). Tomkins and Carr (1996, p. 271) claimed in an editorial note that ‘the area of SMA is still ill-defined and that it still lacks a general conceptual framework’. Coad (1996, p. 392) also holds the same view by mentioning that “SMA is an emerging field whose boundaries are loose and, as yet, there is no unified view of what it is or how it might develop. The existing literature in the field is both disparate and disjointed”.

These difficulties in defining SMA and its areas emerge from the variations in the definition and boundaries of strategy and strategic management. For example, there are ten schools of strategy (Mintzberg and Lampel, 1999) and four perspectives of strategic management neither of which are less significant and are still practicing in firms and teaching in universities today (Nixon and Burns, 2012).

Table 2.1: Definition of Strategic Management Accounting

Authors	Strategic Management Definition	Significant Aspects
Simmonds (1981, p. 26)	“The provision and analysis of management accounting data about a business and its competitors for use in developing and monitoring the business strategy, particularly relating levels and trends in real costs and prices, volume, market shares, cash flow and the proportion demanded of a firm’s total resources”.	Use of external management accounting data (e.g. competitors) in strategy formulation and monitoring.
Bromwich (1990, p. 28)	“The provision and analysis of financial information on the firm’s product markets and competitors’ costs and cost structures and the monitoring of the enterprise’s strategies and those of its competitors in these markets over a number of periods”.	Use of product attributes and cost structures data (focus on consumer); focus on long-term time horizon.
Dixon and Smith (1993, p. 605)	“The provision and analysis of information relating to a firm’s internal activities, those of its competitors and current and future market trends, in order to assist in the strategy evaluation process”.	Focus on present and future market trends data in the strategy evaluation process.
Shank and Govindarajan (1994, p. xiii)	“The blending of the financial analysis elements of three themes from the strategic management literature- value analysis, strategic positioning analysis, and cost driver analysis”.	Focus on three dimensions of strategic management: value chain, strategic positioning and cost driver.
Roslender and Hart (2003, p. 255)	“A generic approach to accounting for strategic positioning, defined by an attempt to integrate insights from management accounting and marketing management within a strategic management framework.”	Focus on integration of MAC with marketing to flourish SMA.
Hoque (2003, p. 2)	“A process of identifying, gathering, choosing and analyzing accounting data for helping the management team to make strategic decisions and to assess organizational effectiveness”.	A process of four tasks assists in strategic decision.
Langfield-Smith (2008, p. 206)	“Taking a strategic orientation to the generation, interpretation and analysis of management accounting information, and competitors’ activities provides the key dimension for comparison”.	Emphasize on strategic orientation of using management accounting information; comparison of rivals’ data in decision.

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Tillman and Goddard (2008, p. 80)	“The use of management accounting systems in supporting strategic decision-making”.	Focus on management accounting as a system.
Cadez and Guilding (2008, p. 838)	“a set of strategically oriented accounting techniques”	Focus on a group of management accounting techniques having strategic orientation.
Ma and Tayles (2009, p. 474)	“The body of management accounting concerned with strategically orientated information for decision making and control”.	Identified as a part of management accounting rather than as a separate discipline; use of strategic information in decision.

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Moreover, Mintzberg (1987) identified five dimensions of strategy definitions (plan, ploy, pattern, position, perspective; see page p. 20-21 for details) which compete each other in some ways, and complement each other in more important ways. As claimed by Mintzberg (1987, p.21) the use of the term strategy is still ill-defined and contradictory. Parallel to this opinion, Tomkins and Carr (1996, p. 280) mention strategy as still an illusive concept and the reason for the non-existence of any agreed conceptual framework of SMA is probably the lack of an agreed conceptualization of corporate strategy (Rashid et al., 2020). Therefore, it is hardly possible to provide any general definition and conceptual framework of SMA that is compatible to all the schools and perspectives of strategic management. Nevertheless, a list of definition of SMA provided by influential scholars is presented in the following table.

Simmonds’ definition was criticized on the ground that it primarily focused on cost management techniques required to maintain low price strategy in the competitive market, and overlooked the issue of differentiating products from competitors (Shank, 1989; Bromwich 1990; Cooper, 1996; Nixon and Burns, 2012). Simmonds (1981, p. 26) also claimed that “management accountants are spending a significant proportion of their time and effort in collecting and estimating cost, volume, and price data on competition and calculating relative strategic position of a firm and its competitors as a basis for forming

business strategy". however, Cooper (1996), Lord (1996), Chenhall and Langfield-Smith (1998) and Shank (2007) hold different view that accountants do not have the required skills and are not ready to support strategic decision. Roslender (1995) also criticized that Simmonds (1981) introduced only external orientation of management accounting whereas strategy certainly cannot be fashioned without keeping an eye on the organization's environment, but it clearly involves rather more than simply adopting an external emphasis (Mintzberg and Quinn, 1991).

Bromwich was one of the key academic promoters of SMA in the UK and wrote several articles (e.g., Bromwich, 1988, 1990, 1991, 2000; Bromwich and Bhimani, 1989, 1994) published by influential academic and professional journals and books (e.g., Bromwich, 1992, 1996) published by prominent press to flourish SMA practice (Roslender and Hart, 2003; Langfield-Smith, 2008). Bromwich (1988) identified SMA as a higher order of management accounting. Bromwich (1990) suggested the need to release management accountant from the factory floor to capable them to assist enterprise directly in meeting up the global challenges in product markets. He further holds that SMA seeks to provide information on its competitors and firm's market with long-term focus. Bromwich (1990, p. 28) cited two critical reasons for the existence SMA based on two economic theories: (1) product attributes theory of Lancaster (1966) and (2) contestable market theory of Baumol (1986). First, customers actually value the attributes yielded by products and management accountant can play imperative role by costing attributes in strategic decision particularly in diversification decisions. Second, SMA assists to formulate and maintain sustainable business strategies by analyzing and reporting cost structures of competitors in the competitive markets. Tricker (1989) argued that management accountant can synthesize the strategic impact of firm's internal information and information about its competitors in the market to make it available to those making strategic decision. To play significant role in strategic

decision, accountants must strive to grip new skills beyond their conventional areas and extend cooperation to a greater extent with non-accounting segment of the enterprise like general management, corporate strategists, marketing and product development (Bromwich and Bhimani, 1994). Thus, it was the contribution of Bromwich to extend the focus of SMA just from collecting and analyzing data on competitors (external orientation) to evaluate the attributes of products from customer's end point over long term horizon (Bromwich and Bhimani, 1989). However, Guilding (1999) and Guilding et al. (2000) document the failure of Bromwich's reformulation of SMA in making significant impact on practice.

Dixon and Smith (1993) suggest management accountant to undertake new tasks in the SMA adoption process. These new tasks include defining the business unit; analyzing the costs of the business unit along with its competitors for each activity of value chain; monitoring the competitors intelligence system; analyzing market share and market trends; and integration of relevant information in strategic analysis process.

Lord (1996, p. 354) also defines SMA as a process of three-stages. These stages are as follows:

1. Collection of competitor information (regarding price, costs, volume and information required to determine market share).
2. Exploitation of cost reduction opportunities (focus on continuous improvements rather than only complying with standards through reducing costs and/or increasing differentiation. These might be achieved by exploiting linkage in the value chain, increasing exceptional cost drivers, and maintaining structural costs drivers to the optimal level. Financial as well as non-financial performance measures may be used in measuring and monitoring improvement in all these areas.)

3. Matching of accounting emphasis with strategic position (the nature of strategic position chosen will show what elements of traditional management accounting are to be emphasize.)

Shank (1989) and Shank and Govindarajan (1992a, 1994) introduced the concept 'strategic cost management (SCM)' based on Porter's (1980, 1985) framework and particularly the concept of strategic cost analysis. They noted three facets of SCM: value chain analysis, cost driver analysis and competitive advantage analysis (Shank and Govindarajan, 1992; Tayles, 2011). In the value chain analysis, the cost and efficiency of each activity from acquisition of raw material to shipment of finished goods to consumer in the chain are considered. Shank (1989) sub-divided cost drivers into (1) structural driver (based on economic structure of the firm); and (2) executional drivers (based on the way of doing things in the business); and are used to identify the causes of costs of each value chain activity (Shank and Govindarajan, 1992; Tayles, 2011). Competitive advantage analysis involves identifying whether and where the firm is beating its competitors in the market (Tayles, 2011). This is achieved through comparing value chain analysis of the firm with its competitors. If the firm has any competitive advantage, it must take initiatives to keep it going. If no competitive advantage is found to exist or declining trend is revealed, improvement effort may be taken to enhance efficiency in weak areas in addition to removing non-value added activities and rearranging existing activities (Shank, 1989; Shank and Govindarajan, 1992a, 1994; Tayles, 2011).

Roslender and Hart (2002, 2003) suggested combining marketing concepts and theories with management accounting to develop a new technique "brand management accounting" under the umbrella of SMA. Specifically, Roslender and Hart (2003) reported interfunctional cooperation between management accountants and marketing management. Surprisingly, despite the presence of such cooperation, these companies were not using SMA techniques like attribute costing, target costing, life cycle costing, etc. To advance SMA as a generic

approach to accounting for strategic positioning, Roslender and Hart (2002) suggested extension of attribute costing of Bromwich (1990) and strategic cost analysis matrix for at least three reasons. These reasons are: first, SMA must move beyond costs (i.e., it must consider other factors such as ‘price’ along with ‘costs’); second, shift the focus on ‘benefits’ of products (intangible aspect) rather than focusing only on tangible aspects of product (e.g. attributes and characteristics); and third, marketing content of the SMA is to be increased (Roslender and Hart, 2002, p. 268-269). They identified the courtship between management accounting and marketing management as productive experience, and suggest moving further by executing marriage between these two equal partners. Rather than borrowing few ideas and concepts from marketing, they suggest to give SMA a marketing flavor. Hoque (2001) also revealed that SMA techniques to date are mostly cost based. Thus, it is observed that akin to the case of strategy and strategic management definition, SMA definitions are complementary each other (but not competing). However, for the purpose of this research, SMA is seen as a collection of practices having external and/or long-term orientations, and makes the usage of both financial and non-financial information in formulating and implementing business strategy.

## **2.6 Strategic Management Accounting Techniques**

Parallel to the non-existence of general framework of SMA, there is still limited consensus about what constitutes SMA practices or techniques (Tomkins and Carr, 1996; Guilding et al., 2000; Langfield-Smith, 2008). Consequently, any attempt to develop a portfolio of SMA techniques seems to be subjective (Cadez and Guilding, 2007; Tayles, 2011). For instance, Szendi and Shum (1999) recognized 22 techniques as SMA and surveyed in Latin America. Guilding et al. (2000) identified and surveyed 12 SMA practices in the USA, UK, and New Zealand. Cravens and Guilding (2001) added three more techniques to make the list as long



as comprising 15 SMA techniques. Cadez and Guilding (2007) surveyed the usage of 16 techniques in the Slovenian companies. Cadez and Guilding (2008) also surveyed 16 techniques but under 5 groups. Cinquini and Tenucci (2007) identified and surveyed 14 SMA techniques in Italian manufacturing companies. Surprisingly, in a further study Cinquini and Tenucci (2010) reduced the list of SMA techniques to 11 from 14 of 2007 survey. Based on the study of Guilding et al. (2000), Tayles (2011) suggested a list of 18 SMA techniques and group them under five categories using the typologies suggested by Cadez and Guilding (2008). Arunruangsirilert and Chonglertham (2017) and Amanollah Nejad Kalkhouran et al. (2017) studied 16 SMA techniques using the typologies suggested by Cadez and Guilding (2008). Recently, Nuhu et al. (2017) and Pavlatos and Kostakis (2018) studied 8 techniques with substantial differences in the list. More recently, Hadid and Al-Sayed (2021) surveyed 12 SMA techniques in the UK manufacturing companies many of which are different from the list of Cadez and Guilding (2008).

These huge variations in the number of SMA techniques surveyed and studied lead to emerge a critical question: how did they isolate SMA techniques from conventional management accounting techniques (Rashid et al., 2020)? More specifically, what were the criteria employed in separating SMA techniques from traditional management accounting techniques (Rashid et al., 2020). Szendi and Shum (1999) titled their paper as “Strategic management accounting practices in Latin America”. Unfortunately, they used “advanced manufacturing and management accounting techniques” instead of SMA in the abstract and other part of the paper without providing a convincing argument as to why such management accounting practices are viewed as “advanced” (Cadez and Guilding (2007). Furthermore, Cadez and Guilding (2007) claimed, after scrutiny, that majority of the 22 techniques studied by Szendi and Shum (1999) were conventional MAPs. Their claim was based on the work of Guilding et al. (2000) who provided an original distillation (as claimed by Guilding et al., 2000, p.

117) of SMA techniques. Guilding et al. (2000) noted a number of orientations that should be exhibited by management technique to be included in the package of SMA techniques: environmental (marketing/external), focus on competitors, long-term, and forward-looking information (Cadez and Guilding, 2007; Tayles, 2011; Rashid et al., 2020). Cadez and Guilding (2008) grouped these criteria into two major categories: environmental (outward-looking) and/or long-term (forward-looking). They claimed that these criteria are rational due to the fact that majority of the ten schools of strategy viewed strategy as associated with long-term time dimension (beyond one year) and externally based perspective focusing on firm's commercial environment (Mintzberg, 1987; Mintzberg et al., 1995; Porter, 1996). Majority of the empirical researches conducted on SMA usage (mentioned above in this Section Para 1) till date, except Szendi and Shum (1999), were based on these criteria. In contrast, conventional management accounting techniques have a one year context and do not adopt a long-term, future oriented stance; they mostly have inward focus and thus ignore marketing or competitive aspect (Guilding et al., 2000; Tayles, 2011). Furthermore, Guilding et al. (2000, p. 117) argued that "much of the domain of conventional management accounting appears to be more associated with the 'tactical' than the 'strategic'." In addition, SMA techniques should not ignore non-financial aspects by focusing exclusively on financial aspects, as strategy employed both financial and non-financial information (Guilding et al., 2000; Tayles, 2011).

Based on the above literature, the present study uses the following criteria to isolate SMA techniques from conventional techniques:

1. Environmental or outward-looking (use information external to the firm such as marketing and competitors related information)
2. Long-term or forward looking (consider information beyond the financial year)
3. Focus on both financial and non-financial information (Rashid et al. 2020)

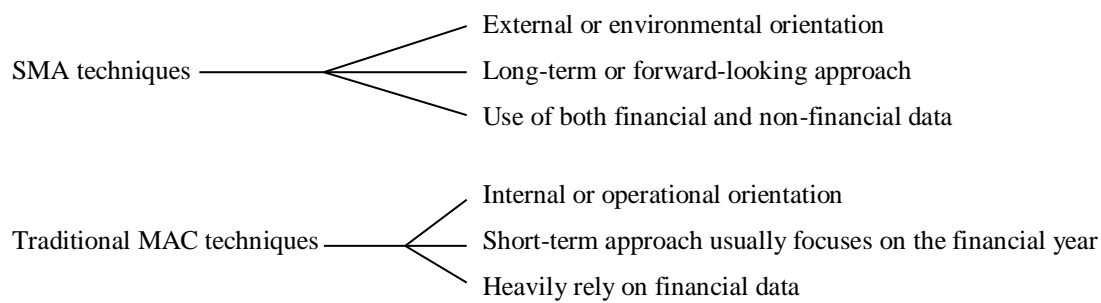


Figure 2.2: Criteria of separating SMA techniques from traditional MAPs. (Source: Author’s work)

The present study considers 17 SMA techniques based on the criteria stated above. The selected SMA techniques have been grouped into four categories following Cadez and Guilding (2008) and Tayles (2011). Of these 17 SMA techniques, 16 are from the Cadez and Guilding (2008). Activity-based costing (ABC) is added to the list based on the arguments noted by Cooper and Kaplan (1999). Cadez and Guilding (2008) claimed that ABC emphasizes costing accuracy and not strategy. In their earlier study, they (Cadez and Guilding, 2007, p. 132), stated that “ABC is more concerned with costing accuracy rather than the adoption of a strategic orientation”.

However, Cinquini and Tenucci (2007, 2010) considered ABC in the package of SMA techniques based on the ground that it focuses on the management of activities (Cooper and Kaplan, 1999) which seems to assist in suggesting actions essential to attain competitive advantage (Shank and Govindarajan, 1989; Palmer, 1992; Rashid et al., 2020). Accordingly, this study included ABC to the list of SMA techniques. The details of the selected 17 SMA techniques are as follows:

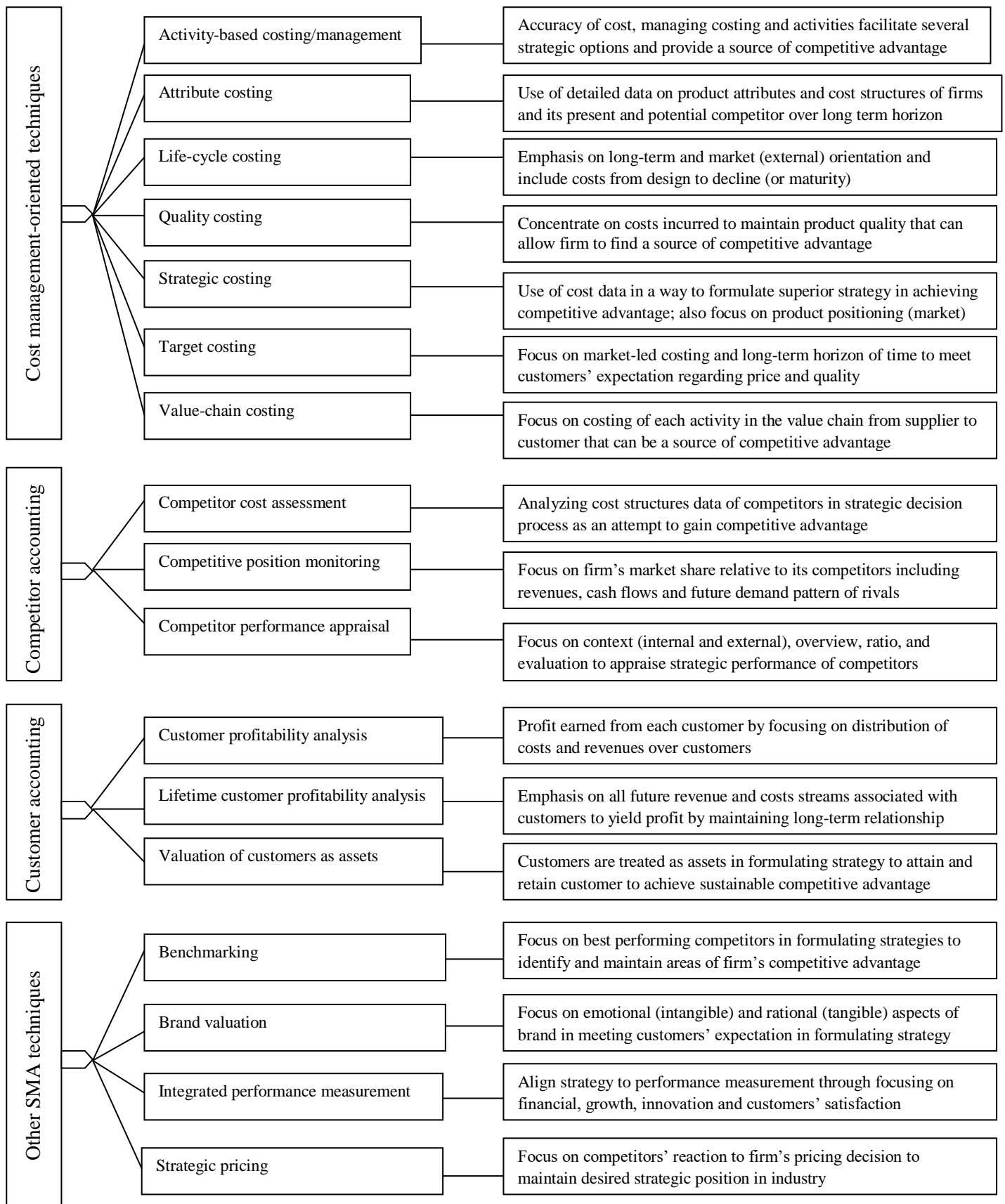


Figure 2.3: Strategic Management Accounting Techniques.

## **2.6.1 Cost management oriented SMA techniques**

### **2.6.1.1 Activity-based costing/management**

Activity-based costing (ABC) was formally developed and publicized by Cooper and Kaplan (1988) based on the work of Staubus (1971) by writing a series of articles in Harvard Business Review. The system was first introduced in John Deere Component Works in USA (March and Kaplan, 1987) where Kaplan intended to overcome the problem of traditional costing system of allocating overhead costs to products appropriately (Narayanan and Sarkar, 1999, 2002; Lorenz, 2015). Since then ABC/M has received greater interest to both academics and practitioners (e.g., Johnson, 1992; Shields, 1995; Innes and Mitchell, 1995; Innes et al., 2000; Foster and Swenson, 1997, Bjornenak and Mitchell, 2002). The techniques was primarily developed and used in the manufacturing sector in USA during 1970s and 1980s. Later, it was found useful to enhance costing accuracy in allocating personnel expense to cost objects (e.g., product and customers) in service sectors, particularly banking (Kaplan, 1994; Norries, 2002) and hospital services (Shander et al., 2010).

ABC is a system of allocating overhead costs to products using activity drivers (e.g., number of customer orders, set up hours) instead of traditional volume drivers such as number of units produced, labor hours, machine hours (Narayanan and Sarkar, 1999). More specifically, ABC/M deals with the management of overheads by focusing on activity based cost drivers (Tayles, 2011). The Institute of Cost and Management Accountants of Bangladesh (ICMAB) defines ABC in Bangladesh Cost Accounting Standard (BCAS)-14 (P. 44) as “an accounting method that identifies the activities that a firm performs and then assigns indirect costs to cost objects” (BCAS, 14.5.1).

As explained above at the final part of section 2.5, some researchers (e.g., Guilding et al., 2000; Cravens and Guilding, 2001; Cadez and Guilding, 2007, 2008) did not recognize ABC under the umbrella of SMA techniques on the ground that ABC primarily focused on

accuracy of cost measurement and ignored external/environmental factors as well as long term time horizon. However, Bjornenak and Mitchell (2002) demonstrated that ABC has moved to ABM and broadened to a number of functional areas in business in managing cost. Moreover, Cooper and Kaplan (1988) demonstrated (further supported by researchers such as Shank and Govindarajan, 1989 and Palmer, 1992) that management of activities is important in defining actions that are required to attain competitive advantages. They further exhibited that bad information on product costs leads to bad competitive strategy (Cooper and Kaplan, 1988). Chronic global competition and new production technologies are the two most critical factors that make accurate product costs crucial in the way of achieving competitive success. Cooper and Kaplan (1988) explain various aspects of ABC including the theory behind ABC, its design, impact and strategic implications. Almost all of a company's costs (factory costs as well as corporate support costs) should be considered as product costs since the ultimate objectives of all costs are to support the production and delivery of current product and services. Two types of costs are not considered in ABC and should not be allocated to individual product. Research and development (R&D) costs and the costs of excess capacity for entirely new products are of these categories. Designing ABC system for new product involves a number of stages. First, accumulate accurate data on direct materials and labor. The need for indirect resources by particular product is to be checked in the next step. This is to be done following three rules: first, focus on expensive resources; second, look for diversity by emphasizing resources whose consumption fluctuates significantly by product and product type; third, focus on resources whose demand patterns are not related with traditional allocation measures such as direct labor and material (Cooper and Kaplan, 1988, p. 98). After allocating resources to activities, assign costs from activities to specific costs objects such as product or service in the next step. Product costs derived using ABC is radically different from that of generated by applying traditional systems. This is because, as

explained above, traditional costing directly allocates overhead costs to cost object like product; whereas ABC uses sophisticated approach by identifying and allocating factory and other overheads first to activities and then to products that cause the consumption of indirect resources (Cooper and Kaplan, 1988). They also demonstrated the strategic implications of using ABC system. ABC provides radically different evaluations of product costs and profitability than traditional costing system. Executives of firms that use ABC are equipped with more reliable cost information that can, subsequently, facilitate several strategic options. Cooper and Kaplan (1988, p. 103) concluded as “Activity-based costing is not designed to trigger automatic decisions. It is designed to provide more accurate information about production and support activities and product costs so that management can focus its attention on the products and processes with the most leverage for increasing profits. It helps managers make better decisions about product design, pricing, marketing, and mix, and encourages continual operating improvements”.

In 1991, Johnson introduced the term ‘activity-based management (ABM)’ by differentiating it from Kaplan’s view of ABC in that firms should focus more on managing activities than managing costs (Lorenz, 2015). As Bjornenak and Mitchell (2002) demonstrate that ABC moved to ABM with more strategic focus; particularly in defining actions in the way of achieving competitive advantage (Cooper and Kaplan, 1988; Shank and Govindarajan, 1989). Gosselin (1997) perceives ABM as a compilation of three stages: activity analysis, activity cost analysis and activity-based costing. Prior studies document the partial use of ABM by majority of the organizations with emphasize on cost reduction (Nanni et al., 1992; Baird et al., 2004).

### **2.6.1.2 Attribute costing**

Bromwich (1990) is the promoter of this costing and offers its fundamentals based on the work of Lancaster (1966). In this costing system, products are seen as a package of objective attributes or characteristics that actually appeal to consumers (Bromwich, 1990). These attributes might include a range of quality elements such as operating performance variables, reliability and warranty arrangements, physical items, and service factors (the assurance of supply and of after sales service) which differentiate the firm's offerings from that of competitors to attract the consumers (Bromwich, 1990). More importantly, the firm's market share depends on how it can manage its offerings to provide such attributes demanded by its consumers and the supply of these attributes by its competitors (Bromwich, 1990). Costing these attributes or benefits consumers derived from using the products are the focal point in attribute costing (Roslender and Hart, 2003). Whereas ABC believes activities as the ultimate cost drivers, attribute costing considers benefits as the ultimate cost drivers and thus it is an additional approach to cost management which is quite distinct from ABC (Shank, 1989; Shank and Govindarajan, 1992). Though Pitcher (2015, p. 17) perceives attribute costing in CIMA's academic research report as an extension of activity-based costing that uses cost-benefit analysis (based on increased customer utility) to choose the product attribute enhancements that the company wants to integrate into a product.

To measure and report these consumer benefits, a broad set of techniques are required that would facilitate detailed analysis of firm's product as well as the offerings of its competitors (Bromwich, 1990). Accordingly, the provision of using competitors' data and market share are two strategic elements that make attribute costing one of the important SMA techniques. Bromwich (1990) concluded that accountants might play a role in strategic decisions making process and monitoring those strategies by supplying detailed data on product attributes and cost structures of the firm and of its actual and potential rivals. Accountants have to develop



ways to costing these characteristics, and monitoring and reporting the resulting costs at regular interval. In addition to the existing offerings, accountants may also assist in determining the costs of any packages of attributes that are waiting to be introduced later. Bromwich (1990, p. 44) further noted that “where a strategic perspective is adopted by accountants, costs may have to be considered in the context of demand factors because of the likely interplay between costs and demand in determining successful strategic conduct when considering product attributes”. Considering the above characteristics (particularly external orientation and link to market), Guilding et al. (2000), Cravens and Guilding (2001), Cadez and Guilding (2007), Cadez and Guilding (2008) and other researchers include ‘attribute costing’ to the list of SMA techniques. Majority of the previous studies (e.g. Guilding et al., 2000; Cadez and Guilding, 2007; Cadez and Guilding, 2008) revealed low adoption rate of attribute costing, except the case for Italy where Cinquini and Tenucci (2010) found a high adoption rate.

### **2.6.1.3 Life cycle costing**

The origin of Life-cycle costing (LCC) can be traced back to 1964 in a report by the Logistics Management Institute with the aim of reporting the use of equipment of the US government (Elmakis and Lisnianski, 2006; Lorenz, 2015). The magnetism of LCC lies in the fact that rapid technological changes have made product life cycle shorter which makes LCC vital in the attainment of goals (Ray and Schile, 1993; Murthy and Blischke, 2000; Lorenz, 2015). While majority of the costing tools focus on appraising costs annually, LCC considers the total costs of a product throughout its life cycle - from the design to decline, through introduction, growth and maturity (Wilson, 1991; Guilding et al., 2000; Cinquini and Tenucci, 2010). The consideration of research and design cost is justified by the fact that such costs affect the product’s lifetime performance (Guilding et al., 2000). Pitcher (2015, p. 17)

defines LCC in CIMA's academic research report as, "Life-cycle costing is the profiling of costs over the life of a product, including the pre-production stage.

Prior studies documented a number of benefits of using LCC. First, LCC gives due attention to costs incurred during the design and engineering stages which assist firms to affect manufacturing and service costs in the later stages along with product quality (Monden and Hamada, 1991; Dunk, 2004). Second, environmental agencies and regulators from both European Union (European Union's Industry Directorate) and USA (Environmental Protection Agency-EPA) recommend the use of LCC to increase firm's environmental awareness and to initiate pollution prevention strategies, and that the application of LCC can protect the interest of both parties (environmental regulators and firms) (Dunk, 2004). The inclusion of environmental costs in the LCC can have favorable impact on product design, operations and maintenance decisions, recycling and disposal methods (Weitz et al., 1994), and finally improved organizational performance through products that are environmentally preferable in the market place (EPA, 1995). The long-term time dimension and market orientation aspect of LCC induce many researchers (e.g., Guilding et al., 2000; Cravens and Guilding, 2001; Cadez and Guilding, 2007, Cadez and Guilding, 2008; Cinquini and Tenucci, 2010) to include it in the list of SMA techniques.

#### **2.6.1.4 Quality costing**

Guilding et al. (2000) cited quality costing as a strategically-oriented costing tool on the ground that product or service quality can be a source of competitive advantage. Quality costs represent costs incurred in the design, implementation, operation and maintenance of a quality management system, the cost of resources committed to continuous improvement, the costs of system, product and service failures, and all other necessary costs and non-value added activities required to achieve a quality product or service (Dale and Plunkett, 1995;

Schiffauerova and Thomson, 2006). Measuring and reporting these costs should be considered a critical issue for any manager who aims to achieve competitiveness in today's markets (Schiffauerova and Thomson, 2006). These quality costs are divided into three to four categories in prior studies: prevention costs, appraisal costs and failure costs (Heagy, 1991); failure costs being broken down to internal failure and external failure costs (Porter and Rayner, 1992; Bhimani et al., 2012).

Despite the fact that quality costs can be a source of competitive advantage, many firms do not systematically monitor these costs which may seriously damage their organizational competitiveness (Porter and Rayner, 1992; Lorenz, 2015). Moreover, these costs are frequently underestimated by organizations as the assessment of external failure costs involves considerable subjectivity. Prevention costs are incurred to reduce or eliminate defective products to occur; appraisal costs are incurred in detecting defectives before they are shifted to customers; internal failure costs are incurred to rework on defective units that are identified by inspection; and external failure costs are incurred when defective products are in the hands of customers which require replacement (Bhimani et al., 2012). Spending significant amount for prevention activities are expected to reduce internal (reworks, scrape) and external failure costs (returns, lost sales), which in turn can facilitate substantial savings and achievement of competitive advantage (Guilding et al., 2000). Moreover, this can be used to reduce overall production costs and to increase productivity and customer satisfaction (Dale and Wan, 2002; Lorenz, 2015). Several models of quality costing have been developed and used to collect, categorize and measure quality costs (Schiffauerova and Thomson, 2006; Lorenz, 2015). The very traditional method offered by Juran (1951) and Feigenbaum (1956) is P-A-F (Prevention-Appraisal-Failure) classifies quality costs into prevention, appraisal, and failure costs (Schiffauerova and Thomson, 2006). Crosby (1979) also offered a model to measure quality costs similar to Juran (1951) except that Crosby sees quality as

“conformance to requirements” and quality costs are the sum of price of conformance and non-conformance (Schiffauerova and Thomson, 2006). Ross (1977) developed process cost model which was further used by Marsh (1989) with the distinctiveness of focusing process instead of product or service (Schiffauerova and Thomson, 2006). Robison (1997) offered a different method that focus on team approach to trace costs that have gone wrong in a process (Schiffauerova and Thomson, 2006). Among the several methods mentioned above, the traditional model has been widely used by firms and experienced favorable impact on performance (Schiffauerova and Thomson, 2006).

#### **2.6.1.5 Strategic costing/cost management**

Shank and Govindarajan (1988, 1992a, 1994) and Shank (1989, 1996) offered the framework of strategic costing that focuses on using cost data to develop superior strategies in the way of achieving competitive advantage (Shank and Govindarajan, 1992a; Cadez and Guilding, 2007). This technique imports concept from both strategic management (e.g., value chain) and marketing (e.g., product positioning) to explicitly consider strategic issues in the achievement of competitive advantage (Shank and Govindarajan, 1992a; Guilding et al., 2000; Cadez and Guilding, 2007). Shank and Govindarajan (1988) and Shank (1996) used two case studies to demonstrate how the application of conventional costing approach and conventional net present value (NPV) result in sub-optimal decisions. In 1988’s case study, they provided evidence that the use of conventional costing which uses relevant cost from a short-run perspective can result in sub-optimal decisions, and that how a preferred solution can be derived using strategic costing drawing on the concepts of marketing and strategic management (Shank and Govindarajan, 1992a; Guilding et al., 2000). Pitcher (2015, p. 17) defines SCM in CIMA’s academic research report as “the overall recognition of the cost relationships among the activities in the value chain, and the process of managing those cost

relationships to a firm's advantage". Shank (1989, p. 50) defines SCM as "the managerial use of cost information explicitly directed at one or more of the four stages of the strategic management cycle (these four stages include: formulation of strategies; communication of strategies; developing and implementing strategies; and monitoring performance of strategy". More specifically, it provides costing information for strategic decisions and to formulate and communicate strategies and provides tactics to implement those strategies and assists in developing and implementing controls in monitoring success (Hoque, 2003).

The explicit link of SCM to strategy makes it eligible to the researchers to include it to the portfolio of SMA techniques (Guilding et al., 2000; Lorenz, 2015). However, Shank (2007) recognized that SCM has failed to attract firms as he was expected, and majority of the firms did not continue its application beyond the pilot project; therefore, he expressed his doubt about the future of SCM (Langfield-Smith, 2008; Roslender and Hart, 2010; Lorenz, 2015).

#### **2.6.1.6 Target costing**

The origin of target costing (TC) is allied with Japanese firms (Yazdifar and Askarany, 2012) and majority of the empirical researches to date have been conducted in the Japanese firms (Kato, 1993; Cooper and Yoshikawa, 1994; Tani et al., 1994; Wijewardena and De Zoysa, 1999). It became popular among European and American firms only in the 1990s (Kato, 1993; Yazdifar and Askarany, 2012). More importantly, TC has been highly adopted in the Japanese firms (Tani et al., 1994; Wijewardena and De Zoysa; 1999) as compared to non-Japanese firms (Chenhall and Langfield-Smith, 1998; Guilding et al., 2000). Several synonyms are used to represent 'target costing' in the literature (Yazdifar and Askarany, 2012) including 'cost planning', 'cost projection system' (Kato, 1993), 'design to cost' (Michaels and Wood, 1989), 'manufacturing cost reduction', 'direct cost feasibility study' (Dekker and Smidt, 2003), and 'cost management' (Cooper and Slagmulder, 1997). Simply,

TC is defined as a systematic process of managing costs of products by establishing target market prices and profit margins during the design phase of a new product (Kato, 1993; Cooper and Slagmulder, 1997; Yazdifar and Askarany, 2012). Pitcher (2105, p. 17) define target costing in CIMA's academic research report as "an activity which is aimed at reducing the life-cycle costs of new products, by examining all possibilities for cost reduction at the research, development and production stage. It is not a costing system, but a profit-planning system – the selling price and profit requirement are set during the research stage, thus creating a target cost". The two most important objectives of target costing are: reduction of new product cost to ensure the attainment of target profit along with satisfying customers in respect of quality, and inspiring the work forces to attain the target profits during the development of new product (Monden, 1995; Yazdifar and Askarany, 2012). The two simple stages of target costing are: first, determination of target costs, and second, attainment of the target cost (Yazdifar and Askarany, 2012).

Proper application of target costing results in a number of advantages to the firms including: long-term approach to cost management; directs focus on customers; removes barriers between departments; enhances employee awareness and augments their participation and empowerment; fosters co-operation and better relation with suppliers; reduces non value added activities; promote selection of activities with the lowest cost; reduces delivery time to market (Ax et al, 2008; Yazdifar and Askarany, 2012; Lorenz, 2015). Kaizen costing is somewhat similar to TC except the fact that whereas TC focuses on reducing costs at design and development stage, in Kaizen costing continuing efforts are made in the manufacturing phase to secure further cost savings (Guilding et al., 2000). Several researchers (e.g., Tani, 1995; Chenhall and Langfield-Smith, 1998; Guilding et al., 2000; Dekker and Smidt, 2003) include target costing in the list of SMA techniques due its focus on long-term approach to cost management efforts and external focus, particularly because of its focus on market-led

costing rather than cost-led pricing (Guilding et al., 2000). However, the implementation of TC has some dark sides including development of detailed data, cooperation from all managerial levels, difficulties in quantification of non-financial data, inferior quality and finally significant costs required for the implementation and maintenance of TC (Yazdifar and Askarany, 2012).

#### **2.6.1.7 Value chain costing**

Shank and Govindarajan (1992a) develop value chain costing (VCC) based on the work (value chain analysis) of Porter (1985), particularly on the concept of strategic cost analysis. Porter (1985) emphasizes the strategic realization of each activity in the value chain for better understanding of cost behavior and source of differentiation. In this approach, the sequence of business activities- from the design of product to shipment to customers- that are linked in the value chain are analyzed in detail in the light of cost and efficiency, significant cost drivers are identified and analyzed, and finally the competitive advantages are identified and emphasized to compete in the market (Shank and Govindarajan, 1992a; Tayles, 2011). Hergert and Morris (1989) also developed a costing system base around the value chain concept. Both Hergert and Morris (1989) and Shank and Govindarajan (1992a) relied on cost drivers (as suggested by ABC system) in value chain analysis and questions the ability of traditional costing to assist in such analysis (Guilding et al., 2000; Lorenz, 2015). The cost drivers that cause the consumption of resources are sub-divided into (1) structural drivers, and (2) executional drivers in value chain costing (Shank, 1989). Structural drivers focus on the economic structure of a firm, whereas executional drivers emphasize on the way of conducting things in the business (Shank, 1989; Tayles, 2011). A firm, to survive and expand, must identify its competitive advantage by tracing areas where it can beat competitors either through providing equivalent customer value for lower cost or better

customer value for equivalent cost (Porter, 1985; Guilding et al., 2000). Such competitive advantages, if exists at all, must keep going as well as improvement plans must be developed to create and enhance such advantages. Comparison of firm's value chain analysis with its competitors (external focus) can facilitate identification of competitive advantages. Removing non-value-added activities, rearranging existing activities of business, and eliminating weaknesses through improving efficiency of weak areas can create or improve competitive advantage of an organization (Shank, 1989; Shank and Govindarajan, 1992a, 1994; Tayles, 2011). A firm's linkage with its suppliers and customers should also get consideration in value chain analysis to gain dormant benefits and cost savings (Shank and Govindarajan, 1992a; Guilding et al., 2000). More importantly, Shank and Govindarajan (1992a) shows how value chain costing may provide insights into make or buy and backward or forward integration decision (Guilding et al., 2000).

### **2.6.2 Competitor accounting based SMA techniques**

Prior literatures (e.g., Jarvenpaa, 1998; Heinen and Hoffjan, 2005; Guilding 1999; Lorenz, 2015) recognized competitor accounting as an independent topic in the field of SMA that facilitates the determination of a firm's competitive position in the market by analyzing and comparing competitors' cost, position, and performance to gain an insight about competitors and to predict future competitive behavior (Guilding, 1999; Lorenz, 2015). Firms must pay attention to each element of competitor's objectives, resources and competitive stance, and individual elements of strategy (Wilson, 1994; Hoque, 2003). Moreover, it should be the central element of management planning and control (Wilson, 1994) to avoid the elements of surprise (Flavel and Williams, 1996) which may be detrimental to the organization (Hoque, 2003).



However, there exists considerable debate about what constitutes competitor accounting. For instance, Guilding (1999) considers five SMA techniques (competitive position monitoring, competitor cost assessment, competitor appraisal based on published financial statements, strategic costing, and strategic pricing) as competitor-focused accounting practices. Hoque (2003, p. 134) identified six ingredients of competitor accounting: (1) competitor cost analysis, (2) competitor quality and price analysis, (3) best-practice benchmarking, (4) value-chain analysis, (5) competitive profiling or competitive position monitoring, and (6) industry profitability analysis. Whereas other researchers (e.g., Cadez and Guilding; 2008; Cinquini and Tenucci, 2010; Tayles, 2011; Lorenz, 2015) consider only the first three techniques as competitor accounting. More importantly, Chris Guilding (with Simon Cadez) departed from his 1999 views in 2008 and includes only the first three SMA techniques in the list of competitor accounting. Consistent with this view, the present study also considers the first three (competitive position monitoring, competitor cost assessment, and competitor performance appraisal) SMA techniques as the components of competitor accounting.

#### **2.6.2.1 Competitor cost assessment (CCA)**

Simmonds (1981) is the pioneer of this concept and demonstrates the provision of including competitors cost information in strategic decision making process. Simmonds work is followed by a number of researchers (e.g., Jones, 1988; Bromwich, 1990; Ward, 1992; Guilding, 1999) in order to refine, develop and survey the concept. CCA focuses solely on the cost structures of competitors (Simmonds, 1981; Cadez and Guilding, 2007; Cinquini and Tenucci, 2010) and includes the provision of a regularly updated estimate of a competitor's unit cost (Guilding, 1999; Cadez and Guilding, 2008).

Jones (1988) offers a systematic approach to apply this practice that entails appraising competitors' manufacturing facilities, economies of scales, level of technological

advancement in product design and relation with regulators such as government (Guilding, 1999; Guilding et al., 2000). In order to facilitate meaningful comparison with competitors cost data, several computations and adjustments of competitors' cost with that of the company might be required. For instance, preliminary estimation or calculation of competitors' cost must be adjusted for firm's internal factors such as internal production volume and product mix (Jones, 1988; Heinen and Hoffjan, 2005). In computing product cost difference, the possibilities of future cost reduction programs of competitors must be predicted and considered (Heinen and Hoffjan, 2005). To make the comparison more effective, Heinen and Hoffjan (2005, p. 4) suggested considerations of some other factors and steps including comparison of freights, customs duty and other product related indirect costs; adjustments of value of firm's product; and consideration of exchange rate variations, if applicable. Hesford (2008) noted that practitioners place high degree of relevance to competitors' cost information and such information can be easily quantified and interpreted and accepted by management (Heinen and Hoffjan, 2005). Based on the comparison of competitors' cost structure, competitors can be ranked either against each other or against the respective company to attain competitive advantage (Hoque, 2003). Zajac and Bazermann (1991) identified 'blind spots' in respect of capacity decision of firms when they consider the contingent decisions of competitors. Particularly, firms overestimate their relative power and financial strength (Heinen and Hoffjan, 2005). Prior studies reveal several sources to accumulate competitor information including physical observation and experience, mutual suppliers and customers, ex-employees worked for competitors (Ward, 1992, Guilding, 1999; Hoque, 2003), in-house sources, competitive intelligence, management and accounting consultants, public information (Hoque, 2003).

### **2.6.2.2 Competitive position monitoring (CPM)**

Kenneth Simmonds advocated this SMA technique in 1986 by an influential paper ‘the accounting assessment of competitive position’ published in ‘European Journal of Marketing’. Simmonds (1986, p. 17) opined that ‘accounting measurement of competitive position is much more complex task’ and require an outward-looking strategic management accounting orientation and can be performed using the existing skills of management accountant. He (p. 16) viewed competitive position as power of a firm ‘relative to its direct competitors’ and depends on a number of dimensions. Several researchers (Guilding 1999; Guilding et al., 2000; Lorenz, 2015) recognized it as a holistic approach to competitor appraisal as compared to competitor cost assessment. Scholars and practitioners of marketing and business strategy attempted to define and use the term by relying solely on the firm’s market share relative to its largest competitors as proxy (Simmonds, 1981, 1986). However, in addition to market share, measurement of competitive position must involve other indicators including sales revenue, profit and return on sales, volume and unit cost, unit price, cash flows, liquidity, resource availability, size and pattern of future demand (Simmonds, 1986; Guilding, 1999; Guilding et al., 2000). In line with these analyses, Guilding (1999, p. 584) viewed the term as “the analysis of competitor positions within the industry by assessing and monitoring trends in competitor sales, market share, volume, unit costs, and return on sales. This information can provide a basis for the assessment of a competitor's market strategy”. Consequently, the aim of such assessment of a firm relative to its competitors should be the use of such information in formulating its strategy (Cinquini and Tenucci, 2010; Lorenz, 2015). Simmonds (1986) noticed the limitations of conventional accounting profit as a reflection of a firm’s true competitive position, and that accounting profit may decline when competitive position is improving because of the cost of gaining on competition

in the forms of advertising or investment to increase quality and vice versa (Simmonds, 1986).

Assessment of competitive position is extremely important for several reasons. For example, it determines the ability of a firm to extract future profits or suffer losses in a particular industry and more importantly it is an asset with finite earning potential, and the stock price is greatly affected by the competitive position of a firm (Simmonds, 1986). Moreover, competitive position is given the highest priority in the event of selling a business as reflected in the words of Simmonds (1986, p. 16) as “when a business is sold, it is its competitive position that usually determines the business value, not physical assets”. Management accountants have to find ways to measure value and performance of critical components of competitive position and their movement over time (Simmonds, 1986). Guilding (1999) and Guilding et al. (2000) evidenced higher usage of competitive position monitoring as compared to other two techniques of competitor focused SMA techniques.

### **2.6.2.3 Competitor performance appraisal based on published financial statements**

Moon and Bates (1993) proposed and illustrated this SMA technique by outlining a comprehensive framework based on the analysis and interpretation of financial statements of two UK retailers (Tesco and Sainsbury). They used the term ‘CORE’ to represent their framework that stands for context (C), overview (O), ratio (R), and evaluation (E), and can be used to appraise the strategic performance of competitor. They also claimed that their framework focuses directly on the key sources of competitive advantages (Moon and Bates, 1993). In line with this philosophy, Guilding (1999, p. 585) defines competitive performance appraisal as “the numerical analysis of a competitor's published statements as part of an assessment of a competitor's key sources of competitive advantage”.

Moon and Bates (1993, p. 141-145) described their framework in four different stages. Stage 1 is all about scene-setting; establishing and understanding the context within which the organization is operating (Moon and Bates, 1993, p. 143). In this stage, both external (the organization and its related environment such as the type of industry it belongs to, its function, types of assets it owned and liabilities it owed) and internal contexts (strategic positioning and critical success factors that determine its performance) of the organization are to be contrasted before any interpretation of accounts is performed. In the second stage, no formal calculation is carried out based on accounting numbers, rather attempt is made to gain an overview of how the organization has been performing through investigating several factors such as trend in sales, profits, assets and liability movement (Moon and Bates, 1993, p. 143). In analyzing these trends, two factors that may affect the presentation and content of financial statements are to be taken into account: (1) significant one-off events such as mergers, acquisition, share issues, strikes, fires and frauds that can mislead the users; (2) differences in accounting policies within the firm and industry (Moon and Bates, 1993, p. 144). These factors may distort overall situation exhibited by financial statements and must be adjusted in assessing trends and in determining performance through formal ratio calculation. Stage 3 is about formal calculation of financial ratios using published financial statements to evaluate the extent of achievement of strategic objectives identified in stage 1. Moon and Bates did not recommend any list of these ratios, rather they specified two key issues in the definitions of ratios: (1) plausible (the relationship required should be measured by a particular ratio) and consistent (definitions must not differ from year to year). In stage 4, the calculated ratios are interpreted first to gain an insight as to how well the organization has performed in the key areas of strategic importance; then the findings of the previous three stages are compared to check for consistency among them and this should enable to identify any important issue overlooked in any of the stages; and finally, a conclusion may be drawn

as to the degree of success in the implementation of corporate strategy and their implications on customers, suppliers and competitors (Moon and Bates, 1993, p. 144-145).

Very few empirical studies have surveyed (e.g., Guilding, 1999; Guilding et al, 2000; Cravens and Guilding 2001; Heysford, 2001) the status of competitor performance analysis, and documented a higher usage of this practice than expected (Heinen and Hoffjan, 2005; Lorenz, 2015). However, majority of these studies focused on the usage rate, perceived benefits and importance of using this technique instead of showing how to use it to derive strategic benefits from its use (Heinen and Hoffjan, 2005; Lorenz, 2015).

### **2.6.3 Customer accounting based SMA techniques**

Before the emergence of customer accounting as a separate SMA technique, its different facets were embedded in other management accounting techniques such as ABC and total quality management (TQM) (Guilding and McManus, 2002). ABC, as promoted by Kaplan and Norton (1992, 1996), includes the measurement of customer satisfaction along with other three perspectives of firm's performance, whereas TQM emphasizes on monitoring customers complaints, customers lost due to poor quality and impact of quality on volume of customers (Guilding and McManus, 2002). However, Guilding and McManus (2002) provide comprehensive views of customer accounting by specifying five elements and the incidence, perceived merits and antecedents of each of these elements of customer accounting by surveying the largest 251 Australian listed companies. Surprisingly, in a later study, Cadez and Guilding (2008) came down to three elements of customer accounting. The present study also takes into account these three elements of customer accounting.

### **2.6.3.1 Customer profitability analysis (CPA)**

CPA is considered as the most widely referred customer accounting practice (Guilding and McManus, 2002; Lorenz, 2015) and has attracted several commentaries (e.g., Bellis-Jones, 1989; Cooper and Kaplan, 1991; Shapiro et al., 1987; Ward 1992; Smith and Dikolli, 1995; Foster and Young, 1997; Guilding and McManus, 2002). This technique is based on the computation of profit earned from a specific customer and such computation is to be based on identifiable costs and sales data related to specific customer (Guilding and McManus, 2002). Van Raaij (2005, p. 373), on the other hand, describes CPA as “the process of allocating revenues and costs to customer segments or individual customer accounts, such that the profitability of those segments and/or accounts can be calculated”. Pfeifer et al., (2005) views customer profitability as “the difference between the revenues earned from and the costs associated with the customer relationship during a specified period”.

The similarity between ABC and CPA lies in the fact that ABC focuses on product whereas CPA focuses on customer as a cost object (Innes and Mitchell, 1995). Prior studies document that better strategic decisions relating to pricing and distribution and an in-depth understanding of customer characteristics can be achieved using CPA (Cooper and Kaplan, 1991; Innes and Mitchell, 1995; Van Raaij et al, 2003; Lorenz, 2015). Using a case study Cooper and Kaplan (1991) demonstrated that only 40% of the case company’s customers were profitable, and that the fact was not discovered as the company allocated customer-related selling costs on the basis of sales revenue (Guilding and McManus, 2002). Van Raaij et al. (2003) suggested a six-step approach to implement CPA using a team comprises members from marketing, management accounting and in some instances operational managers and information specialists depending on the nature of firm and its information system. These six steps are: (1) selection of active customers, (2) design customer

profitability model, (3) customer profitability calculation, (4) interpretation of results, (5) attune strategies and programs, and (6) establish infrastructures.

The justification of CPA depends on the cost-benefit of accumulating, analyzing and interpreting information and the resulting income from the usage of such information in strategic decisions (Smith and Dikolli, 1995). The direct benefit of CPA is that it provides a firm an insight in the uneven distribution of costs and revenues over customers that enable the firm to generate new opportunities in three areas: cost management, revenue management, and strategic marketing management (van Raaij et al., 2003).

The importance of customer profitability analysis also lies in the fact that each dollar of revenue received from different customers does not contribute equally to the firm's net income (Foster and Young, 1997). Such differences in customer profitability may arise because of either difference in costs (differences in consuming firm's resources by customers) or difference in revenue (e.g., price, volume, products, and items) (Foster and Young, 1997). Moreover, the long-term viability and success of a firm depends on its ability to manage profit yield from customer relationship (Noone and Griffin, 1999).

#### **2.6.3.2 Lifetime customer profitability analysis**

This SMA technique includes future years in analyzing customer profitability in addition to current year, and considers all anticipated future revenue streams and costs associated with providing services to a specific customer (Guilding and McManus, 2002). The logic behind considering future years is that long-lifetime customers are generally more profitable to a firm (Jain and Singh, 2002) from a number of grounds (Reichheld and Teal, 1996). First, as long-lifetime customers are mostly loyal customers, they are usually ready to pay premium price for the firm's product. Second, they recommend other customers to buy firm's product. Third, continuous buying of firm's product by long-lifetime customers enhances firm's



revenue. Finally, firm's marketing costs can be saved by serving old customers (Reichheld and Teal, 1996; Jain and Singh, 2002).

Foster and Gupta (1994) suggested the use of this technique in life insurance industry, and recognize it as the minimally explored area of CPA (Guilding and McManus, 2002). The only case study conducted on this technique by Cooper and Kaplan (1991) concentrated on both revenues (e.g., fees, interest income, other charges) and expenses over the lifetime of a proposed loan of a bank to a particular customer in the assessment of lifetime profitability of that loan (Guilding and McManus, 2002).

Major challenges faced by this technique in attracting investment and business community are: (1) developing reliable customer revenue and cost figures, (2) recognition of future downstream costs of customers, (3) inclusion of multi-period horizon, and (4) recognition of several drivers of customer costs (Foster and Gupta, 1997).

### **2.6.3.3 Valuation of customers as assets**

Customers are an important intangible asset of a firm and should be carefully valued and managed (Gupta and Lehman, 2003). Traditionally, firms were emphasizing on 'product' in strategy formulation and ignoring 'customer', and therefore focusing on increasing profits from each product sold (Jain and Singh, 2002). However, understanding the importance of customer loyalty, firms are increasingly adopting 'customer-centric approach' where customers are treated as 'assets', and firms formulate strategies to attain and retain customers in the way of achieving sustainable competitive advantage (Jain and Singh, 2002). More specifically, satisfied customers are perceived as assets and provide long-term value to an organization, and therefore firms must offer superior value to such customers to enhance the firm's profitability (Reichheld and Teal, 1996; Cravens et al., 1997). Marketing academics and practitioners (e.g., Berger and Nasr, 1998; Blattberg and Deighton, 1996; Rust and

Oliver, 2000; Jain and Singh, 2002) attempted to define customer lifetime value as the present value of all future profits generated from a customer (Gupta and Lehman, 2003). In line with this view Guilding and McManus (2002, p. 48) also recognize this technique as 'valuation of customers or customer groups as assets'. They recognized this technique as the calculation of the value of customers to the company which could be undertaken by computing the present value of all future profit streams attributable to a particular customer or group of customers (Guilding and McManus, 2002).

Majority of prior researches (e.g., Hughes, 1997; Niraj et al., 2001; Jain and Singh, 2002) employed 'net profit' in the assessment of customer lifetime value (Pfeifer et al., 2005). As the calculation of net profit takes into account some costs that are related neither to present nor future cash flows (e.g., depreciation of plant and equipment), Pfeifer et al. (2005) focused on the use of cash flows instead of net profit associated with customers. They employed 'present value of the future cash flows attributed to the customer relationship' in the assessment of customer lifetime value. Moreover, they suggested the use of 'time value of money' and emphasized on the use of 'present value (or discounted value) of future cash flows attributed to the customer relationship' instead of 'undiscounted sum of future revenues or lifetime revenue stream' as suggested by Reichheld and Teal (1996). With respect to the treatment of 'acquisition spending', Jain and Singh (2002) proposed to include it in the assessment of customer lifetime value whereas Pfeifer et al. (2005) argued either not to include acquisition cost of customer or rename the output of analysis as 'prospect lifetime value' if acquisition cost is included. Another important issue in the valuation of customers as assets is the use of discount rate that represents a firm's cost of capital. Accounting and finance professional and researchers focus on using cost of capital as discount rate in computing present value of future cash flows associated with customers. In contrast, academics and practitioners in marketing favored the use of retention rate in valuing

customer. For instance, Gupta et al. (2004) document that the use of retention rate provides customer value that is more close to firm's value as compared to the results derived from the usage of discount rate. However, research on customer lifetime value has not been able to attract business and investment community due to the requirement of extensive data and complex modeling and lack of evidence on the link between customer and firm's value (Gupta and Lehman, 2003). Despite this scarcity, Stahl et al. (2003) attempted to provide a conceptual framework to link customer lifetime value to shareholder value as a proxy of firm's value. They argued that customers, as assets, speed up and enhance cash flows, reduce cash flow volatility and vulnerability and increase residual value of the firm, and all these favorable changes enhance shareholders' value.

#### **2.6.4 Other SMA techniques (Planning, control and performance measurement)**

##### **2.6.4.1 Benchmarking**

Benchmarking involves comparing the performance (both financial and operating) of a company against its competitors (external focus), and in some instances it entails the practices of comparing the performance of a division against the best performing division within a company (Elnathan et al, 1996; Hoque, 2001; Tayles, 2011). Pitcher (2015, p. 17) defines benchmarking in CIMA's academic research report as "the establishment, through data gathering, of target and comparators, that permits relative levels of performance (and particularly areas of underperformance) to be identified. Adoption of identified best practices should improve performance". It can also be viewed as a comparison of internal processes to an ideal standard (Cadez and Guilding, 2008), with the ultimate focus on search for best practices by continuous comparison with the best practices and applied to all areas of firm's activities such as strategic development, operations and customer service (Brownlie, 1999; Cadez and Guilding, 2007). Such comparison is carried out to improve organizational

performance in the areas of productivity, competitiveness, quality of products, and costing methods (Elnathan et al 1996; Lorenz, 2015). When a firm faces economic, technological and organizational changes, and when it believes that other firms have superior knowledge of process, technology or quality, it usually demonstrates greater needs for benchmarking (Elnathan et al 1996; Tayles, 2011; Lorenz, 2015). High performing companies with product differentiation strategies are supposed to be highly benefited using this technique (Chenhall and Langfield-Smith, 1998; Tayles, 2011). Using benchmarking process, key areas within the operations are identified for improvement to enhance productivity, competitiveness and quality (Tayles, 2011). Specifically external comparisons allow companies to see how they perform in the market and where further improvement opportunities are available (Murray and Zimmermann, 1997; Tayles, 2011). Though this technique was initially developed and used as manufacturing tool, its vast popularity attracted service sectors to exploit its inherent benefits (Francis and Holloway, 2007). Chenhall and Langfield-Smith (1998) identified and surveyed six aspects of benchmarking in Australian manufacturing firms and revealed that benchmarking of operational processes, strategic priorities and management processes were relatively highly adopted by surveyed firms, while benchmarking of product characteristics and benchmarking within the wider organization were adopted moderately, and benchmarking with outside organization exhibit low adoption. However, prior literatures document limited evidence on the adoption of benchmarking, and also the benefits obtained from its use (Drysdale and Dunn, 1996; Israelsen et al., 1996; Chenhall and Langfield-Smith, 1998).

#### **2.6.4.2 Integrated performance measurement/Balanced Scorecard**

The importance of performance measurement system (PMS) lies in the fact that managers' and employees' behavior are considerably affected by the organization's PMS (Kaplan and

Norton, 1992). Traditionally, firms relied only on financial measures (e.g., return on investment, earnings per share) to learn about the performance of business. This approach was sound in the industrial era (Kaplan and Norton, 1992), but not effective in the new competitive environment (Atkinson et al. 1997; Ittner et al. 1997; Kaplan and Norton 1996; Shields 1997; Hoque and James, 2000). Moreover, relying merely on financial measures can give misleading signals for continuous improvement and innovation activities required to survive in the competitive environment (Kaplan and Norton, 1992, 2001). Exclusive reliance on financial measures that report on the outcomes of past activities could motivate managers and employees to sacrifice long-term value creation for short-term performance (Porter, 1992). These limitations of financial PMS prompted researchers to find and stress the role of non-financial or multidimensional PMS (e.g., quality, customers' satisfaction) (Shields, 1997; Kaplan, 1984; Kaplan and Norton, 1992, 1996; Hussain and Gunasekaran, 2002). Integrated performance measurement systems (IPMS) (particularly balanced scorecard) have been successful in overcoming the drawbacks of traditional financial oriented measurement system (Kaplan and Norton, 1992, 2001). IPMS measure financial and non-financial performance of an organization across a number of perspectives (Cadez and Guilding, 2007), and are linked to strategy and customers (Cadez and Guilding, 2008). Balanced scorecard (BSC) is the most popular model of IPMS, and is closely related to IPMS (Cadez and Guilding, 2007). Robert Kaplan and David Norton are credited for the introduction of the concept 'Balanced Scorecard (BSC)'- a tool of strategic management accounting for measuring business performance from both financial and non-financial perspectives.

In practice, many business enterprises were using more than one performance indicators before the formal introduction of the concept by Kaplan and Norton 26 years ago in their 1992 *Harvard Business Review* article. Since then, it becomes one of the vital tools of strategy formulation, implementation and communication and has been widely adopted by

manufacturing and service companies, non-profit organizations and government entities around the world (Kaplan and Norton, 1996, 2001). Kaplan and Norton (2001, p. 87) noted two reasons behind the wide adoption of BSC since 1992. First, the balanced scorecard emphasizes the linkage of measurement to strategy (Kaplan and Norton, 2001) and the cause-and-effect linkages of strategy (Kaplan and Norton, 1996, 2001). The connection between measurement system and strategy further promotes the role for non-financial measures from an operational checklist to a comprehensive system for strategy implementation (Kaplan and Norton, 1996; Kaplan and Norton, 2001). Second, the balanced scorecard reflects changing nature of technology and competitive advantage (Kaplan and Norton, 2001), and that the BSC enables firms to measure performance of intangible assets. Moreover, strategies for value creation have shifted from managing tangible assets to creating and managing intangible assets that require knowledge-based strategies (Kaplan and Norton, 2001). Examples of creating and managing such intangible assets as noted by Kaplan and Norton (2001, p. 88) include “customer relationships, innovative products and services, high-quality and responsive operating processes, skills and knowledge of the workforce, the information technology that supports the work force and links the firm to its customers and suppliers, and the organizational climate that encourages innovation, problem-solving, and improvement”. Initially, the BSC was conceived as a performance measurement tool that included financial as well as non-financial measures (Kaplan and Norton, 2001; Bhimani et al., 2012). It allows managers to look at the business from four important perspectives by answering four basic questions (Kaplan and Norton, 1992, p. 72):

1. How do customers see us? (Customer perspective)
2. What must we excel at? (Internal perspective)
3. Can we continue to improve and create value? (Innovation and learning perspective)
4. How do we look to shareholders? (Financial perspective)

BSC is like dials in airplane cockpit which supplies manager complex information at a glance (Kaplan and Norton, 1992). Kaplan and Norton (1992) also exhibit how the BSC links performance measures of an organization.

BSC can be used to build a framework of value-creation strategy when combined with strategy map from four major perspectives (Kaplan and Norton, 2001, p. 2):

1. Financial: This includes strategy for growth, profitability and risk from the shareholders' perspective;
2. Customer: It comprises the strategy for value creation and differentiation of products from its competitors that customers value;
3. Internal business process: It includes the strategic priorities for various business processes that can satisfy both customer and shareholders; and
4. Learning and growth (innovation): It prioritizes the creation of a climate that supports required changes in organization, innovation, and growth.

Prior literatures document diversified results with respect to the usefulness of BSC application. For example, Norreklit and Mitchell (2007) documented a widespread satisfaction derived from the use of BSC as strategic tool, while Bhimani and Bromwich (2010) found limited evidence on the improvement firm performance (Lorenz, 2015).

#### **2.6.4.3 Strategic pricing**

Pricing is one of the sensitive decisions firms undertake, since it has identifiable and multiple effects in addition to the immediate effect on profits of the firm taking such decision (Simmonds, 1982). Competitors' reaction of a firm's pricing decision may affect the competitive position of the firm; even it may shape the profitability of the entire industry (Simmonds, 1982). Simmonds (1982) offered the fundamentals explanation of strategic pricing in the context of a case study followed by Jones (1988) and Rickwood et al. (1990)

who also used case study approach to demonstrate the concept (Guilding et al., 2000; Lorenz, 2015). In this new approach, price is seen as a key element of strategic positioning in the industry (Simmonds, 1982). Pitcher (2015, p. 17) defines strategic pricing in CIMA's academic research report as a technique that "takes into account market segments, ability to pay, market conditions, competitor actions, trade margins and input costs, as well as other potential factors affecting market position and demand for the product".

Simmonds (1982) also demonstrated how SMA approach of pricing allow managers to make better informed pricing decisions by focusing on competitor analysis in contrast with traditional approach of pricing that is highly internally focused and uses historical information and results in sub-optimal decision (Guilding et al., 2000; Lorenz, 2015). Simmonds (1982, p. 214) notes three outstanding features of strategic pricing approach: they can be (1) communicated precisely, (2) easily criticized, and (3) used to test the sensitivity of decisions to these criticisms. Guilding et al., (2000, p. 120) cited several factors that might be included in strategic pricing analysis, such as projected market growth; price elasticity; competitor price reaction; and economies of scale and experience.

#### **2.6.4.4 Brand Valuation**

Managing brand remains one of the most imperative tasks to marketing academics and practitioners since the emergent of the concept (Kapferer, 1998; Keller, 1998; Roslender and Hart, 2002). It has gained the attention of accountants recently (Power, 1990; Guilding and Godfrey, 1995; Guilding et al. 2000), though the main concern of accounting was to value them to include in the balance sheet as an asset (Barwise et al., 1989; Guilding and Moorhouse, 1992; Guilding and Pike, 1994; Roslender and Hart, 2002).

Cadez and Guilding (2008, p. 28) define this approach of SMA as "the financial valuation of a brand through the assessment of brand strength factors such as: leadership, stability, market,



internationality, trend, support, and protection combined with historical brand profits”. Guilding et al. (2000) emphasize the valuation of strength factors associated with the brand, while Pitcher (2015) stresses on discounted value of future cash flows that will be generated using the brand. Roslender and Hart (2002) attempted to rename it as ‘brand management accounting’ and suggested it as the next phase of SMA in which marketing themes are equally presented, and which has been emerged as the logical next step on from attribute costing.

A successful brand must satisfy the ‘rational’ and ‘emotional’ needs of buyers (deChernatony and McDonald, 1998); the rational need is the ‘tangible’ or ‘objective’ aspect of the brand which is represented by ‘product benefits’, while emotional need is the ‘intangible’ or ‘subjective’ aspect of the brand and represented by the ‘values of abstract’ (Nilson, 1998; Roslender and Hart, 2002). Kotler et al. (1999) recognized these two aspects as ‘core benefits’ and ‘personality’ of a brand that determine together the successfulness and sustainability of the brand (deChernatony and McDonald, 1998; Nilson, 1998; Roslender and Hart, 2002). Both marketing managers and management accountants have to be conscious about these two aspects of brand as Roslender and Hart (2002, p. 271) note that “it would be wrong to conclude that in the case of brands it is the task of marketing managers to be concerned with the intangible or subjective aspects of such offerings, while their management accountant counterparts focus on their more tangible or objective aspects”. The greatest challenge for management accountants is to understand the pattern of trade-offs between price and values; in addition to determining the price for tangible aspect of an offerings, they must be able to assess how much customers are willing to pay for the subjective features of the offerings (Roslender and Hart, 2002).

As brands, as intellectual capital, can provide the basis for long-term value creation and competitive advantage (Guilding et al, 2000; Lorenz, 2015), it is recognized as an SMA

technique by a number of management accounting researchers (e.g., Guilding et al., 2000; Roslender and Hart, 2002; Cravens and Guilding, 2001; Cadez and Guilding, 2007, Cadez and Guilding, 2008; Cinquini and Tenucci, 2010). Among the several benefits of this approach of SMA technique are: the creation of environment where accounting and marketing staffs can work together; generation and supply of more detailed information required for brand related decision, and the emphasize on long-term performance to counter the short-termism of traditional performance measurement system (Guilding, 1992; Lorenz, 2015). The valuation method used can affect the extent of strategic impact of brand valuation exercise (Guilding et al., 2000). Strategic implications of brand valuation are found to be apparent when the valuation method used is akin to that developed by Interbrand (an accounting oriented method that combines projected brand earnings, and that endorses between accounting and marketing functions) (Guilding and Pike, 1994; Guilding et al., 2000).

## **2.7 Chapter Summary**

This chapter started with the review of evolution and development of management accounting and SMA over time. Basically, how the relevance lost of traditional MAPs led to the emergence of externally focused and long-term oriented SMA techniques is highlighted. Afterwards, the criteria of isolating SMA from conventional MAPs are discussed to develop a list of SMA techniques. Then, a fundamental explanation of each of the 17 SMA techniques is provided. Moreover, the advantages and limitations of each technique are highlighted wherever relevant. To what extent these selected SMA practices have been adopted across the globe, what factors influence their adoption decision, and what is the impact of their adoption on performance are discussed in the next chapter. More importantly, studies focusing on these issues in the context of developed and developing economies are presented separately.

# **CHAPTER THREE**

## **LITERATURE REVIEW**

### **3.1 Introduction**

This chapter provides an overview of studies conducted on strategic management accounting (SMA) techniques in the context of developed and developing economies separately. Additionally, studies focused exclusively on SMA techniques are separated from studies that focused on both traditional management accounting techniques and SMA techniques in a single study. Furthermore, studies that focused solely on SMA techniques are subdivided into three categories: (1) studies that consider SMA techniques as a package or as an umbrella term which comprises all management accounting techniques that passed the criteria to be SMA techniques, (2) studies focused on a particular group of SMA techniques (such as cost management oriented techniques or competitor focused techniques), and (3) studies focused on a single SMA techniques such as ABC, BSC, or target costing. Moreover, each section contains discussion on four aspects of SMA practices: (1) adoption status, (2) perceived benefits derived from the adoption, (3) influencing factors on adoption decision and (4) effect of adopting a particular/sub-group/ group of techniques on firm performance. Afterward, a separate section is devoted to provide relevance of this study to the context of Bangladesh. A summary of theories applied in the previous research in identifying the factors influencing SMA adoption/ usage is also provided. Finally, the limitations of previous studies are summarized and research gaps are identified followed by chapter summary. The structure of literature review is depicted in figure 3.1 on the next page.

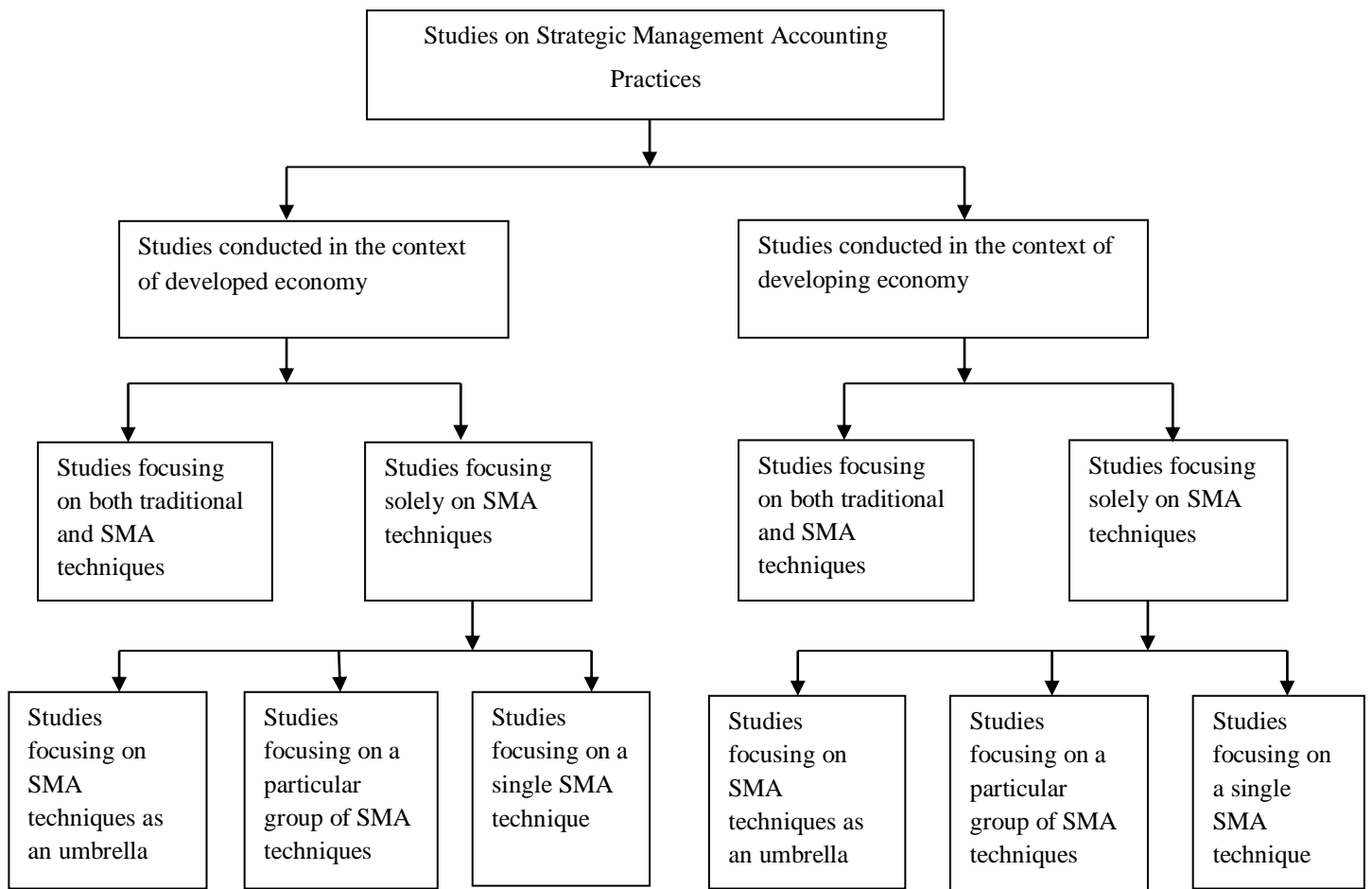


Figure 3.1: Structure of literature review on SMA practices. Source: Author's work.

### 3.2 Studies conducted in the context of developed economy

The present study divides the empirical works performed on SMA usage in the developed economy setting into two categories: (1) studies that focused on both conventional and SMA practices, and (2) studies that focused solely on SMA practices. Empirical studies focused on both traditional and SMA techniques (e.g., Scarbrough et al., 1991; Bright et al., 1992; Drury et al., 1993; Bhimani, 1994; Clarke, 1997; Chenhall and Langfield-Smith, 1998; Wijewardena and De Zoysa, 1999; Haldma and Laats, 2002; Hyvonen, 2005; Abdel-Kader and Luther, 2006, 2008; Chow et al., 2006; Wu et al., 2007; Pavlatos and Paggios, 2009; Angelakis et al., 2010; Lorenz, 2015) are significantly greater than those focused solely on SMA techniques (e.g., Lord, 1996; Szendi and Shum, 1999; Guilding et al. 2000; Cravens

and Guilding, 2001; Guilding and McManus, 2002; Roslender and Hart, 2003; Cadez and Guilding, 2007, 2008, 2012; Cinquini and Tenucci, 2007, 2010; Turner et al., 2017, Cescon et al., 2019; Hadid and Al-Sayed, 2021) in the context of developed economy.

### **3.2.1 Studies focusing on both traditional and SMA techniques**

The findings of studies that concentrated on both traditional management accounting techniques and SMA techniques in the context of developed countries revealed greater usage of traditional techniques as compared to SMA techniques. For instance, Chenhall and Langfield-Smith (1998) conducted a survey among 78 largest Australian manufacturing companies and documented higher adoption of traditional MAPs such as budgeting for planning financial position (100%), capital budgeting tools (99%), budgeting for planning cash flows (99%), performance evaluation based on return on investment (ROI) (96%) as compared to SMA techniques such as activity-based costing (56%), value chain analysis (49%), and target costing (38%) with the exception of benchmarking of operational processes (93%). The findings also revealed the supremacy of traditional tools over SMA tools in terms of perceived benefits derived from the usage. Interestingly, the surveyed companies showed their eagerness to adopt a number of SMA techniques such as formal strategic planning, strategic plans developed with budgets, performance evaluation based on customer satisfaction surveys and non-financial measures, and benchmarking of operational processes in the upcoming three years.

Scarbrough et al. (1991) surveyed 198 Japanese firms and revealed that the surveyed firms relied on management accounting tools like target costing, budget system and performance enhancement systems such as quality costing and just-in-time for the purposes of cost analysis and cost control. Bright et al. (1992) surveyed 677 UK manufacturing firms and reported higher adoption rate of traditional MAPs as compared to SMA techniques. However,

they also reported that the use of SMA techniques such as ABC is much higher than their expectations. The major barriers in implementing new costing techniques, as mentioned by surveyed firms, are: cost of change, lack of relevant skills, quality of existing supporting system, management inertia, and investment in existing systems, and lack of relevant software. The surveyed firms ranked their plan to use ABC at the top, followed by quality costing, target costing and life cycle costing in the coming years. Drury et al. (1993) surveyed among UK manufacturing firms and reported that 91% of the firms use 'full costs' or absorption costing whereas only 10% of the surveyed firms adopted SMA techniques like ABC. Moreover, the findings also revealed that most of the surveyed firms relied on outmoded traditional MAPs rather than adopting more advanced or SMA techniques like ABC or BSC. Their findings are also consistent with Ask and Ax (1992) who conducted surveys among Swedish companies and the findings of Pavlatos and Paggios (2009) who conducted a survey on 85 leading hotels in Greece. Particularly, Pavlatos and Paggios (2009) documented the wide adoption of several traditional MAPs such as profitability measures (100% of the sampled hotels), budgeting for planning and operations (98.8%), budgeting for controlling costs (91.8%), product profitability analysis (94.1%), customer profitability analysis (70.6%) and absorption costing (65.9%) than recently developed SMA tools such as ABC (23.5%), BSC (21.2%), and benchmarking (18.8%). Despite the positive attitudes toward the adoption of SMA tools particularly ABC, BSC, and benchmarking in the near future, past benefits derived from usage and future emphasize were significantly greater for traditional MAPs.

In a later survey conducted on 83 large manufacturing companies in Greece, Angelakis et al. (2010) confirmed an improvement in the use of recently developed SMA tools such as several phases of BSC (e.g., performance evaluation based on: production process ranked 4 out of 45 MAPs, qualitative measures ranked 5, and employee attitude ranked 7) and

benchmarking (ranked 11). Nevertheless, analogous to the findings of Pavlatos and Paggios (2009), Angelakis et al. (2010) also reported traditional MAPs such as product profitability analysis (ranked 1 out of 45 MAPs) and budgeting for controlling costs (ranked 2) at the top of the list of MAPs implementation.

Abdel-Kader and Luther (2006) surveyed 122 British food and beverage manufacturers with respect to the relative usage and importance of 38 MAPs. Their findings are fairly similar to Chenhall and Langfield-Smith (1998). Traditional MAPs such as budgeting for planning (ranked 1 among 38 MAPs), budgeting for controlling costs (ranked 2), performance evaluation based on financial measures (ranked 3), and product profitability analysis (ranked 4) are extensively used by the surveyed companies. In contrast, SMA techniques such as product life cycle analysis (ranked 34 out of 38 MAPs), ABC (ranked 32), benchmarking (ranked 31), cost of quality (ranked 29), and value chain analysis (ranked 25) are rarely used by the companies. Performance evaluation based on financial measures, product profitability analysis and budgeting are perceived to be the most important MAPs by the surveyed companies. Balanced scorecard or other non-financial measures are perceived important but rarely or never used by 40% of the surveyed companies. Lorenz (2015) also documented low adoption of recently developed MAPs in the service industry in the UK as compared to traditional MAPs. 73% of the traditional MAPs were in the top 50% of the surveyed MAPs. More specifically, eight (8) out of top ten (10) were from traditional MAPs.

While majority of the surveys demonstrated low or rare adoption of SMA techniques, some other studies documented different results. For instance, Chow et al. (2006) surveyed 225 Chinese listed (manufacturing and service) companies and reported that current MAPs of the surveyed companies have reached the third stage as defined by IFAC-1998. Specifically, their study confirmed above average usage of several SMA practices such as ABC (mean value 3.01 in the scale of 5), BSC (3.45), cost of quality (3.07), and competitor analysis (2.74).

Furthermore, several fourth stage SMA tools such as target costing (mean value 3.35 in the scale of 5), cost benchmarking (3.09), and value chain analysis (3.07) are adopted by the surveyed companies. Key drivers or contingent factors influencing the development of MAPs in China, as identified by their study, are: marketization, privatization, access to World Trade Organization, accounting education and research, and information technology.

Wu et al. (2007) conducted another survey among 115 Chinese state-owned enterprises (SOEs) and 64 joint ventures (JVs) and documented that budgeting for controlling costs, profit and sales budgeting, product costs system and performance evaluation were highly beneficial to the Chinese firms. However, they also reported several SMA techniques such as BSC, product life cycle analysis, target costing, and activity-based management as moderately beneficial to the surveyed firms. With respect to the contingent factors, ownership type was found to be the most influential one followed by the nature of management accounting technique under consideration. While the studies cited above focused on the MAPs of a particular country, some other studies have concentrated MAPs across different countries in a single study. For example, Wijewardena and De Zoysa (1999) surveyed 217 largest manufacturing firms (measured by total assets) in Japan and 231 manufacturing firms in Australia in the year 1997. Their findings showed a number of important differences in terms of relative usage of MAPs. For example, Australian firms emphasized cost control tools (e.g., budget, standard costing) at the manufacturing stages whereas Japanese firms emphasized cost planning and cost reduction tools (e.g., target costing) at the design stage. Another important difference was that changes in MAPs were more frequent in Japanese firms than their Australian counterparts. Traditional MAPs such as budgets, historical accounting statements and standard costing were ranked first, second and third respectively by Australian firms in terms of their importance. In contrast, Japanese firms ranked target costing, cost-volume-profit analysis and budgets as first, second and third of the chart



respectively. Interestingly, the use of budgets was still emphasized in both the countries. The most significant variation was seen in respect of two SMA techniques: ABC and target costing. Japanese firms placed the greatest importance on the use of target costing and ranked it 1 (among 11 MAPs), whereas Australian firms placed very insignificant emphasis on its use and ranked it 10. On the contrary, Australian firms placed much importance on the use of ABC and ranked it 4, whereas Japanese firms disregarded the technique by ranking it 11.

Angelakis et al. (2010) compared the findings of 45 MAPs of 83 large manufacturing companies in Greece with the findings of Hyvonen (2005) on 51 companies in Finland. No significant differences were reported in the sense that both the studies demonstrated higher adoption of traditional MAPs such as budget for controlling costs (ranked 1 out of 45 MAPs in Finland and ranked 2 in Greece) and product profitability analysis (ranked 1 in Greece and 3 in Finland). Nevertheless, it is noteworthy to mention that Finnish companies demonstrated higher adoption rate of SMA tools as compared to their counterpart in Greece (e.g., performance evaluation based on qualitative measures ranked 2 in Finland and 5 in Greece out of 45 MAPs and employee attitude ranked 3 in Finland and 7 in Greece, performance evaluation based on customer satisfactions survey ranked 4 in Finland and 9 in Greece, and benchmarking of management processes ranked 9 in Finland and 11 in Greece).

Armitage et al. (2016) compared the findings of MAPs of 22 small and medium enterprises (SMEs) from Australia and Canada (11 from each country) through an in-depth interview survey and documented the dominance of traditional MAPs (e.g., job order costing, standard costing, variable costing, flexible budget) along with promising usage of some contemporary SMA tools (target costing, quality costing, activity-based costing, balanced scorecard). Moreover, their findings showed significant variations in the usage of SMA tools between the countries. For example, the extent of usage of quality costing by Australian SMEs was 36%

which were almost twice of the Canadian SMEs (18%); BSC usage rate was 45% in Australia and 27% in Canada, and ABC 9% in Australia while absent in Canada.

Despite the plenty of studies on the usage rate of MAPs, there exist comparatively few studies that have concentrated on the identification of contingent factors influencing the adoption decision (Rashid et al., 2021). Haldma and Laats (2002) surveyed 62 large Estonian manufacturing companies and employed contingency approach to find the influencing factors. In terms of usage rate, majority of the companies relied on traditional tools such as full costing (54.8%), variable costing (38.7%), process costing (51.3%), job-order costing (33.7%), and only 7% of the surveyed companies use ABC. Their study introduced some new drivers such as legal accounting environment and shortage of qualified accountants in addition to the contingencies identified in prior studies such as intensity of competition and organization size. Another notable finding of the study was that conceptual change in the areas of financial accounting has taken place within a short period of time in the Eastern and Central European transition countries which served as a precondition in the design, introduction and development of management accounting system. Abdel-Kader and Luther (2008) conducted another survey among the management accountants and production managers of British food and beverage manufacturers (122 usable responses were received from management accountants and 123 from production managers) in respect of the impact of 10 contingent factors on 38 MAPs. Their study categorized 10 contingent variables into three broad groups: external characteristics (perceived environmental uncertainty and customers' power), organizational characteristics (competitive strategy, structure, and size), and manufacturing or processing characteristics (complexity of process system, advanced manufacturing technology (AMT), total quality management (TQM), just-in-time (JIT), and product perishability). It is, however, noteworthy to mention that the study introduces customers' power and product perishability for the first time in MAPs literature. 38 MAPs

are divided into four stages based on International Federation of Accountants-IFAC (1998) statement on Management Accounting Concepts: stage 1 (budgeting for controlling costs, performance appraisal based on financial measure etc.) and stage 2 (budgeting for planning, cost-volume-profit analysis, product profitability analysis) include most of the traditional management accounting tools, whereas stage 3 (ABC, BSC, cost of quality) and stage 4 (target costing, benchmarking, value chain analysis) include most of the advanced and SMA techniques. Their findings reported significantly higher adoption rate of traditional MAPs as compared to SMA tools which is identical to the findings of their 2006 study. Environmental uncertainty, customer power, decentralization (structure), size, AMT, TQM and JIT were found as the most influential (contingent) factors in the sophistication of MAPs. Armitage et al. (2016) documented the influence of decision usefulness of MAPs, the complexity of operating environment and age of the firm on the adoption and use of MAPs in the Australian and Canadian SMEs.

The foregoing review of literature on MAPs focusing on both traditional and contemporary SMA tools in a single study in the context of developed country confirmed that traditional MAPs are still popular and highly adopted by companies as compared to the contemporary SMA tools with few exceptions (e.g., Japan). The perceived benefits derived and future emphasis placed were also favorable to traditional MAPs with few exceptions. Among the traditional MAPs, budgeting for controlling costs, product profitability analysis, performance evaluation based on financial measures were highly popular and adopted by surveyed firms and perceived beneficial to them. However, some contemporary SMA tools such as benchmarking, performance evaluation based on non-financial measures and target costing were highly adopted by firms in some countries, while some other SMA tools such as ABC/ABM, quality costing is moderately applied by firms in some countries. It is noteworthy to mention that most of the studies focused on adoption, benefits, and future

emphasis of MAPs. Only few studies attempted to identify factors influencing the adoption and diffusion of MAPs, and very few studies concentrated on finding the effect of MAPs adoption on organizational performance (Rashid et al., 2021). Thus, there still exists lack of empirical evidence in the literature of MAPs adoption, contingent factors affecting adoption and development of new MAPs, and more importantly, the effect of using MAPs on firm performance.

### **3.2.2 Studies focusing exclusively on SMA techniques**

The empirical studies that focused exclusively on SMA techniques in the context of developed countries can be sub-divided into three categories to get better insight: (1) studies that focused on SMA techniques as a package or as an umbrella term (comprises all the MAPs that meet the criteria of becoming a SMA), (2) studies focusing on a particular group of SMA techniques such as costing techniques or competitor based techniques or customer focused techniques, and (3) studies that focused only on a particular SMA technique such as ABC or BSC or target costing or value chain analysis.

#### **3.2.2.1 Studies focusing on SMA techniques as a package**

The volume of empirical studies that focused solely on a portfolio of SMA techniques using the setting of developed country is not very large. Majority of these research (e.g., Szendi and Shum, 1999; Guilding et al. 2000; Cravens and Guilding, 2001; Cadez and Guilding, 2007; Cinquini and Tenucci, 2007; Cadez and Guilding 2008; Cinquini and Tenucci, 2010; Cadez and Guilding, 2012; Turner et al., 2017, Cescon et al., 2019; Hadid and Al-Sayed, 2021) have been conducted in USA, UK, Australia, New Zealand, Italy, and Slovenia. Some of these studies have focused solely on a particular country (e.g., Szendi and Shum, 1999; Cravens and Guilding, 2001; Cinquini and Tenucci, 2007; Cadez and Guilding 2008; Cadez and

Guilding, 2012; Turner et al., 2017, Cescon et al., 2019; Hadid and Al-Sayed, 2021), whilst other studies (e.g., Guilding et al. 2000; Cinquini and Tenucci, 2010) have focused on comparison with the practices of other countries.

Szendi and Shum (1999) conducted a survey on the usage of 22 advanced manufacturing and management accounting techniques in Latin American firms. While the title of the paper was “Strategic management accounting practices in Latin America”, they used “advanced manufacturing and management accounting techniques” instead of SMA in the abstract and other part of the paper without providing a convincing argument as to why such MAPs are considered as ‘advanced’ or ‘SMA’ techniques (Cadez and Guilding, 2007). Cadez and Guilding (2007) claimed, after extensive investigation, that majority of the 22 techniques surveyed by Szendi and Shum (1999) were in the category of traditional MAPs. They argued the justification of their claim based on the work of Guilding et al. (2000) who provided an original distillation (as claimed by Guilding et al., 2000, p. 117) of SMA techniques by specifying several criteria to be qualified as SMA techniques such as environmental (marketing/ external), focus on competitors, long-term, and forward-looking (Cadez and Guilding, 2007; Tayles, 2011; Rashid et al., 2020). Cadez and Guilding (2008 p. 838) grouped these criteria into two major categories: environmental (outward-looking) and/or long-term (forward-looking). Guilding et al. (2000) held that these criteria are justified as they are compatible to majority of the ten schools of strategy which viewed strategy as associated with long-term time dimension (beyond one year) and externally based perspective focusing on firm’s commercial environment (Mintzberg, 1987; Porter, 1996). Based on the preceding discussion, the findings of Szendi and Shum (1999) are excluded from the area of SMA literature.

Guilding et al. (2000) provided the most prominent evidence of SMA usage across different countries for the first time in the SMA literature. Their study focused on the usage rate and

apparent benefits of using 12 techniques in the USA companies (127), New Zealand (124), and the UK (63). These 12 SMA techniques (though Guilding et al. (2000, p. 118-120) provided explanation of 11 SMA techniques in the original paper by grouping brand value budgeting and monitoring into brand valuation) are selected using the criteria of demonstrating strategic orientations including competitors focused, environmental (marketing/ external), long-term horizon, and forward-looking orientations (Guilding et al., 2000). They reported a fairly identical rate of SMA usage in the selected companies in all the three countries (i.e., US, UK and New Zealand). Moreover, their study documented a wide range of application rates of the selected SMA techniques. Competitor-focused accounting techniques (competitive position monitoring ranked 1, competitors' performance appraisal based on published financial statements ranked 2 and competitor cost assessment ranked 3), strategic pricing and strategic costing were reported as the most famous and highly-used techniques in all the three countries with a slight variation in their mean scores. Surprisingly, majority of the rest of the practices were not extensively adopted in the surveyed companies. However, they reported a higher prospective usage of a wide range of techniques which is reflected in the perceived merit scores. The perceived merit scores of several SMA techniques were considerably higher than their adoption rate. Furthermore, the eight SMA techniques that secured lower usage scores have been assigned above average score in terms of perceived merits (Guilding et al., 2000). This suggests the existence of gap between what is needed and what is supplied by accounting systems (Foster and Gupta, 1994; Guilding et al., 2000).

Surprisingly, the study found that the term 'SMA' is not popular in practice and also not appreciated the use of the term by the respondents. The study also highlighted relatively greater use of some SMA tools in New Zealand as compared to US and UK while control for company Size (see Table 3.1 below for details).

Cravens and Guilding (2001) added three more techniques (ABC, benchmarking, and integrated performance measurement) and performed another study on the adoption rate of SMA tools in the USA. Their findings documented competitor performance appraisal, competitive position monitoring, and benchmarking as the most famous and extensively used SMA tools in the USA.

Cadez and Guilding (2007) included a further three (3) customer-focused SMA techniques to the list of Cravens and Guilding (2001) study. These three new techniques are included based on the work of Guilding and McManus (2002) who viewed customer accounting as an SMA technique based on the criteria proposed and employed by Guilding et al. (2000). Guilding and McManus (2002) identified four elements of customer accounting (customer profitability analysis, lifetime customer profitability analysis, customer segment profitability analysis, and valuation of customers as assets) that are further grouped into three categories by Cadez and Guilding (2007) by collapsing customer profitability analysis and customer segment profitability analysis into 'customer profitability analysis'. Surprisingly, they excluded activity-based costing (ABC) from the list studied by Cravens and Guilding (2001) on the ground that ABC is more concerned with costing accuracy than strategic orientation. Moreover, they merged brand value budgeting and monitoring into 'brand valuation' which is in consistent with Guilding et al. (2000). This resulted in total 16 (15-1+3-1) SMA techniques that were surveyed in the largest manufacturing firms (based on total revenue) in Slovenia and Australia to identify the difference in the adoption of such techniques. The findings showed that costing oriented SMA techniques (quality costing and strategic costing) were adopted more extensively in Slovenia as compared to their counterpart in Australia.

Table 3.1: SMA usage rates across the globe [Modified from Rashid et al., 2021]

Country	Developed countries*																					
	USA				UK				Australia				New Zealand				Italy				Slovenia	
Study	Guilding et al. (2000)		Cravens and Guilding (2001)		Guilding et al. (2000)		Hadid and Al-Sayed (2021)		Cadez and Guilding (2007)		Nuhu et al. (2017)		Guilding et al. (2000)		Cinquini and Tenucci (2007)		Cinquini and Tenucci (2010)		Cescon et al. (2019)		Cadez and Guilding (2007)	
Sample size	127		120		63		149		26		127		124		92		92		55		134	
Scale used	1-7		1-7		1-7		1-7		1-7		1-7		1-7		1-7		1-7		1-7		1-7	
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
ABC/M	NA		3.54	6	NA		3.03	7	NA		4.02	3	NA		3.51	12	3.27	9	NA		NA	
Attribute costing	2.37	10	NA		1.91	10			1.71	15	NA		2.54	9	5.28	1	NA		4.03	11	3.60	9
LCC	2.73	9	2.73	10	2.60	8	2.23	10	2.21	12	NA		2.43	10	3.19	14	2.92	11	4.29	10	2.90	12
Quality costing	3.07	8	3.07	9	3.11	6	2.54	9	1.67	16	NA		3.46	5	4.31	7	4.12	4	4.60	8	4.31	2
Strategic costing	3.43	5	NA		3.72	5	3.18	5	3.33	7	NA		3.44	6	4.42	6	NA		NA		4.13	4
Target costing	3.19	6	3.19	7	2.90	7	3.21	4	2.00	14	4.16	2	3.16	7	3.84	9	3.62	6	4.92	5	3.64	8
VCC	3.15	7	3.15	8	2.60	8	2.73	8	2.63	9	2.40	5	3.15	8	3.67	11	3.43	8	5.03	4	3.90	7
CCA	4.09	4	4.09	4	4.37	4			3.96	4	NA		3.91	4	4.14	8	3.95	5	4.54	9	3.38	10
CPM	4.93	1	4.93	1	5.20	1	3.58	3	4.40	1	NA		4.95	1	4.84	4	4.69	2	5.56	2	4.31	2
CPAFS	4.50	2	4.50	3	4.78	2	3.17	6	4.04	3	NA		4.17	3	4.61	5	4.44	3	4.63	7	4.47	1
CPA	NA		NA		NA		4.41	1	3.50	6	NA		NA		4.99	2	4.86	1	NA		3.90	7
LTCPA	NA		NA		NA				2.35	11	NA		NA		NA		NA		NA		2.70	13
VCA	NA		NA		NA				2.17	13	NA		NA		NA		NA		NA		2.08	14
Benchmarking	NA		4.59	2	NA				4.36	2	4.53	1	NA		3.82	10	3.61	7	NA		3.92	6
Brand valuation	2.35	11	NA		2.50	9			2.52	9	NA		2.16	11	NA		NA		4.74	6	3.34	11
IPM/BSC	NA		4.00	5	NA		3.59	2	2.83	8	3.16	4	NA		3.43	13	3.17	10	5.34	3	3.94	5
Strategic pricing	4.36	3	NA		4.73	3			3.88	5	NA		4.63	2	4.91	3	NA		5.72	1	4.29	3



In contrast, benchmarking and competitor cost assessment were reported as highly adopted in the Australian companies. However, benchmarking, competitor focused techniques, and strategic pricing were reported popular in both the countries.

In the same year, another (internet questionnaire) survey was conducted by Cinquini and Tenucci (2007) in the largest Italian manufacturing firms to explore the adoption of 14 techniques and factors that influence their usage. They grouped three customer focused SMA techniques (as surveyed by Cadez and Guilding, 2007) into one technique 'customer accounting'. They reported that several techniques are widely used (94.6% firms used 5 to 14 techniques at the same time, 19.6% used all the techniques contemporaneously) in the sampled firms in Italy. Attribute costing (65% firms highly adopted this technique), customer accounting (55% high adopter), strategic pricing (55% high adopter) and competitive position monitoring (47% high adopter) were found as the most widely used techniques as reported by the study. With respect to the factors influencing the adoption decision, they reported a weak contingent role of strategic positioning on the adoption decision of SMA techniques (Rashid et al., 2021). Surprisingly, they reported an insignificant effect of other variables such as strategic pattern, nature of industry, and company size on the adoption decision.

One year later, Cadez and Guilding (2008) investigated the impact of strategic choices (subdivided into prospector/defender and deliberate strategy formulation orientation), company size and market orientation on SMA adoption and accountants' participation in strategic decision process in 193 largest Slovenian companies. The study employed an integrated contingency model using structured equation modeling in examining the mediating role of SMA use and accountants' participation in strategic decision on performance. They survey the usage of 16 techniques as studied by Cadez and Guilding (2007) under five different groups: (1) costing; (2) planning, control and performance measurement (benchmarking and IPM/BSC); (3) strategic decision making (strategic costing, strategic pricing and brand

valuation); (4) competitor accounting; and (5) customer accounting (customer profitability analysis, lifetime customer profitability analysis and valuation of customers as assets). The findings documented a positive association between SMA usage and prospector strategy, company size, deliberate strategy formulation, and accountants' participation in strategic decision. Consequently, their findings go against the Cinquini and Tenucci (2007) study that documented SMA usage as non-strategy driven. They also documented that SMA usage positively affect firm performance. Appendix 1 shows the effect of using SMA techniques on firm performance (by classifying studies into developed vs. developing economies).

Cinquini and Tenucci (2010) performed another study (the first survey was conducted in 2007 as mentioned earlier in this section) in the largest Italian manufacturing firms. The study employed contingency approach to identify whether contingent factors such as business strategy and company size can influence SMA usage decision. The findings documented that customer accounting (ranked 1), competitive position monitoring (ranked 2) and competitor appraisal based on published financial statements (ranked 3) are the most widely used techniques. These findings were supportive to their earlier findings in terms of SMA usage but inconsistent with respect to contingencies influencing the decision of SMA usage. The study reported that companies following defender strategy make higher usage of costing based techniques which goes against the findings of Cadez and Guilding (2008), while customer-oriented techniques are highly used in companies pursuing build strategy. The study also documented that cost leadership strategy followers emphasized greater usage of costing oriented SMA techniques.

Cadez and Guilding (2012) performed one more research in Slovenia and employed configuration tactic to investigate the inter-relationship among strategy, SMA, and performance. They reported that diverse strategic and structural alternatives results in analogous performance level, and that higher performance can be achieved from internally

consistent configurations. Nuhu et al. (2017) examined the usage rate and success of contemporary MAPs in 127 Australian public sector organizations. In terms of adoption, benchmarking, strategic cost management and BSC were at the top of the list. Moreover, these techniques (benchmarking, strategic cost management, ABC, and BSC) were at the top of the list in terms of the success rate. The study also reported a positive association between the interactive and diagnostic approaches to using management control systems and adoption of contemporary MAPs. The success of the organization was also found to be affected by the adoption of contemporary MAPs.

Recently, Pavlatos and Kostakis (2018) examined the association of SMA usage with top management team (TMT) characteristics and past financial performance in Greek manufacturing companies. The study considered a total of eight (08) SMA techniques and reported a greater SMA usage in companies experiencing low profitability in the past periods. In terms of TMT characteristics, they reported that educational background, tenure and creativity have significant positive effect on the adoption and usage of SMA techniques.

More recently, Hadid and Al-Sayed (2021) conducted another survey in the UK manufacturing companies and employed contingency approach to examine the direct and indirect effect of management accountant networking, information system (IS) quality, innovation culture, and outcome culture on SMA implementation. In terms of adoption status, they reported customer profitability analysis, BSC, and competitive position monitoring at the top of the list. In terms of the effect of contingent factors, the study documented a positive relationship between management accountant networking, outcome-oriented culture and the implementation of SMA practices. More importantly, this relationship is positively moderated by IS quality, whereas innovation-oriented culture shows a significant indirect positive effect through management accountant networking.

The summary of the studies conducted on the SMA practices as a portfolio in the developed economy reported mixed results. SMA adoption rates in Italy and Slovenia are relatively higher than that of USA, UK, Australia and New Zealand. Competitor-oriented tools are reported as the greatest famous and extensively adopted in all the sample countries. In addition, strategic pricing, benchmarking, and customer profitability analysis are widely adopted techniques in the US, UK, Australia and New Zealand, while customer-focused techniques are found to be the most popular techniques in Italy and Slovenia. Majority of these studies focused on the level of adoption, past benefits, and future emphasize. The volume of studies that focused on the recognition of contingent factors influencing the usage decision is very limited, while studies that analyzed the effect of usage on performance are more limited. Strategy typologies have mixed effect with mostly positive in nature, whereas management accountant networking, outcome-oriented culture, and TMT characteristics are found to have positive effect on SMA usage. The direct as well as the mediating impact of SMA usage on performance was also reported positive.

### **3.2.2.2 Studies focusing on a specific group of SMA techniques**

The volume of studies that concentrated on the usage of a specific group of SMA is considerably limited. Guilding (1999) provided evidence on the usage of competitor-focused accounting practices in New Zealand. The study included five techniques under competitor accounting: (1) competitor cost assessment (CCA), (2) competitive position monitoring (CPM); (3) competitor performance appraisal based on published financial statements (CPAFS); (4) strategic costing; and (5) strategic pricing. The usage rate of competitor accounting was much greater than that was estimated. Competitive position monitoring was found as the most widely used (ranked 1, mean value 4.95 in the scale of 7) technique as well as the most useful (ranked 1, mean value 5.69 in the scale of 7) technique in the sampled

firms. The study also focused on the identification of contingent variables influencing the usage decision of competitor-oriented techniques. The findings confirmed a significant positive effect of company size (on all techniques except strategic pricing), competitive strategy (on CCA, CPM and CPAFS) and strategic mission (on strategic costing and pricing) on the adoption decision to use competitor accounting.

Three years later, Guilding with McManus (2002) focused on customer accounting practices (CAPs) of top 500 (in terms of market capitalization) Australian companies (148 usable responses were received). The study considered five dimensions of CAPs: customer profitability analysis (CPA), customer segment profitability analysis (CSPA), lifetime customer profitability analysis (LTCPA), valuation of customers or group of customers as assets (VCA), and customer accounting (a holistic notion). Among the five dimensions of customer accounting practices, customer accounting (ranked 1, mean value 4.22 in the scale of 7) and CSPA (ranked 2, mean 4.12) were reported at the top of the list in terms of adoption. In terms of perceived managerial benefits, CSPA (ranked 1, mean 5.28 in the scale of 7) and customer accounting (ranked 2, mean 5.21) were listed at the top of the chart. Competition intensity was found positively associated with only CSPA, whereas market orientation was positively associated with customer accounting, LCPA, and VCA. A significant positive relationship between company size and customer accounting was reported by the study.

To sum up the findings of studies focusing on a particular group of SMA techniques, it is observed that the volume of studies is very trivial. Moreover, the studies focused only on adoption, perceived merit and contingencies and ignored the future emphasize and effect of usage on company performance. Competitive position monitoring was the most widely used and beneficial among the competitor-focused SMA techniques. Three contingencies affect their adoption: size of the company, strategic mission, and competitive strategy. With respect

to the customer accounting, customer segment profitability analysis and customer accounting was reported as the highly used and beneficial technique. The effect of contingencies such as market orientation, competition intensity and company size were reported positive for specific techniques.

### **3.2.2.3 Studies focusing on a single SMA technique**

The volume of studies focusing on a particular SMA technique (e.g., ABC, BSC, target costing) in the context of developed economy is substantially large. Among the SMA techniques studied, activity-based costing (ABC) has attracted both the academics and practitioners since its emergence (Johnson, 1992; Shields, 1995; Innes and Mitchell, 1995; Innes et al., 2000; Bjornenak and Mitchell, 2002). Unfortunately, many of these studies documented that the number of firms adopting ABC is declining over time (Bjornenak and Mitchell, 2002; Gosselin, 2006), and that many firms stop the implementation process (Nanni et al., 1992; Madison and Power, 1993; Innes and Mitchell, 1995; Gosselin, 1997, 2006; Innes et al., 2000) because of several difficulties (Innes et al., 2000) specifically due to the rising costs and employee irritation (Kaplan and Anderson, 2004). Moreover, the volume of articles on ABC has declined substantially during the past three decades (Bjornenak and Mitchell, 2002; Gosselin, 2006). The low diffusion of ABC despite its emergence in a favorable context has been termed as ‘ABC paradox’ (Gosselin, 1997). However, Kaplan (1998) suggested researchers to wait before evaluating the success of ABC and claimed that ABC was not successful in a particular organization due to the poor management of ABC project.

However, the implementation rate of ABC demonstrated diversified results across different countries. For instance, Innes and Mitchell (1990) documented that only 6% of the surveyed UK manufacturers and financial service firms adopted ABC, 33% were considering adoption,

9% had rejected, and the remaining 52% had not considered the adoption of ABC. Drury and Tayles (1994) also reported a low (4%) implementation rate, whereas Innes and Mitchell (1995) reported, just one year later, an improvement in the adoption rate (21) in the UK. Surprisingly, Innes et al. (2000) again reported decline in the implementation rate (17.5%) in UK.

The picture of ABC adoption is also fluctuating in the USA. For instance, National Association of Accountants (1991) revealed that 11% of the surveyed firms had implemented ABC, whereas Institute of Management Accountants (1993), just two years later, reported 36% implementation rate (Gosselin, 2006). Analogous to the picture of UK, the implementation rate of ABC also declined (from 36% to 17%) in the USA as reported by Groot (1999). Surprisingly, the rate has uplifted to as high as 51.8% (11.8% had established ABC well and 40% started implementation process) just after four years later as reported by Kianni and Sengeladji (2003).

The other part of the developed economy also demonstrated mixed results with respect to the implementation rate of ABC. For example, Armitage and Nicholson (1993) reported that 14% of the surveyed Canadian firms were using ABC, while Gosselin (1997) reported a 30.4% and Bescos et al. (2002) reported a 23.1% implementation rate in Canada.

In Finland, Lukka and Granlund (1996) noted that only 5% of the surveyed manufacturing firms have implemented ABC, while Bjornenak (1997) documented 40% of the respondent have adopted ABC in Norway. The implementation rate of ABC in other developed countries were: 23% in France (Bescos et al., 2002), 20.30% (Cotton et al., 2003) and 22.54% (Askarany et al., 2010) in New Zealand, 27.9% in Ireland (Brown and Pierce, 2004), and 40.9% in Greece (Cohen et al., 2005). In China, the rate of ABC usage is even lower, only 2% and 1% in partner firms and state-owned-enterprise (SOE) respectively (Firth, 1996).

With respect to the factors affecting the adoption decision, prior literature identified a wide range of factors that affect the adoption of ABC in firms. Among the contingent factors, production process (Ittner et al., 2002), product diversity (Bjornenak, 1997), organizational structure (Gosselin, 1997), size of the firm (Innes and Mitchell, 1995; Bjornenak, 1997; Gosselin, 1997; Innes et al., 2000; Brown and Pierce, 2004), competition (Innes and Mitchell, 1995; Bjornenak, 1997; Malmi, 1999), strategy (Gosselin, 1997; Baines and Langfield-Smith, 2003; Bhimani et al., 2005), environmental uncertainty (Innes and Mitchell, 1995; Gosselin, 1997; Chenhall and Langfield-Smith, 1998), and stages of life cycle (firms in maturity and revival phases) (Kallunki and Silvola, 2008) are reported as the most influential. Small firms with adequate financial resources and firms facing declining growth also implemented ABC and gained subsequent growth and profitability (Jankala and Silvola, 2012).

With respect to the impact of ABC implementation on several facets of performance, majority of the prior studies documented a positive effect. For example, Al-Khadash and Feridun (2006) reported that firms adopting ABC have experienced favorable effect on accounting-based performance, while Arena and Azzone (2005) noted a favorable effect on market-based performance, better cost controls, asset utilization and better use of financial leverage. The use of ABC also assists in developing and implementing business strategy (Shields, 1995; Gosselin, 1997; Baines and Langfield-Smith, 2003). Some other studies documented that ABC also provides several positive benefits to firm, such as cost reduction, make or buy decisions, and budgeting (Gosselin, 1997).

Another SMA technique that has received vast attention is the balanced scorecard (BSC). Kaplan (2009) stated that thousands of private, public and not for profit companies have adopted BSC in their organizations. Despite this immense interest on BSC, there exists limited research-based evidence on BSC application (Ittner and Larcker, 1998; Malmi, 2001; De Geuser et al., 2009). De Geuser et al. (2009) also commented that no ready-to-use



database on BSC adopters exist in the literature. Silk (1998) documented that about 60% of the fortune 1000 firms in USA have experimented BSC. Debusk and Crabtree (2006) reported 23% of the surveyed firms (manufacturing as well as service) in USA were regular users of BSC, whereas Crabtree and Debusk (2008) reported 34.76% of the surveyed companies implemented BSC.

Speckbacher et al. (2003) reported that 26% (17% at business unit level and 9% for the entire company) of the surveyed firms in Austria, Switzerland and Germany have implemented BSC in their organizations, and BSC project has existed in another 7% of the firms. Chan and Chan (2004) documented limited use (7.5% only) of BSC in the municipal governments of USA and Canada. Pere (1999) reports 31% (particularly large companies and their business units) of the surveyed companies have implemented BSC in Finland. Assiri et al., (2006) surveyed 240 companies from 25 countries across the globe including Europe, Asia, Middle East, Africa, USA, and Australia. The study documented that 60.2% companies were involved in BSC implementation, 51.5% implemented from 1 to 3 years, 23.3% for less than 1 year, 22.3% from 4 to 6 years. Majority of the adopters (36.9%) were from manufacturing sectors, while 14.6 % were from financial and energy sectors and the lowest from (2.9%) telecommunication, distribution and healthcare sectors. Blundell et al. (2003) surveyed top 40 companies of New Zealand stock exchange and reported that 61% use BSC at organizational level, while 65% use at the divisional level. In Sweden, Kraus and Lind (2010) noted that 53% of the largest multinational companies use corporate BSC. Ax and Greve (2017) reported that 59.4% (98 of 165) Swedish manufacturing firms have adopted BSC in their organizations. Hoque and Adams (2011) surveyed 51 Australian government departments and reported that the overall mean of BSC implementation is not high (mean score 3.02 in the scale of 5) as expected. Furthermore, the findings reported a higher usage of BSC in the areas of output measures (mean score 3.57) and process efficiency measures (3.26) as compared to

employee learning and growth (2.20) and input measures (2.89). The surveyed government departments used BSC for external compliance (required by government mandates), internal management purpose and to satisfy legislative requirements. Moreover, the participants perceived the use of BSC as a way to enhance program efficiency and effectiveness. Gao and Gurd (2015) surveyed 113 hospitals in China and reported that 93% had heard about BSC, while only 7.1% had implemented it in their organizations. Malagueno et al. (2018) examined the level of adoption of BSC in 201 SMEs in Spain and found 34.83% of the surveyed firms used the technique in their firms.

Prior literatures also identified a number of factors influencing the adoption of BSC in organizations. For example, Hoque and James (2000) identified that firm size and product life-cycle stages affect the use of BSC. Malmi (2001) reported a significant influence of consultant's recommendation on the usage of BSC in the Finnish companies. Hendricks et al. (2012) documented that firm's size, type of business strategy followed, environmental uncertainty, and past performance affect the decision to adopt BSC. Ax and Greve (2017) documented that firm's value and beliefs have significant effect on the adoption decision of BSC in Swedish manufacturing firms. Sainaghi et al. (2019) incorporated a fifth perspective 'the destination context' to the historical four perspectives of BSC and reported 'learning and growth' as the most significant perspective in the surveyed firm for new product development.

Several prior studies also examined the effect of BSC application on various aspects of firm performance. Hoque and James (2000) documented that the use of BSC is positively associated with firm performance in Australia. Debusk and Crabtree (2006) reported that 88% of the users of BSC have experienced improvement in operating performance and 66% experienced improvement in profit in USA. Sim and Koh (2001) demonstrated that manufacturing plants (USA) linking corporate goals to performance measurement systems

via BSC performed better than non-adopter of BSC. Davis and Albright (2004) provided evidence that branches of companies implementing BSC have experienced superior financial performance. Moreover, firms using BSC also experienced better measurement system satisfaction (Ittner et al., 2002) and improved stock market returns (Ittner et al., 2002; Crabtree and Debusk, 2008). However, merely the adoption of BSC might not be able to influence firm performance; rather the way in which BSC is used could be matter. More specifically, when BSC usage is complemented to corporate strategy, firms experience favorable effect on performance (Braam and Nijssen, 2004). Decoene and Bruggeman (2006) also supported such findings by reporting that the BSC-based compensation plan combined with strategic alignment has a positive effect on the extrinsic motivation of manufacturing executives. De Geuser et al. (2009) demonstrated that BSC has a positive effect on organizational performance; specifically, the application of BSC improves the integration of management processes and empowers people. Some other studies also reported link between BSC and strategy (Kaplan and Norton 1996, 2001), its effectiveness in strategy communication (Chenhall, 2005) and implementation (Amaratunga et al., 2001; Atkinson, 2006), its use in achieving competitive advantage and in cost reduction, make or buy decisions, and budgeting (Gosselin, 1997). However, Llach et al. (2017) demonstrated that inappropriate behavior of the internal process or customer satisfaction could harm the financial results, and therefore, a balance between the four perspectives is required to attain a better performance. Despite these favorable effects of BSC on several aspects of firm performance and strategy, a great deal of empirical evidence is not available on ‘how’ and ‘how much’ BSC contributes to organizational performance (Burkert et al., 2010).

Target costing (TC) is another widely studied SMA technique that has gained vast attention of academics and practitioners. Majority of the empirical researches have been conducted in Japanese firms (Kato, 1993; Cooper and Yoshikawa, 1994; Tani et al., 1994; Wijewardena

and De Zoysa, 1999). It became popular among European and American only in the 1990s (Kato, 1993; Yazdifar and Askarany, 2012). However, prior studies documented higher usage rate of this technique by Japanese firms (Kato, 1993; Tani et al., 1994; Wijewardena and De Zoysa, 1999) as compared to non-Japanese firms (Chenhall and Langfield-Smith, 1998; Guilding et al., 2000). For example, Kato (1993) reported 80% of the Japanese assembly companies use TC, while Tani et al. (1994) found 60.6% usage rate by Japanese manufacturers listed in the Tokyo stock exchange. Dekker and Smidt (2003) surveyed 32 Dutch firms listed in the Amsterdam stock exchange and reported that 59.38% (19 of 32) firms were using TC. Majority of the non-adopters (61.54% or 8 of 13) cited that TC is not adopted due to the nature of company. Rattray et al. (2007) reported a 38.71% adoption rate of TC by manufacturers in New Zealand. Ax et al. (2008) surveyed Swedish manufacturing engineering firms and documented that only 25% (14 of 57) of the firms have adopted TC. Yazdifar and Askarany (2012) conducted a comparative study in UK, Australia and New Zealand. The implementation rates found by the study were 17.9% in Australia, 18.3% in New Zealand, and 16.7% in UK. Surprisingly, the implementation rate was greater in service firms (18.4%) as compared to manufacturing firms (16.5%).

Among several contingent factors influencing the adoption of TC include: intensity of competition (Cooper and Slagmulder, 1997; Dekker and Smidt, 2003; Ax et al., 2008), number of competitors, unpredictability of the environment, importance of cost focus (Dekker and Smidt, 2003), top management supports and organizational capability (Huh et al., 2008).

Dekker and Smidt (2003) and Rattray et al. (2007) documented several benefits derived from the application of TC including cost reduction, timely product introduction, customer satisfaction, and quality control. However, Cooper and Slagmulder (1997) identified five factors that determine the magnitude of benefits firms can derive from the application of TC:

intensity of competition, nature of customer, product strategy, characteristics of the product, and supplier-base strategy.

However, the extant literature on the usage of other SMA techniques (e.g., life cycle costing, attribute costing) is very limited. With respect to the usage of life cycle costing (LCC), Olubodun et al. (2010) surveyed 100 construction firms in UK (46 usable responses were received) and reported that more than half of the surveyed firms have adopted LCC (19% use very frequently and 32% quite frequently). However, they reported that there exists lack of understanding of LCC technique among construction professionals and the absence of standardized methodology impeded its wider implementation. Dunk (2004) noted several factors affecting the extent to which LCC is used in organizations including customer profiling, competitive advantage, and quality of information system information. Knauer and Moslang (2018) surveyed 120 German firms to analyze the conditions of LCC adoption and its impact on the achievement of cost-management goals. The findings exposed that occurrence of important costs (such as guarantee and warranty costs) after a product market phase affect the adoption of LCC significantly. Additionally, LCC adoption is also affected positively by the adoption of target costing and therefore complementary each other. They further showed a significant and positive effect of LCC adoption on the identification of cost drivers, improvement of decision-relevant information, and the improvement of cost transparency. Iotti and Bonazzi (2014) documented the usefulness of LCC approach in analyzing convenience-cycle management of companies with high capital intensity and long pay-back period, specifically to trim down production cost in the long run by quantifying whole life cost.

Quality costing (QC) has also attracted the attention of several researchers to some extent. Porter and Rayner (1992, p. 80) stated QC as an essential tool in any total quality management (TQM) program. Bamford and Land (2006) stated that QC can be used as a

management tool only if the data available are both accurate and valid. Kumar et al. (1998) summarized the findings of empirical studies conducted in several countries across the world. They reported that about 50% of the surveyed textile industry (UK) reported quality costs and only 27% of these firms expressed quality costs as a percentage of sales turnover (Allen and Oakland, 1991), Lascelles and Dale (1990) noted that 42% of automotive industry (UK) measured quality costs, and Sohal et al. (1990) documented even greater usage (63%) of QC in UK in another large-scale survey. In US, Chen (1992) reported that 38% of the surveyed firms employed QC of which 67% used sales as the measurement basis. In Australia, Sohal et al. (1992) documented that 42% of the respondents used QC system. Blauw and During (1990) noted that 13 out of 100 firms in Germany has implemented QC without break-up of details into prevention, appraisal or failure costs. In Japan, Kano (1986) documented a very limited use (only 13 of 680 firms) of QC system due to the inefficiency of accounting information system. Chatzipetrou and Moschidis (2016) surveyed 159 Greek supermarkets and demonstrated a limited use of QC practices among supermarkets. The study also confirmed the effect of size, economic circumstances, and ISO certification on the ways companies monitor quality costs. Dale and Wan (2002) documented that the success of QC system depends on the company culture and discipline of staff in complying with the agreed procedures. Moreover, the chosen QC method must: match with the company's situation, be based on the concept of continues improvement, employ a team approach, and be applicable to all departments (Dale and Wan, 2002). Schiffauerova and Thomson (2006) reviewed the literature on cost of quality model and best practices and reported that companies implementing QC system have experienced reduction in cost of quality and improvement in quality for customers. The study also documented the supremacy of classical Prevention-Appraisal-Failure (P-A-F) model with few exceptions.

Several prior studies (e.g., Gupta and Lehman, 2003; Gupta et al., 2004; Kim et al., 2006; Mulhern, 1999; Pfeifer et al., 2005) have focused on demonstrating models of how to measure customer value or customer lifetime value and customer profitability analysis. However, the empirical studies on customer accounting are almost scarce. Stahl et al. (2003) demonstrated how customer lifetime value improves shareholder value through increasing cash flows, accelerating cash flows, reducing cash flows volatility and vulnerability, and increasing the residual value of the firm.

Empirical studies on adoption, benefits, contingencies and effects of other SMA techniques are even scarcer. Prajogo et al. (2008) documented diversified relationship of different value chain activities on different types of competitive performance, specifically on product quality and innovation. Marketing, production and procurement functions are significantly associated with product quality, while quality and innovations are also positively and significantly associated with each other. Zokaei and Simons (2006) reported the effect of managing value chain activities on supply chain and documented that the effectiveness of value chain determines the ultimate efficiency of supply chain.

The foregoing review of literature persuaded to conclude that the findings of empirical studies focusing on a particular SMA technique reveal diversified results. Among the SMA techniques, ABC and BSC have received greater attentions of academics and practitioners, while target costing, QC and LCC have received moderate attention. The rate of adoption of ABC and BSC demonstrated fluctuating trend within and across countries. Target costing, though used extensively in Japanese firms, failed to attract firms in other parts of the globe. Several contingent factors affect the adoption of various SMA techniques including production process, product diversity, organizational culture, size of the firm, environmental uncertainty, strategy adopted, stages of product life cycle, prior performance, and intensity of competition. The impact of the use of these SMA techniques are also not uniform and mostly

context specific. However, positive effect of such adoption on firm's strategic management and performance are well evidenced. Unfortunately, the remaining SMA techniques (e.g., benchmarking, value chain costing, strategic pricing) failed to receive the attention of researchers, and therefore, empirical studies on them are almost rare.

Thus, it is obvious from the prior literatures that there is still a lack in the empirical based SMA literatures. Even in the developed economy, very few studies attempted to focus on SMA practices as an umbrella term that comprises a number of techniques in a single study. Furthermore, very few studies attempted to identify factors influencing the adoption of SMA techniques and the effect of such adoption on firm performance.

### **3.3 Studies conducted in the context of developing economy**

The context of a developing economy or less developed economy differs from the context of a developed economy from a number of grounds including cultural and political factors that affect our understanding of MAPs (Hopper, 2000). Several prior researches (e.g., Hopper, 2000; Luther and Longden, 2001; Haldma and Laats, 2002; Hooper et al., 2004; Leftesi, 2008) also recognized the fact that MAPs are not universally uniform, and a very little is known about the current state of such practices in the context of less developed economy (Joshi, 2001; Lin and Yu, 2002; Van Triest and Elshahat, 2007). Considering the importance of these differences in the context of developing and developed economies, a separate section focusing on review of the literature of SMA techniques in the context of developing economy is presented below.

#### **3.3.1 Studies focusing on both traditional and SMA techniques**

Majority of the studies conducted in the context of developing economies have focused on traditional MAPs and included very few SMA techniques in a single study. Reviewing the



literature of MAPs, Sulaiman *et al.* (2004) reported lacking in the usage of contemporary management accounting tools in the four Asian countries: Singapore, Malaysia, China and India. Joshi (2001) surveyed 60 large and medium manufacturing firms in India in respect of the adoption and benefits of 45 MAPs. Most of the MAPs were traditional except few SMA techniques (BSC, benchmarking, target costing, life cycle costing and ABC). Similar to the pictures of most of the developed economies, the study also confirmed significantly greater usage of traditional MAPs (e.g., several dimensions of budgeting and performance measurement based on financial results, capital budgeting techniques and product costing are ranked as high adopter). Only performance evaluation based on customer satisfaction survey was attached with moderate adoption and the remaining three SMA techniques (ABC, BSC, benchmarking, product life cycle and target costing) were assigned with low adoption category. More specifically, 80% of the companies used customer satisfaction survey and 53% of the companies adopted non-financial measures to evaluate performance, 40% adopted BSC, 35% used target costing and 20% used ABC. Surprisingly, target costing and ABC were considered in the 'high benefits' and 'high emphasis' group by the surveyed firms. In terms of benefits, target costing was ranked 4 (out of 45 MAPs) and ABC was ranked 14. More surprisingly, target costing was ranked number 1 in terms of 'future emphasis' and ABC and BSC were ranked number 17 and 19 respectively out of 45 MAPs. These results suggested greater usage of these SMA techniques in the near future.

Parallel to India, MAPs in Singapore and Malaysia also demonstrated significantly greater usage of traditional MAPs as compared to contemporary SMA techniques. For instance, Abdul Rahman *et al.* (1998) reported that 98% of 48 manufacturing companies used budgets whereas only 4% used ABC in Malaysia. Sulaiman *et al.* (2002) also reported similar results that 98% of 61 companies used budget, while only 28% used ABC and 13% used BSC in Malaysia. Ahmad (2014) also documented greater usage of traditional MAPs as compared to

contemporary SMA techniques in 50 small and 110 medium (total 160 SME) enterprises in Malaysia. Costing system, budgeting system and performance evaluation system were ranked first, second, and third respectively, whereas SMA practices (e.g., value chain analysis, strategic costing, ABC) were ranked at the bottom line of the list of adoption. However, Tho et al. (1998) reported rather different results which showed that 41% of the 214 companies have adopted target costing in Malaysia. In a further study, Zainun Tuanmat and Smith (2011) reported very significant changes in MAPs from 2003 to 2007, particularly changes in respects of contemporary SMA techniques. A number of new practices (majority of them are SMA techniques) have been introduced; old practices have been modified and/ or replaced by new practices. Though some of the traditional MAPs were still remained at the top of list of change (budgetary control 9.10 in the scale of 11, standard costing 8.64, absorption costing 8.62, variable costing 8.47, CVP analysis 8.40), a number of SMA techniques (e.g., customer profitability analysis 8.70, benchmarking 8.52, value chain analysis 7.96, target costing 8.19, ABC 7.62) have also been changed during the period and used in parallel with traditional MAPs.

In Singapore, Ghosh and Chan (1997) also documented a higher usage rate for traditional MAPs. They reported that 97% of 109 companies used budgets, whereas only 13% have adopted ABC.

Albu and Albu (2012) also documented the grater usage of traditional MAPs like performance evaluation based on financial performance, budgets, full costing as compared to contemporary SMA tools in Romania.

Joshi et al. (2011) surveyed and examined the diffusion of MAPs in six Gulf Cooperation Council (GCC) countries (Bahrain, Qatar, Oman, Kuwait, Saudi Arabia and United Arab Emirates). The findings showed a low adoption of MAPs in the area of cost management and strategy (e.g., target costing 6.3%, strategic costing 10%, life cycle costing 13.7%, quality

costing 21.6%), whereas moderate usage rate of MAPs in the area of performance measurement (e.g., BSC 30.8%) with the exception of ABC (38.9% ) and ABM ( 40.7% ).

Some studies also examined the contingent factors affecting the adoption of MAPs in developing countries. Isa and Foong (2005) reported that the adoption of advanced manufacturing technology affects the adoption of contemporary MAPs such as ABC in Malaysia (88% of ABC adopters were also the adopter of advanced manufacturing technology). Power and politics also affect the adoption and diffusion of MAPs in some countries (e.g., Bahrain, Qatar, Oman, Kuwait, Saudi Arabia and United Arab Emirates) (Joshi et al., 2011). Albu and Albu (2012) documented the type of capital and firm size as the most influential factors in deciding the adoption of MAPs in Romanian companies.

The effect of adoption of MAPs on several aspects of firm performance has also been examined to a limited extent in the context of developing countries. Tuanmat and Smith (2011) reported a positive relationship between changes in MAPs and firm performance in Malaysia.

### **3.3.2 Studies focusing exclusively on SMA techniques**

The magnitude of studies focusing exclusively on the usage, benefits, contingent variables and the effect of usage on performance is almost rare in developing countries. Very few studies (AlMaryani and Sadik, 2012; Oboh and Ajibolade, 2017; Amanollah Nejad Kalkhouran et al., 2017) have concentrated on SMA techniques as a package term and to a very limited extent in terms of both sample size and contents (Rashid et al., 2021). Moreover, no studies have focused on a specific group of techniques in the developing economy context. In contrast, the number of studies (e.g., Chongruksut, 2002; Anand et al., 2005; Abdul Majid and Sulaiman, 2008; Sartorius et al., 2007; Hasan and Akter, 2010; Al-Sawalqa, 2011; Huang et al., 2012;) that focused on a single SMA technique such as ABC or BSC is considerable.

However, the adoption, benefits and impacts of other SMA techniques such as target costing, benchmarking, strategic costing, value chain costing, competitor accounting, customer accounting remains almost unexplored in the context of developing economy.

### **3.3.2.1 Studies focusing on SMA techniques as a package**

Studies focusing on the usage and benefits of a package of SMA tools are not available in the context of developing economy. Some studies concentrated on identifying factors influencing the usage of SMA techniques. For example, Amanollah Nejad Kalkhouran et al. (2017) studied 1000 Malaysian SMEs (final sample was 121) to investigate the effect of the characteristics of chief executive officer (CEO) and their extent of involvement in networks on usage rate, and the indirect impact of usage on performance. They considered a total of 18 SMA techniques of which 16 are based on Cadez and Guilding (2008) and added value stream costing suggested by Fullerton et al. (2013) (without detailing the fundamentals of the technique and why this technique should be considered in the list of SMA techniques) and customer segment profitability based on Guilding and McManus (2002). They reported a significant and positive impact of the level of CEO education and the extent of their involvement in networks on SMA usage. They further reported a mediating effect of the usage rate on performance via the level of education and network involvement. However, the study reported neither the magnitude of usage of individual SMA technique nor the benefits of using any individual or group of techniques.

Oboh and Ajibolade (2017) investigated the impact of SMA usage on strategic decision making in 20 registered Nigerian banks (71 managers at tactical level were surveyed) without outlining the name of SMA techniques considered. The study reported that SMA was practiced as a principle of operation and not as a concept. 81.7% of the managers responded that they practiced SMA technique in their banks without mentioning what constitute SMA

techniques or what SMA techniques they actually practiced. SMA adoption was also found to significantly contribute to strategic decision making particularly in the area of competitive advantage and enhanced market share.

Consequently, the extant literatures on SMA practices as an umbrella in the developing economy setting failed to portray the pictures of adoption, benefits, contingent factors and the effect of SMA adoption on various aspects of firm performance (Rashid et al., 2020). To an extremely limited level, the effects of usage on strategic decision making and contingent factors to the usage of SMA techniques have been addressed.

### **3.3.2.2 Studies focusing on a particular group of SMA techniques**

Surprisingly, studies focusing on a specific group of techniques have not been addressed, to the best of the researcher's knowledge, in the context of developing and emerging economies (e.g., competitor or customer focused SMA techniques).

### **3.3.2.3 Studies focusing on a single SMA technique**

Several studies have examined the application of a specific SMA technique in the context of developing economy, though the volume is not significantly large and only few techniques (e.g., ABC, BSC) have been studied mostly, while overlooked the majority of 17 SMA techniques considered in the present study. In terms of usage rate, most of the studies reported a low adoption rate with few exceptions. Sartorius et al. (2007) noted a very low adoption rate of ABC in South African companies (only 12% of 181 companies). Difficulty of accumulating data required for ABC, excessive cost of information technology, lack of skills required, difficulties in defining cost pools and drivers, and misconceptions about ABC (specifically ABC suited to only manufacturing firms) are reported as the leading causes of non-adoption in South African companies. Abdul Majid and Sulaiman (2008) also

documented a low usage rate of ABC in Malaysian companies. Chongruksut (2002) reported similar results in Thailand which documented that only 11.88% (12 of 101) of the listed companies have adopted ABC due to the changed environment. However, another 22.77% companies expressed their intention to adopt ABC in future. The reasons for non-adoption noted by the study were higher priorities of other projects, difficulties in technical aspects and lack of internal sources.

Prior studies also documented that the adoption and usage of ABC influence the decisions of discontinuance of products and customers and price changes (Narayanan and Sarkar, 1999), and assists in a number of managerial decisions such as budgeting, customer profitability analysis and product pricing (Anand et al., 2005). In addition, the adoption of ABC leads to reduction of cost and improvement of process, which in turn improves performance (Majid and Sulaiman, 2008).

Anand et al. (2005) documented a relatively higher usage of BSC in the Indian companies (45.28%) with utmost emphasis on financial aspect. Al Sawalqa et al. (2011) documented that only 35.1% of the surveyed firms used BSC in Jordanian companies. Huang et al. (2012) showed a positive association between TC application and business model innovation and firm's performance.

In summary, the extant literatures failed to highlight the scenario of adoption, benefits and effect of majority of the specific SMA techniques in the context of developing country. More significantly, majority of the SMA techniques (e.g., benchmarking, value chain costing, strategic costing, competitor accounting, customer accounting) remain unexplored in terms of their application in the context of developing economy.

### **3.4 Bangladesh as the research context**

Several studies have been conducted on the adoption of MAPs in the context of Bangladesh. Majority of these studies (Sharkar et al., 2006; Shil et al., 2010; Yeshmin and Fowzia, 2010; Khan et al., 2011; Yeshmin and Hossan, 2011; Yeshmin, 2015; Shil et al., 2015; Nisha, 2017; Musharof et al., 2020) focused on the combination of traditional MAPs and SMA tools in a single study. The findings of these studies are also consistent with the adoption rates of other developing countries. Traditional MAPs are highly adopted as compared to contemporary SMA techniques. For instance, Sharkar et al. (2006) surveyed 50 listed manufacturing companies in Bangladesh and documented the domination of traditional MAPs over SMA tools. Most of the companies did not adopt more sophisticated management accounting tools like ABC, target costing, and life cycle costing. Other studies such as Shil et al. (2010), Yeshmin and Fowzia (2010), and Shil (2017) also reported a lower usage of SMA techniques in Bangladesh. For example, Shil et al. (2010) surveyed 35 manufacturing companies doing business in Bangladesh and reported that 80% of the surveyed companies use standard costing, 63% use budgeting, whereas 66% use target costing, and 55% use ABC. Yeshmin and Fowzia (2010) reported that traditional tools such as financial statements analysis, CVP analysis, variance analysis, budgetary control and fund flow analysis are very common to all of the 151 manufacturing and service organizations. However, analogous to other studies, the study reported a lower usage rate of modern management accounting tools like ABC and BSC, and that the usage rates of manufacturing undertakings are greater than that of service organizations. Shil (2017) also showed a higher usage rate of traditional MAPs such as cash flow analysis, budgetary control, variable costing, and standard costing, whereas the usage rate of modern and advanced techniques such as lean manufacturing, ABC, target costing, BSC was comparatively low. However, Shil et al. (2015) reported a bit different scenario about the future of SMA techniques in Bangladesh. The study documented the diffusion of

management accounting techniques from 2007 to 2011 and found that several techniques (e.g., BSC, target costing) that were not used in 2007 are being used in 2011.

Akin to other developing countries, no prior study has focused on a particular group of SMA techniques such as customer-focused or competitor-based SMA techniques in Bangladesh. Very few studies (Hasan and Akter, 2010; Khan et al., 2010; Akter et al., 2016) have focused on a particular SMA technique. Hasan and Akter (2010) reported a very low adoption rate of ABC (10%) in the sample companies. The sample contained 40 manufacturing companies operating in Bangladesh. Khan et al. (2011) also found identical results in a later survey conducted among 60 public limited companies. Financial measures were mostly used by all companies. Surprisingly, 78.4 percent of the companies use some non-financial measures. In contrast, Akter et al. (2016) demonstrated a promising usage of non-financial measures of performance measurement in the banking sector of Bangladesh. They surveyed 179 managers and senior executives and reported that both financial and non-financial measures significantly affect banking performance which further leads to sustainable success and growth in the long-run.

The summary of studies conducted in the context of Bangladesh demonstrated scarcity and insufficiency of studies on SMA techniques. Few studies have been conducted majority of which focused on both traditional MAPs and contemporary SMA techniques in a single study. Moreover, most of the techniques considered were traditional MAPs and only a few SMA practices were included in the list. The findings revealed the dominance of traditional MAPs as compared to SMA techniques. No studies were conducted that focused exclusively on a particular group of SMA techniques or SMA techniques as an umbrella term that have focused on usage rate, benefits, contingent factors or the effect of usage on performance.



### 3.5 Theories considered in prior studies (SMA as a package)

As can be seen in the following Table (and also in Appendix 1 and 2), contingency theory was the mostly employed theory the field of SMA research. Among other theories, upper echelons theory, role theory and Configurational theory have also attracted the attention of few researchers. A detailed discussion of these theories is provided in the next chapter.

Table 3.2: Theories employed in SMA research (as a package)

Theory	Explanation	Studies
Contingency theory	Organizational performance depends on the proper match between organizational context (both internal and external) and structure (MAPs). A conditional relationship of two or more independent variables with a dependent variable is hypothesized in this theory; performance is mostly considered as the dependent variable. Management accounting systems are adopted and developed by firms to meet information requirements in achieving organizational objectives. However, contingency theory has been criticized from several grounds including its focus on unifinality, competition and causation instead of equifinality, combination and reciprocity (Cadez and Guilding, 2012).	Haldma and Laats, 2002; Abdel Kader and Luther, 2008; Cadez and Guilding, 2008; Cinquini and Tenucci, 2007, 2010; Nuhu et al., 2017; Oboh et al., 2017; Turner et al., 2017; Hadid and Al-Sayed, 2021.
Configurational theory	This theory incorporates the concepts equifinality, combination and reciprocity and views an organization as clusters of interconnected structure and practices (Ferguson and Ketchen, 1999; Short et al., 2008; Cadez and Guilding, 2012). The internal consistency amongst the patterns of relevant contextual, structural, and strategic factors effectiveness of determines the effectiveness of the organization (Doty et al., 1993; Ketchen, et al., 1993; Cadez and Guilding, 2012).	Caedz and Guilding, 2012.
Upper echelons theory	The experiences, values, and personalities of top executives affect the explanations of their environment they face which, in turn, affect their choices of particular practices such as particular or package of MAPs in dealing with such situations favorably (Hambrick and Mason, 1984; Hambrick, 2007). Other top management team characteristics such as educational background and tenure affect the adoption and	Amanollah Nejad Kalkhouran et al., 2017; Pavlatos and Kostakis, 2018

	implementation of SMA tools (Pavlatos and Kostakis, 2018).	
Role theory	Creativity of manager, represented by the ability to handle challenges and problems by discovering innovations, new ideas, new concepts and actions which influence the performance of firm favorably (Bryant et al., 2011; Pavlatos and Kostakis, 2018) affect the adoptions of innovative management tools (Bisbe and Otely, 2004; Brown and Anthony, 2011) and SMA tools (Pavlatos and Kostakis, 2018).	Pavlatos and Kostakis, 2018

### 3.6 Limitations of previous studies and research gaps

The review of literature presented above demonstrates several gaps in the existing SMA literatures. These gaps are presented here:

Firstly, the volume of empirical studies focusing solely on the usage of SMA is low as compared to traditional MAPs in both the developed and developing economies, and almost scarce in the context of developing economy. Several researchers (Chenhall, 2003; Cadez and Guilding, 2008; Hadid and Al-Sayed, 2021) call for more empirical researches on contemporary MAPs (SMA) to learn about the extent of theory-practice gap.

Secondly, as the contexts of developing economy is different from that of developed economy in respect of a number of factors, and as prior studies documented that MAPs are not uniform across the economies, an investigation into the nature of SMA practices in the context of a developing economy like Bangladesh is expected to fill up such gap. Moreover, this kind of research has not yet been conducted in the context of Bangladesh.

Thirdly, very few studies have focused on the identification of contingent factors in the usage decision in the context of developed economy. Almost no studies have focused on this issue in developing countries. Furthermore, several researchers (Chenhall, 2003; Cadez and Guilding, 2008; Hadid and Al-Sayed, 2021) call for more researches to include various contingent factors (e.g., intensity of competition, environmental uncertainty, technology,

organizational structure, culture, and institutional pressures) that remained unexplored in this field of research.

Fourthly, studies focusing on the analysis of the impact of SMA usage on several aspects of firm performance are also very limited, and almost scarce in the developing economy. The effect of SMA practices on market-based firm performance remains unexplored even in the context of developed economy.

Finally, theoretical and methodological triangulation rarely exists in the extant SMA literature. This study employs ‘contingency theory’ in the first stage of the research in analyzing ‘quantitative data’ collected through questionnaire survey. This is followed by the analysis of ‘interview’ data employing ‘institutional theory’ in the final stage of the research. This can be interesting for the future researchers in this field in the way that triangulation of theories and methodologies can provide a better picture in understanding what affects the usage of MAPs in one hand, and why and how such changes take on the other hand.

### **3.7 Chapter summary**

This chapter basically reviewed the studies that have focused on adoption, benefits, future emphasis, influencing factors and the effect of adoption of SMA techniques on various aspect of firm performance. For the ease of presentation and analysis, prior studies have been divided into two broad categories: (1) studies conducted in the setting of developed economy and (2) studies conducted in the developing economy. Studies that considered both traditional and SMA practices in a single study demonstrated comparatively greater usage of traditional MAPs in both developed and developing economies as compared to advanced SMA techniques with few exceptions. Studies that have focused exclusively on SMA techniques exhibited diversified results across different countries and industry. Among the SMA techniques, ABC, BSC, target costing, competitor accounting, and customer accounting are

mostly adopted and popular in different countries of the globe. However, there exists scarcity of studies that focused exclusively on SMA usage as an umbrella or a specific group of SMA techniques in both the developed and developing economies, and more severely in the context of developing economy. Several prior studies call for more researches to learn about the theory- practice gap in the field of SMA practices, specifically the adoption status, nature and form of adoption, perceived benefits of adoption, factors contingent to adoption, and more importantly the effect of adoption on several aspects of firm performance.

In the next chapter, a detailed discussion on the theoretical framework used in the thesis is presented. Starting with the discussion on theories commonly used in management accounting research, the next chapter eventually focuses on the contingency theory in identifying the contingencies that can have an impact on the decision to adopt SMA practices. This is followed by a detailed discussion on institutional theory and ends with the benefits of theoretical triangulation in understanding MAPs.

## **CHAPTER FOUR**

### **THEORETICAL FRAMEWORK**

#### **4.1 Introduction**

This chapter presents the theoretical framework that was adopted in explaining the SMA practices of Bangladeshi companies. Contingency theory is applied in explaining the findings of questionnaire survey data. Additionally, this study applied New Institutional Sociology (NIS) in explaining interview data.

#### **4.2 Theories in Management accounting**

Despite the existence of different perceptions among the accounting academics about what is to be regarded as theory (Malmi and Granlund, 2009), the use of a particular theoretical underpinning is critical to inform, explain and predict accounting practices (Zimmerman, 2001). Wanderley and Cullen (2012) viewed MAC research as eclectic and diverse. MAC research was dominated by economics (Hopper et al., 2004) in the period of 1930-1970, particularly neo-classical economic theory (Scapens, 2006), and almost all techniques of management accounting have been developed around the economic theory (Scapens and Arnold, 1986). The assumptions of both the theories were questioned by management accounting academics (Ryan et al., 2002) and such theories do not assist to realize why and how management accounting techniques to be used (Burns and Scapens, 2000). Consequently, some other theories emerged in this field that helped explain management accounting practices. The extant literature of management accounting documents the use of a number of theories including actor-network theory, structuration theory, contingency theory, institutional theory (Malmi and Granlund, 2009).

Agency theory stems from information economics research which examines an organization representing a situation where one or more persons (owners) appoint another person (agent) to carry out some service on their behalf (Tiessen and Waterhouse, 1983). Lambert (2007, p.247) noted that: *“at the most fundamental level, agency theory is used in accounting research to address two questions: (i) how do features of information, accounting, and compensation systems affect (reduce or make worse) incentive problems, and (ii) how does the existence of incentive problems affect the design and structure of information, accounting, and compensation systems?”*

In management accounting research, multiagent models are used to study the role of incentive problems in allocating resources (and costs) among agents, and to analyze transfer pricing between subunits (Lambert, 2007).

Actor-network theory (ANT) asserts that the technical characteristics of an innovation are not adequate to clarify the success or failure of its diffusion (Latour, 1987); rather it depends on the dynamic and interactions of actor-networks (Alcouffe et al., 2008). More specifically, the arguments network members decide to use have much bearing on the successful diffusion of innovation by creating an interest for the other network members (Alcouffe et al., 2008). This process of diffusion of innovation is known as “translation” (Latour, 1987) which analyzes this innovation within the context (a constituent element of innovation) in which the innovation evolves (Alcouffe et al., 2008). Baxter and Chua (2003) have provided an extensive discussion on the contribution of ANT to management accounting research. Alcouffe et al. (2008) suggested that ANT has been used in MA research to address two issues: (1) the roles played by accounting innovations within the organizations and society once they are assigned with the status of black boxes, (2) the ways MA innovations are produced, modified and accepted (Chua, 1995; Quattrone and Hopper, 2005).

ANT also asserts that everything in the social and natural worlds does not exist separately; rather they are constantly generated by the relationships between actors in networks (Law, 2007; O'Connell et al., 2014). In fact, it takes place through a series of complex interactions between humans and non-humans and the ways in which they interlock within networks of constructions and reconstruction which allow the generation of accepted facts or knowledge (McNamara et al., 2004). In accounting, ANT explains how networks of actors are built to claims to specific knowledge by the users of accounting numbers and reports to persuade and influence others (Mouritsen et al., 2001; O'Connell et al., 2014). However, this knowledge may or may not be accepted by others (i.e., outside the networks) as 'fact' which stimulates the use of the world 'claim' rather than 'fact' to represent the generated knowledge (Gendron and Barret, 2004; O'Connell et al., 2014). Actors considered in this network may be human or non-human (such as MAS) which act or make a difference within the network (Lowe, 2001; O'Connell et al., 2014).

Structuration theory founded by Anthony Giddens has created a small but distinctive contribution to alternative management accounting research (Baxter and Chua, 2003). Structuration theory conceptualizes the interconnection between the agency of individuals and the reproduction of social structures such as rules and resources (Baxter and Chua, 2003). Scapens (2006) viewed that structuration theory has been adopted by researchers following interpretivism paradigm to understand how management accounting practices (MAPs) make senses. In addition to this, this theory has also been used as a "sensitizing device" (Macintosh and Scapens, 1990), and to guide empirical research that focus on the dimensions of structure (signification, domination and legitimation (Coad and Herbert, 2009). This separation of structures into several dimensions can provide a deeper understanding of MAPs in a way better than provided by the studies that focus either on institution context or the behavior of agents, alone (Coad and Herbert, 2009).

The most important development was made by Stones (2005) in the structuration theory specifically in terms of ontology, epistemology and methodology which is now widely known as strong structuration theory (Bryant and Jary, 2014; Coad et al., 2015; Coad et al., 2016). Stones (2005) framework moves away from the relatively abstract ontology proposed by Giddens, and suggest adopting ‘quadripartite framework’ of interrelated components, comprising internal structures, external structures, active agency and outcome to better understand the ‘duality of structure’ (Coad et al., 2016). In fact, strong structuration theory provides a conceptual methodology to establish a bridge between theory and empirical research, and to develop new theoretical ideas (Coad et al., 2016).

The details of contingency theory and institutional theory are presented in the following sections (4.4.1 and 4.4.2) as they are adopted in the present study.

### **4.3 Theories applied in strategic management accounting**

Rashid et al. (2020) reviewed 23 leading accounting Journals to investigate how management accounting researchers have responded to the recommendation of Langfield-Smith (2008) to further research on the adoption of SMA practices. They reported the distribution of theories employed in the SMA research between 2008 and 2021 (both years inclusive) using the table presented in the next page.

The table shows the dominance of strategic management theory (51), followed by contingency theory (16). Of the remaining theories, psychology (7), institutional theory (5), and sociological theories (4) have been able to attract researchers to a limited extent (Rashid et al., 2020). Surprisingly, a substantial number of studies did not employ any explicit theory. Among the other theories, the use of diffusion of innovation theory, grounded theory, and actors-network theory are mentionable.



Table 4.1: Theories used in SMA research

Topics	Frequency
Economics	1
Contingency theory	16
Organizational behavior	1
Production and operations management	4
Psychology	7
Strategic management	51
Organizational behavior and psychology	1
Sociology and psychology	4
Strategic management and contingency theory	1
Practice theory	1
Upper echelon theory	1
Institutional theory	5
Institutional and critical theory	1
Others <sup>a</sup>	19
No explicit theory	38
Total	151

**Notes:** <sup>a</sup>Diffusion of innovation theory, Grounded theory, Corporate governance theory, Person-organization fit theory, Inscription theory. Actor-network theory, Configurational Theory, Self-determination theory, Fuzzy set theory, Inequity theory, Dynamic capabilities theory, and General diffusion theory.

Source: Adapted from Rashid et al. (2020)

However, if the focus is shifted on those studies that have exclusively concentrated on SMA as a package, the dominance of contingency theory is clearly evident (Table 3.1 and Appendix 1). The use of upper echelon theory, role theory, agency, resource dependency, and stewardship theory, strategic management, and Configurational theory is also evident to a little extent.

## **4.4 Theories considered in this study**

### **4.4.1 Contingency theory**

The present research employs ‘contingency theory’ in line with the objectives 2 and 3. Objective 2 was about the identification of the contingent factors influencing the adoption decision of SMA techniques in the Bangladeshi companies, while objective 3 concentrates on the examination of the impact of usage on several aspects of performance. Contingency theory has been used by several researchers in SMA research (Cravens and Guilding, 2001; Cadez and Guilding, 2008; Cinquini and Tenucci, 2010; Nuhu et al., 2017; Oboh et al., 2017; Turner et al., 2017; Hadid and Al-Sayed, 2021) to examine the impact several contingent variables on the adoption of SMA practices, and to a limited extent the impact of adoption on performance (Cadez and Guilding, 2008). While the extant literature explored the impact of several contingent variables such as generic strategy pursued (Cadez and Guilding, 2008; Cinquini and Tenucci, 2010), competitive strategy (Cravens and Guilding, 2001), market orientation (Guilding and McManus, 2002; Cadez and Guilding, 2008), intensity of competition and company size (Cadez and Guilding, 2008; Hadid and Al-Sayed, 2021) on the adoption of SMA practices, the impact of several other contingent variables such as several facets of culture, organizational structure, environmental uncertainty and institutional pressures suggested by several researchers (Chenhall, 2003; Cadez and Guilding, 2008; Hadid and Al-Sayed, 2021) are yet to explore. Accordingly, the present research employs contingency theory to examine the impact of these unexplored contingent variables on the adoption of SMA techniques.

#### **4.4.1.1 Historical background**

The use of contingency theory in the accounting literature can be traced back to the mid-1970s (Otley, 1980). However, the theory was originally developed in the early to mid-1960s

in the organization theory literature (Otley, 1980). Burns and Stalker (1961), Woodward (1965), Lawrence and Lorsch (1967) and Perrow (1970) were among the early researchers focusing on the effect of environment and technology on organizational structure and activity (Waterhouse and Tiessen, 1978; Chenhall, 2003). Although the ‘full-fledge’ use of contingency theory in Management Accounting (MA) was not started before 1975, the relevance of organizational factors to the design of Management Accounting System (MAS) has long been recognized by researchers such as Anthony (1965), and Horngren (1972). Horngren (1972) viewed the design of MAS and organizational structure as indivisible and interdependent; though did not demonstrate how these joint design tasks can be undertaken (Otley, 1980). Bruns and Waterhouse (1975), Hayes (1977), Waterhouse and Tiessen (1978) are amongst the earlier researchers who focused on the use of contingency theory in MA research (Otley, 1980; Chenhall, 2003). Since then, researchers in management accounting have continued to demonstrate their devotion on this theory. Otley (2016) reviewed the articles published between 1980-2014 using contingency theory and documented that 236 articles have been published (7 articles per annum) in influential accounting (183) and other (53) journals. The outcomes of the review revealed four different features that characterize the work done using the theory: first, the variables or measures used in the analysis were diversified and could not correspond to the prior works; second, researchers have attempted to extend the boundaries of the field but by increasing the number of independent variables (contingent factors) and overlooking the extension of dependent variable (the design and use of management control system (MCS)); third, the characterization of dependent variable (MCS) has been paid with limited attention; and finally, survey questionnaires (quantitative method) was found as the dominant research method with few exceptions where more interpretative qualitative method have been combined (Otley, 2016). Despite these

shortcomings, research in management accounting and control over the past forty years under the banner of contingency theory is regarded one of the success stories (Otley, 2016).

#### **4.4.1.2 Fundamentals of contingency theory**

In contingency theory, “the term ‘contingency’ means that something is true only under specified conditions” (Chenhall, 2003, p.157). Furthermore, the foundation of contingency-based research lies in organizational theory, and therefore, the contextual variables in this theory are judged only at the organizational level (Chenhall, 2003). Initially, Contingency theory was developed to explain varieties of management accounting practices and to find a match between the forms of organizational structures and existing circumstances (Otley, 1980; Tiessen and Waterhouse, 1983; Chenhall, 2003; Otley, 2016). Tiessen and Waterhouse (1983, p. 251) stated that the effectiveness of management accounting system alternatives is contingent on an organization’s structures and context. In reviewing the achievement and prognosis of contingency theory in management accounting, Otley (1980, p. 84) commented that “there is no universally appropriate accounting system which applies equally to all organizations in all circumstances. Rather, it is suggested that particular features of an appropriate accounting system will depend upon the specific circumstances in which an organization finds itself. Thus, a contingency theory must identify specific aspects of an accounting system which are associated with certain defined circumstances and demonstrate an appropriate matching.”

Environmental uncertainty and technology are the two most studied contingent variables to date in examining the effect of contingencies on organizational structures (e.g., Burns and Stalker, 1961; Woodward, 1965; Lawrance and Lorsch, 1967; Perrow, 1970) and on management control system (MCS) design (e.g., Waterhouse and Tiessen, 1978; Chenhall and Morris, 1986; Reid and Smith, 2000; Abdel-Kader and Luther, 2008). Afterwards, a

number of contingent variables have been added by researchers in this field including the effect of size (Bruns and Waterhouse, 1975; Khandwalla, 1977; Abdel-Kader and Luther, 2008), organizational structure (Bruns and Waterhouse, 1975; Chenhall and Morris, 1986; Gosselin, 1997; Abdel-Kader and Luther, 2008), strategy adopted (Govindarajan and Gupta, 1985; Chenhall and Morris, 1995; Guilding, 1999; Abdel-Kader and Luther, 2008), culture (Harrison, 1992; Vance et al., 1992; Ueno and Wu, 1993), contemporary technology (Ittner and Larcker, 1997; Chenhall, 1997; Mia, 2000; Abdel-Kader and Luther, 2008), processing characteristics (Khandwalla, 1977; Chenhall and Morris, 1986; Dunk, 1992; Abdel-Kader and Luther, 2008). However, the dominant approach in contingency-based MAC research assumes that changes in contingencies drive managers to adapt their organizations to attain the desired fit and outcomes (Chenhall, 2003).

Otley (2016) suggests three areas where researchers in management accounting using contingency theory have to focus: first, defining the aspects of management accounting system (MAS) to be explained in a particular study (for example, only the existence of a particular technique will be examined or the extent and manner of application will be examined); second, specifying the contingent variables to describe the circumstances in a way that facilitates the comparison of the results of the study with that of the prior studies; finally, defining how the matching between structure and context will be confirmed (for example, merely the existence will be considered as an indicator of matching or the effect on firm's performance will be considered).

#### **4.4.1.3 Contingency framework used in the present study**

In line with the objectives of the study, the present study includes a number of contingent variables in order to trace out what really affect the adoption of SMA practices. A thorough review of the foregoing section motivates the present study to adopt a modified version of

Chenhall (2003) contingency framework. The justification of using a modified version lies in the differences in the cultural, legal, and institutional frameworks of the context (Bangladesh). In his comprehensive review of contingency-based research in management accounting, Chenhall (2003) outlined several contingent variables under seven heads: (1) the external environment, (2) technology, (3) contemporary technology, (4) organizational structure, (5) size, (6) strategy, and (7) culture. He and Otley (2016) also suggested a number of variables within and beyond these variables to consider in the future studies. In line with their suggestions, the present study includes several additional variables considering the differences in the context used. The details of each of the contingent variables used are provided here.

#### **4.4.1.3.1 The external environment**

The external environment is one of the dominant contextual variables in the contingency-based research in management accounting (Chenhall, 2003; Otley, 2016). Prior researches have focused on several aspects of external environment till date including the environmental uncertainty (Burns and Stalker, 1961; Khandwalla, 1977; Chenhall and Morris, 1986; Ezzamel, 1990; Merchant, 1990; Dunk, 1992; Tymond et al., 1998; Abdel-Kader and Luther, 2008), hostility (Khandwalla, 1972; 1977; Otley, 1978; Imoisili, 1985), diversity (Khandwalla, 1977), complexity (Khandwalla, 1977; Brownell, 1985), dynamism (Duncan, 1972; Waterhouse and Tiessen, 1978), and ambiguity (Ouchi, 1979). Amongst these variables, environmental uncertainty has received the widest attention of researchers in management accounting (Chenhall, 2003; Otley, 2016). The three most crucial reasons for such popularity are: first, strongest results documented by earlier studies in regard to the effect of the level of uncertainty on structures, particularly the use of more flexible and adaptable systems by organization facing high level of uncertainty; second, the emergence of

global economy, increased competition, and the attempt to control all aspects of the value chain by organizations have fostered the continual increase in environmental uncertainty; and finally, the ease of measurement of perceived environmental uncertainty using interviews or questionnaires makes it famous to researchers in this arena (Otley, 2016).

Unfortunately, the use of different measures for the same environmental construct (e.g., uncertainty) in different studies makes the interpretation and comparison of findings complicated (Chenhall, 2003). For example, Gordon and Narayanan (1984) use intensity of competition, the unpredictable nature of external environment and elements of change as the measure of uncertainty. In a later study, Chenhall and Morris (1986) use lack of information on environmental factors, inability to predict the effect of environment on success or failure, and not knowing the consequence of incorrect decision on the organization as the measure of environmental uncertainty (Chenhall, 2003). The present study includes the following factors as the measure of ‘environmental uncertainty’: (1) unpredictability of the environment, (2) fluctuating, (3) ambiguousness, (4) lack of information on environmental factors, and (5) uncertainty about the outcomes of decisions.

In addition to the ‘environmental uncertainty’, the present study also includes environmental hostility, complexity, diversity, social pressure on ecology, industry pressure, professional influence, and pressure from regulators to represent the ‘external environment’. Amongst these factors, environmental hostility represents the intensity of competition or the level of difficulty an organization faces from its environment within which it operates (Chenhall, 2003; Otley, 2016). More specifically, to what extent, competition in an industry is stressful, dominating and restrictive represents the level of hostility of that environment (Khandwalla, 1977; Chenhall, 2003). Using the taxonomy of Khandwalla (1977), the present study measures the intensity of competition or the level of hostility through assessing how stressful, dominating and restrictive the environment is.

Environmental complexity is another factor representing the external environment. The level of complexity is supposed to be high in industries that experience rapid changes in technology (Khandwalla, 1977; Chenhall, 2003). Environmental diversity also comprises the external environment which indicates the level of varieties in products, inputs, and customers (Khandwalla, 1977; Chenhall, 2003). An environment is considered highly diversified if it demonstrates a wide range of offerings, suppliers, and buyers.

In addition to the factors presented above, several researchers call for inclusion of some other factors in representing the external environment in the contingency-based research in MAC. For example, Chenhall (2003) emphasizes the study of social pressure on maintaining environmental ecology and economic and social well-being of employees and society. He also suggests that the pressure an environment exerts in the design of management control system (MCS) such as MAC should also be explored. Granlund and Lukka (1998) also suggest the inclusion of these pressures by splitting them into economic, normative, coercive and mimetic pressures. Previous research in MCS (Burns and Scapens, 2000; Hussain and Hoque, 2002; Hussain and Gunasekaran, 2002; Arroyo, 2012) to date has focused on these factors using institutional theory and majority of these studies are qualitative (with dominance of case study method) in nature explaining the change in MCS over time. As institutional pressures come from the external environment, the use externally-focused SMA techniques in comparison to formal MAS seem to be more appropriate in dealing with these pressures. To comply with the rules issued by the regulators (coercive pressure) may require information external to the organization. Dealing with the pressures exerted by several stakeholders such as shareholders, lenders and donor agencies may also require strategic-oriented information that the traditional MAS may not provide. Moreover, to learn about the apparently successful practices (mimetic pressure) in the industry, competitor-focused SMA techniques seem to be more appropriate. The arguments provided above and the



recommendation of several researchers motivates to include all these factors in analyzing the effect of external environment on the adoption SMA practices.

#### **4.4.1.3.2 Process characteristics (Technology)**

Technology refers to the way in which an organization's work processes operate or the way of transforming inputs into outputs (Chenhall, 2003). The process also includes human and other resources such as materials, machines and software. Reviewing the organization literature, Chenhall (2003) identified three generic types of technology: (1) complexity of the process, (2) uncertainty of the task carried out in the process, and (3) interdependence of the tasks. The complexity of the process depends on the nature of products/services offered (standardized or customized), the size of production runs (large-batch or small-batch), and whether the operations are automated or not (Woodward, 1965; Chenhall, 2003). The level of task uncertainty involved in a process depends on the extent to which the operating procedures are standardized (Daft and Macintosh, 1981). The level of interdependence among tasks also affects the choice of control mechanism including the techniques of MAC. In highly interdependent situations, MCS focusing on appropriate aggregations and integrative information with broad scope are emphasized (Chenhall and Morris, 1986) along with the greater reliance on statistical reports for planning and informal coordination (Macintosh and Daft, 1987). In contingency-based MAC research, several prior studies (e.g., Hirst, 1983; Brownell and Merchant, 1990; Brownell and Dunk, 1991; Mia and Chenhall, 1994; Abernethy and Brownell, 1997; Abdel-Kader and Luther, 2008) have examined the effect of processing characteristics or technology on the adoption and choices of MAPs. Consistent with prior studies, the present study uses three generic types of technology or processing characteristics: (1) complexity of process, (2) task uncertainty, and (3) task interdependence.

#### **4.4.1.3.3 Contemporary technology**

The role of using contemporary or advanced technology in operations such as just-in-time (JIT), total-quality-management (TQM), flexible manufacturing (FM), and advanced manufacturing technology (AMT) has received vast attention of the researchers as a dimension of context over the last three decades (Chenhall, 2003), and has provided several opportunities for contingency-based MAC research (Young and Selto, 1991). Prior researches (e.g., Ittner and Larcker, 1997; Perera et al., 1997; Sim and Killough, 1998; Mia, 2000; Abdel-Kader and Luther, 2008) examined and suggested the association between the use of advanced technology in operation and the use and appropriateness of MAPs such as performance measurement and reward systems used. To measure the effect of the use of contemporary technology on the adoption of SMA practices, the present study considers the use of computer aided design, robotics, automated material handling, and integration of manufacturing process as the representation of the use of advanced technology in operation (Dean and Snell, 1996; Abdel-Kader and Luther, 2008).

#### **4.4.1.3.4 Organizational structure**

The formal specification of different roles for the members of an organization represents the organizational structure (Chenhall, 2003). In contingency-based research, the structure has also been described as structural mechanisms that might take the form of centralization, standardization, formalization and configuration (Pugh et al., 1968; Pugh et al., 1969; Chenhall, 2003). Burns and Stalker (1961) view organization as either mechanistic or organic based on how formal and specific the job of employees are. In mechanistic organization, the tasks of employees are highly formalized and specialized as compared to the organic organization where the jobs of employees are not so formal and specific. Prior research documents considerable effects of the types of organizational structure on the choice of MCS

such as ABC (Shields, 1995; Gosselin, 1997; Foster and Swenson, 1997). The present study considers the level of centralization/decentralization and organic/mechanistic aspects of organizational structure in analyzing the effect of structure on the choice or adoption of particular SMA practices.

#### **4.4.1.3.5 Size**

The size of an organization has considerable effect on the choice of MCS (Chenhall, 2003), production techniques, product diversification, and the use of sophisticated control and environmental information (Khandwalla, 1977; Chenhall, 2003). However, prior researches demonstrate substantial variations in measuring the size including total revenue, assets, equity value, profits, and number of employees (Chenhall, 2003). Amongst these measurements, majority of the contingency-based MCS studies have measured the firm size using the number of employees because of their high correlation with net assets (Pugh et al., 1969). Chenhall (2003) suggests that the measurement of firm size should be based on the element of the context and dimensions of MAPs being studied. He further suggests that number of employees should be used as the measure of firm size if the study examines the effectiveness of particular MAPs; otherwise, sales or assets should be used to measure the firm size. The present study uses number of employees to represent firm size to facilitate comparison with prior studies in this field of research.

#### **4.4.1.3.6 Strategy**

Recent researches in the field of MA (Langfield-Smith, 1997; Guilding, 1999; Cadez and Guilding, 2008; Cinquini and Tenucci, 2010) have focused on investigating the effect of the type of strategies followed on the adoption of a particular or package of MAPs. However, it is different from other contingent variables in the sense that strategy is a means of influencing

the external environment, technologies and control mechanism rather than as an element of the context (Chenhall, 2003). Moreover, several generic taxonomies of strategy have been used by prior researchers in representing strategy including strategic pattern (prospectors-defenders-analyzers) (Miles and Snow, 1978), strategic position (product differentiation-cost leadership) (Porter, 1980), and strategic mission (build-hold-harvest) (Gupta and Govindarajan, 1984). The type of strategies followed affects not only the choice of a specific or package of MCS, but also the structures, design of tasks and co-ordination mechanisms of the firm. Prior research (e.g., Guilding, 1999; Cinquini and Tenucci, 2010) documented significant association between the types of strategies followed and the types of MCS adopted. The present study employs three generic taxonomies of strategy: (1) strategic pattern, (2) strategic mission, and (3) strategic position. In the strategic pattern category, prospector (characterized by offensive marketing, new product development, quick response to opportunity with few research, and price skimming), defender (stable market through few offerings with improved quality or low cost), analyzer (balanced package of offerings, slow improvement in offerings, between the two extreme of prospector and defender), and reactor (respond to opportunity or crisis only if forced by macro economic variables, resistance to change) have been studied to investigate their effect on the adoption of a package of SMA practices. Build (focus on creating new offering, accept uncertainty), hold (focus on existing offering through innovation and adjustment, gradual growing of market share), harvest (improve offering to gain more money, matured stage of product life cycle) and divest have been included in the strategic mission category. With respect to strategic position, differentiator, cost leader, and focus (niche strategy whereby the needs of a specific target markets are focused, adopt product differentiation or cost leadership based on the target market demand) have been studied to examine their association with the use of SMA practices.

#### **4.4.1.3.7 Culture**

Unlike other contextual variables, there exists limited studies with respect to the effect of both national and firm-specific culture on the adoption and use of MCS; therefore, remains somewhat exploratory (Chenhall, 2003). The effect of culture becomes more critical for companies that have expanded its operations overseas. One major question that such companies faced is that would they transfer their MCS to overseas or redesign their MCS to fit with the overseas cultural characteristics (Chenhall, 2003). However, there exist substantial variations with respect to what represents the elements of culture. For example, Kaplan (1965) describes culture as the patterned and interrelated traditions transmitted over time, whereas Seymour-Smith (1986) states it as inherent traits such as knowledge, belief, custom, and other capabilities acquired from the society. Hofstede (1984) describes cultural values as power distance, individualism vs. collectivism, uncertainty avoidance, and masculinity vs. femininity which has attracted majority of the researchers in the contingency-based MA research (Chenhall, 2003). The present study uses power distance (unequal allocation of power), individualism vs. collectivism (emphasizing self-interest or organizational interest), uncertainty avoidance (prefer to rely on rules and structures), and masculinity vs. femininity (emphasis on career success or quality of personal life) to measure the association between firm-specific culture and SMA usage.

#### **4.4.1.3.8 Presence of cost and management accountants**

It is well evident in the literature that professional holds the attribute 'intellect' (Zeff, 1989), which represents "an abstract idea concerning characteristics like the ability to reflect upon one's experiences along with an understanding of the broader environment in which one conducts one's practice" (Howieson et al., 2014, p.5). Moreover, the highly standardized and updated curriculum of professional accounting bodies and continuous professional

development (CPD) training advance their knowledge and skills competent to make wise decision in complicated environment (IFAC, 2013; Jui and Wong, 2013). More specifically, certified management accountants (known as cost and management accountants in Bangladesh) are expected to have expertise knowledge on MCS such as MAPs since the syllabus of both the Certified Institute of Management Accountants (CIMA) and the Cost and Management Accountants of Bangladesh (ICMAB) includes several courses on MAPs. Additionally, these institutes arrange CPD in the forms of workshop, seminar, and training that provides in-depth and practical knowledge on several techniques of MAPs. However, contingency-based research in MCS did not deal with the presence of cost and management accountants on the adoption of particular or a package of MAPs. These motivate the present study to include the presence of cost and management accountants as a contextual variable to examine whether their presence has any effect on the adoption and use of SMA practices.

#### **4.4.1.3.9 Accountant's participation in strategic decision making**

Cadez and Guilding (2008) introduced this variable in the contingency-based research in MAC where they investigated whether accountant's participation in strategy formulation and implementation can affect the use of more innovative and strategic-oriented MAPs. In fact, the participation of accountants in strategy formulation and implementation assists them to realize what sort of information is required in strategic management decision (Cadez and Guilding, 2008). These motivate accountants to instigate innovative accounting techniques such as SMA techniques (Abernethy and Bouwens, 2005) that have greater market and long-term focus (Coad, 1996; Otley, 1999). This is particularly true in firms where the accountants feel that the existing MAPs failed to provide information required in strategic decision making process. This motivates the present study to include the participation of accountants

in strategic decision making as contextual variable in investigating whether such presence has any effect on the adoption and use of innovative and strategic oriented MAPs.

#### **4.4.1.3.10 Market orientation**

Understanding the importance of customer loyalty in achieving sustainable competitive advantage, many firms have shifted their orientation from product to market whereby strategy formulation explicitly emphasizes on attaining and retaining customers (Jain and Singh, 2002). Firms employing marketing orientation philosophy plan and coordinate all the tasks focusing on the prime goal of satisfying customer needs (Jaworski and Kohli, 1993; Walker et al., 1998). Narver and Slater (1990) specified three behavioral components of market orientation: customer orientation, competitor orientation, and interfunctional coordination. They also suggest long-term focus and profit objective as the two decision criteria in this orientation. Guilding and McManus (2002) and Cadez and Guilding (2008) have examined the association between market orientation and SMA usage in the developed economy settings (Australia and Slovenia). The present study also includes market orientation as a contingency factor to examine its effect on the adoption of more innovative and contemporary MAPs in the context of a developing economy. Figure 4.1 exhibits the summary of contingent variables to be investigated in the present study.

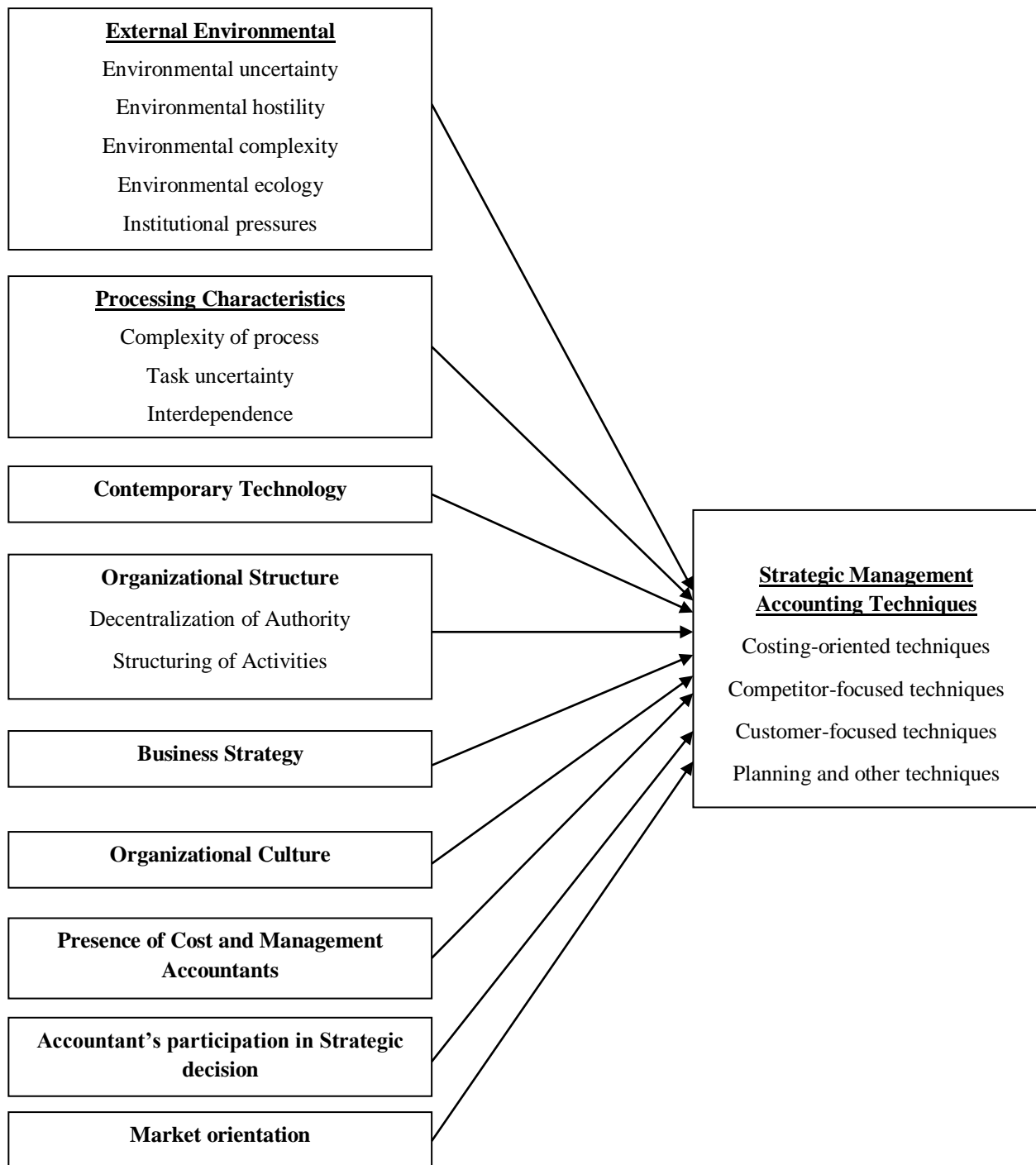


Figure 4.1 Contingent factors influencing the adoption of Strategic Management Accounting Techniques (Source: Author's work)

#### 4.4.2 Institutional theory

Institutional theory has attracted many researchers in management accounting (MA) who seek to explain why and how organizations adopt new and innovative MAC techniques (Moll



et al., 2006). The magnetism of this theory lies in the fact that this theory can include the social and institutional aspects of organization and their environment in studying changes in the MAPs (Moll et al., 2006). While contingency theory focuses on identifying internal and external factors contingent to the adoption of particular MAPs, institutional theory demonstrates how institutional factors such as organizational rules and values (under Old Institutional Economies) or cultural rules and social norms (New Institutional Sociology) shape changes in the structures such as management accounting systems (MAS).

#### **4.4.2.1 Historical background of Institutional theory**

Philip Selznick is one of the earliest scholars providing the idea of institution and institutional theory. Selznick (1957) described institutionalization as an adaptive process to infuse value beyond the technical requirements (Scott, 1987). The work of Berger and Luckmann (1966) is also regarded as one of the foundations for the emergence and advancement of institutional theory. They defined (p.54) institution as “a reciprocal typifications of habitualized action by types of actors”. As Tolbert and Zucker (1996) held that structure must generate action to be institutional in true sense. If structure cannot be translated into action, the social structure, in some fundamental sense, does not exist in such institution (Giddens, 1979). Thus, in its origin, institutions were seen as a specific social setting in which institutionalized rules and values shape the behavior of people working within the institution (Rutherford, 1994; Scapens, 1994; Ribeiro and Scapens, 2006). This view of institution is termed in the literature of organizational theory as ‘Old institutional economies (OIE)’. OIE stress the role of habit and history in restricting the choice or the force of moral pressure that reinforce the social order (Scott, 2008).

However, Myer and Rowan (1977) challenged this view of institutional theory and claimed, after a series of observations of educational sectors in the USA, that they find inconsistencies

and decoupling between formal structures and actual work practices (Ribeiro and Scapens, 2006). This modified view of institutional theory is termed in the literature as new institutional sociology (NIS). Scott (2008) offered a review of developments in the NIS since 1977. In the early work of Myer and Rowan (1977), organizations have been identified as legitimate and dominant actors in the society and offered new explanation for formal structure (Scott, 2008). Meyer and Rowan (1977) further argued that institutionalized organizations adopt structures and procedures that are valued in the social and cultural environment to achieve legitimacy and to ensure access to resources required to survive in that environment (Ribeiro and Scapens, 2006). Drawing on these principles, several researchers (e.g., DiMaggio and Powell, 1983, 1991; Scott, 1995, 2005) have advanced this theory in a wide variety of intellectual arenas (Scott, 2008).

#### **4.4.2.2 Fundamentals of Institutional theory**

Perhaps the earliest definition of ‘institution’ within the domain of ‘institutional theory’ has been offered by Selznick (1957). He (p. 21-22) defined institution as “institutions, whether conceived as groups or practices, may be partly engineered, but they also have a ‘natural’ dimension. They are product of interaction and adaptation; they become the receptacles of group idealism; they are less readily expendable.” Scott (1987) argues that Selznick’s institutional approach emphasizes on adaptive change and a holistic and contextual approach. Berger and Luckmann (1966) viewed institutions as constituted by reciprocal typifications of habitualized action and are essentially cognitive constructions that control social action independent of any form of sanction. There exist two prominent views of institutions in the literature: Old Institutional Economics (OIE) and New Institutional Sociology (NIS).

Apart from these two views, there exist institutional entrepreneurship and institutional logics within the domain of institutional theory. Institutional entrepreneurship seeks to bridge a link

between old and new institutionalism (DiMaggio, 1988; Dacin et al., 2002) whereby institutional entrepreneur (actors) triggers significant events to deinstitutionalize reprehensible prevalent practices and to re-institutionalize the new ones seems appropriate (Arroyo, 2012). Consequently, the purposive actions from individuals and organizations to create, maintain, and disrupt institutions is critical in institutional entrepreneurship (Lawrence and Suddaby, 2006). To play the role of institutional entrepreneur, they must (1) initiate divergent changes, and (2) actively take part in the implementation of such changes (Battilana et al., 2009).

An institutional logic is a central logic conveying the material practices and symbolic constructions that constitute organizing principles of a specific field (Friedland and Alford, 1991; Townley, 1997). Institutional logic recognizes that there are differentiated societal spheres, each with differing belief systems sustaining a variety of social relations, allows addressing the issue of legitimacy of organizational change more clearly (Friedland and Alford, 1991; Townley, 1997). It offers an examination of possible political dimensions of conflict and resistance to isomorphism beyond the role of organizational self-interests (Townley, 1997). These logics are constructed through institutionalized practices and historical experiences which construct normative models of organizational legitimacy (Friedland and Alford, 1991). In turn, these norms and preconscious assumptions shape action independently of immediate individuals or organizational interests (Friedland and Alford, 1991).

#### **4.4.2.2 .1 Old Institutional Economies (OIE)**

In the OIE, institution is seen as a set of rules and values of a particular social setting that shape human behavior (Rutherford, 1994; Scapens, 1994). People working in such social setting might have to overlook ‘principle of rationality’ to ensure compliance with such

institutionalized rules and values (Rutherford, 1994; Ribeiro and Scapens, 2006); and therefore, those settled ways of thinking and doing constrain the choices of organization people (Scott, 2008). Thus, habits (features of individual) and routines (regular ways of thinking and doing tasks) are two central components of institution whose recurrent reproduction over time lead to institutionalization (Burns and Scapens, 2000; Ribeiro and Scapens, 2006). This process is considered to be 'gradual' and in some sense 'natural' which spread out specific patterns of thought and action in a particular social setting (Burns and Scapens, 2000; Scapens, 2006; Ribeiro and Scapens, 2006). MAC researchers employ OIE not only to analyze the role of existing institutions in change process, but also to study the reproduction or change in institutions over time (Ribeiro and Scapens, 2006). Management accounting is also seen as a set of rules and routines in OIE that contributes (together with other organizational rules and routines) to the reproduction and cohesion of organizational life (Scapens, 1994).

Another stream of OIE is neo-OIE that seeks to realize how MAC rules and routine become institutionalized in the organization (Ribeiro and Scapens, 2006). However, all newly introduced rules and routines (e.g., MAS) may not be institutionalized as the taken-for-granted basis for actions and interactions if they challenge the existing institutions in the organization (Burns and Scapens, 2000). Burns (2000) noticed the situation as the emergence of 'the theme of power'. In such situation, the organizational actors may propose the introduction of new MAS that is compatible to the organizational resources and strategies. However, the power of the existing institutions may act as resistance to shift to new MAS in such organizational setting (Burns, 2000; Ribeiro and Scapens, 2006).

#### **4.4.2.2 New Institutional Sociology (NIS)**

Meyer and Rowan (1977) are credited for the introduction of NIS. Investigating the educational sector of USA in 1970, they identified several contradictions between formal structures and actual work practices that could not be explained by any existing organizational theory (Myer and Scott, 1992). The key premise of NIS is that some organizations exist in highly institutionalized environments. The environments include the cultural rules and social norms instead of merely a source of task constraints or a relational network. Such organizations adopt structures and procedures that are accepted and valued in their social and cultural environment to achieve legitimacy and secure resources required for survival (Ribeiro and Scapens, 2006). More specifically, NIS explains institutionalized organizations at ‘macro’ level, particularly in explaining organizations that adopt innovations (Meyer and Rowan, 1977; DiMaggio and Powel, 1983). In the earlier stage of life cycle, organizational fields <sup>1</sup> exhibit substantial diversity in approach and form (DiMaggio and Powel, 1983). Once a field becomes well established, there is a relentless push towards homogenization (DiMaggio and Powel, 1983). This process of homogenization is termed as ‘isomorphism’ in the literature (DiMaggio and Powel, 1983), and is usually achieved through the diffusion of specific organizational forms and procedures across organizations operating in similar environments (Scott, 2008) or societal sectors (Scott and Meyer, 1992) or organizational fields (DiMaggio and Powel, 1983) in an endeavor to achieve legitimacy and resources (Ribeiro and Scapens, 2006). Furthermore, once disparate organizations operating in the same line of business are structured into an actual field, the need for legitimacy and resources leads organizations to become more isomorphic (similar) with other organizations in their institutional setting (DiMaggio and Powel, 1983; Ribeiro and Scapens, 2006). And when a threshold is reached in a specific organizational field/sector/environment, the

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<sup>1</sup> Organizational field means those organizations which, in the aggregate, constitute a recognized area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services or products (DiMaggio and Powell, 1983, p. 148).

imitation may be indispensable to achieve legitimacy rather than to improve performance (DiMaggio and Powel, 1983).

As the concept 'isomorphism' is central to the understanding of NIS, a clear understanding with respect to its fundamentals, types, and effects is imperative. Hawley (1968) viewed isomorphism as a constraining process that forces one unit in a population to resemble other units operating in a similar setting or environment. Hawley's concept was extended considerably by Hannan and Freeman (1977) who identified the selection of non-optimal forms out of a population of organizations as the central cause of isomorphism. They further held that isomorphism may result due to the fact that organizational actors learn appropriate responses and adjust their behavior accordingly (DiMaggio and Powel, 1983). Based on the work of Meyer (1979) and Fennell (1980), DiMaggio and Powel (1983) identified two types of isomorphism: (1) competitive, and (2) institutional. Competitive isomorphism, assuming system rationality, emphasizes on the market competition, niche change, and fitness measures as the central causes of imitation of a particular form and procedure of organization by others (Hannan and Freeman, 1977). However, DiMaggio and Powel (1983) argued that such a view is relevant in an organizational field only where free and open competition exists. Moreover, organizations compete not only for resources and customers, but also for political power and institutional legitimacy and for social and economic fitness (Carroll and Delacroix, 1982; DiMaggio and Powel, 1983). To address these issues, DiMaggio and Powel (1983) identified three mechanisms of institutional isomorphic change. These includes: (1) coercive isomorphism that stems from political influence and the problem of legitimacy; (2) mimetic isomorphism that arises due to standard responses to uncertainty; and (3) normative isomorphism resulting from professional influence. The details of these three forms along with their components will be provided in the following section.

**Table 4.2: Drivers of convergence and divergence of management accounting practices**

<b>Economic pressures</b>	<b>Coercive pressures</b>	<b>Normative pressures</b>	<b>Mimetic pressures</b>
<i>Factors driving convergence</i>	<i>Factors driving convergence</i>	<i>Factors driving convergence</i>	<i>Factors driving convergence</i>
Global economic fluctuations/recessions Deregulation of market.	Transactional legislation (e.g., European Union).	Management accountants' professionalization (networking, etc.).	Limitation of leading companies' practice (benchmarking).
Increased competition (globalization of markets).	Transactional trade agreement	University research and teaching.	International/ global consultancy industry.
Advanced production technology (e.g., JIT).	Harmonization of the financial accounting legislation.		
Advanced information technology (e.g., integrated systems such as SAP R/3, ABC-software packages, expert systems, and internet).	Transactional' (especially global firm) influence on their subsidiaries. Headquarters influence in general.		
	<i>Factors driving divergence</i>	<i>Factors driving divergence</i>	
	National legislation. National institutions/regulation (labor union, financial institutions, etc.).	National culture. Corporate cultures.	

Source: Granlund and Lukka (1998, p.157).

Yazdifar (2004) also recognized these two types of isomorphism (competitive and institutional) in an endeavor to demonstrate how the realm of society drives homogenization in the realm of organization. However, he recognized 'competitive' isomorphism as synonymous to 'technical' isomorphism. He also showed that these technical and intuitional pressures drive changes not only in the MAPs but also in the organizational activities and structures. However, Granlund and Lukka (1998) recognized competitive forces as a component of 'economic pressures'. In addition to the factors/drivers of homogenization,

Granlund and Lukka (1998) also identified several factors that cause divergence of organizational forms and procedures. In the economic pressures category, they recognized global economic and market fluctuations, increased competitions, advancement in operating technology and IT as the drivers of homogenization/convergence. In the coercive pressures category, majority of the factors/drivers they identified belongs to global firms and/or multinational companies/enterprises (MNCs/MNEs). For instance, they recognized transactional influence of parent company on their subsidiary and headquarters influence in general. Apart from these factors, they also identified drivers that are initiated continentally (e.g., transactional legislation of European Union) and globally (e.g., transactional trade agreement of World Trade Organization).

However, they cited national legislation and institutions as the coercive factors driving divergence of MAPs between MNEs and their subsidiaries. With respect to normative pressures, national and corporate cultures are recognized as the drivers of divergence in the MAPs between MNEs and their subsidiaries.

#### **4.4.2.3 Institutional theory used in the present study**

This study uses a modified version of Granlund and Lukka's (1998) model in the analysis and interpretation of interview data. The rationale for adopting Granlund and Lukka's (1998) model is that they have added economic pressures to the DiMaggio and Powel's (1983) three mechanisms of institutional isomorphic change (coercive, mimetic, and normative). As mentioned earlier in the first chapter, this study collects and analyzes quantitative data (through questionnaire survey) in the first stage. Based on the results of survey data, the choice of theory, pattern of questionnaire, and target respondents have been designed in the second stage. As the initial results demonstrate (discussed in details in Chapter 7) the dominance of firm's internal and external organizational factors over the institutional factors



proposed by DiMaggio and Powel (1983), the inclusion of these factors seems imperative to provide a comprehensible explanation in support of the adoption of new SMA techniques and change in the existing MA techniques. The details of these pressures together with their components are discussed below:

#### **4.4.2.3.1 Coercive (isomorphism) pressures**

Coercive isomorphism may result from both formal and informal pressures exerted on a particular organization by other organizations upon which they are dependent (DiMaggio and Powel, 1983). It represents the enforcing and regulative facets of specific institutions (Hussain and Gunasekaran, 2002) which have considerable influence on a particular organizational field. Coser et al. (1982) suggested a significant influence of parent company on the rules and structures of subsidiaries. They argued that it is common for subsidiaries to adopt standardized reporting mechanisms followed in the group. This finding is also consistent with the arguments of Scott (1987) which suggested that some institutional forms are sufficiently powerful to impose structural forms and/or practices on subordinate organizational units (Yazdifar and Tsamenyi, 2005). Moreover, Yazdifar and Tsamenyi (2005) attributed the presentation of management accounts by subsidiaries (or sister concerns) in formats dictated by the parent company to the relation between subsidiary and parent.

The existence of a common legal environment can affect several aspects of organizational behavior and structure (DiMaggio and Powell, 1983). Meyer and Rowan (1977) recognized the influence of rationalized states and other large rational organizations in bringing about homogenization in organizational rules and structures. They further showed how organizations are increasingly homogeneous within given domains and increasingly organized around rituals of conformity to wider institution. More importantly, organizations

have to ignore the constraints posed by technical activities and emphasize on homogeneity (DiMaggio and Powell, 1983). In line with the above views, Sedlak (1981) documented how the US Charities homogenized their structures and methods in line with the recommendation of donor agencies to ensure continuous flow of support. Hussain and Gunasekaran (2002) also recognized the influence of international donor agencies such as International Monetary Fund (IMF) and World Bank (WB) over other institutions in shaping performance measurement systems.

#### **4.4.2.3.2 Mimetic pressures**

In addition to coercive isomorphism, uncertainty is considered as a powerful source that encourages imitation (DiMaggio and Powell, 1983). When organizations face substantial uncertainty in understanding technologies and/or goals, ambiguity of environments (DiMaggio and Powell, 1983), unable to link strategy to operational activities (Fligstein, 1985; O'Neill et al., 1998) they may model themselves on other organizations (DiMaggio and Powell, 1983). This modeling (imitating rules and structure of others) may be diffused among the borrowing organizations without the knowledge of the modeled organization (considered as the successful organization in the field), sometimes by the employee transfer or turnover, or explicitly by organizations including the consulting firms and trade associations (DiMaggio and Powell, 1983). This imitation may take place to gain legitimacy for their operating environments (DiMaggio and Powell, 1983). Moreover, the borrowing organizations may be encouraged to mimetic isomorphism by either a skilled labor force or by a broad customer base (DiMaggio and Powell, 1983).

Meyer (1981) recognized that emerging nations showed greater tendency to imitate successful organizations of developed nations. In practice, organizations may model themselves after certain kind of structural arrangements which they perceive as successful or

legitimate even though such imitation may not improve efficiency (DiMaggio and Powell, 1983).

Moreover, despite considerable search for diversity there exists little variation in the organizational structures to be selected from (Kimberly, 1980; DiMaggio and Powell, 1983). Therefore, managers actively search for models upon which to build a legitimate structure (Kimberly, 1980; DiMaggio and Powell, 1983).

This modeling/imitation may cross the geographical boarder as suggested by DiMaggio and Powell (1983). In the late nineteenth century, Japanese Government tried to model their new governmental agencies to apparently successful western prototypes (DiMaggio and Powell, 1983; Westney and Piekkari, 2020). Later on, American corporations adopted Japanese models to solve their productivity and personnel problem (DiMaggio and Powell, 1983).

#### **4.4.2.3.3 Normative pressures**

Normative isomorphism stems primarily from professionalization (DiMaggio and Powell, 1983) which refers to a collective struggle of members of an occupation to recognize the conditions and methods of their work (Larson 1977; Collins, 1979; DiMaggio and Powell, 1983). These collective struggle aims to control the output (Larson 1977) and to set up a cognitive base and legitimation to ensure occupational autonomy (DiMaggio and Powell, 1983). Institutional isomorphism can stem from two aspects of professionalization: (1) formal education and (2) professional networks (DiMaggio and Powell, 1983). In addition to the effect of profession, media also plays important role in diffusing a particular form of structure across organizations (DiMaggio and Powell, 1983).

Professionals of a particular institution usually share identical definition and promulgation of normative rules on organizational and professional behavior which create a pool of interchangeable individuals occupying similar position (Perrow, 1974; DiMaggio and Powell,

1983). The filtering of these professional in a particular industry around similar layer of management encourages normative isomorphism (Kanter, 1977; DiMaggio and Powell, 1983) which is clearly evident in the comments presented above.

#### **4.4.2.3.4 Economic pressures**

Granlund and Lukka (1998) included economic pressures as the drivers of convergence of management accounting practices in addition to the three core institutional pressures (i.e., coercive, mimetic and normative) suggested by DiMaggio and Powell (1983). Following their footsteps, Hussain and Gunasekaran (2002) also studied the impact of economic factors, coercive pressures, mimetic pressures and normative pressures on the non-financial management accounting measures under the umbrella of NIS. While Granlund and Lukka (1998) included global economic fluctuations, increased competition, advanced production technology, and advanced information technology under the umbrella of economic pressures, Hussain and Gunasekaran (2002) considered competition, economic conditions, organizational characteristics, and technological advancement. Moreover, these economic pressures are considered as technical and functional in the NIS theory literature (Hussain and Gunasekaran, 2002). MAPs become adaptive in their environments at varying degrees of responsiveness in response to such economic pressures (Hussain and Gunasekaran, 2002).

In fact, following Meyer (1979) and Fennell (1980), DiMaggio and Powell (1983) suggested two types of isomorphism: (1) competitive and (2) institutional. Hannan and Freeman (1977) emphasizes on market competition as the driver of organizational isomorphism. Among others Johnson and Kaplan (1987) and Shank and Govindarajan (1993) documented the need for sophistication of MAS to meet increased competition. Moreover, Fisher (1995) and Brancato (1995) recognized competitive pressure as one of the three core reasons why firms adopt/imitate management accounting practices (MAPs) implemented by others.

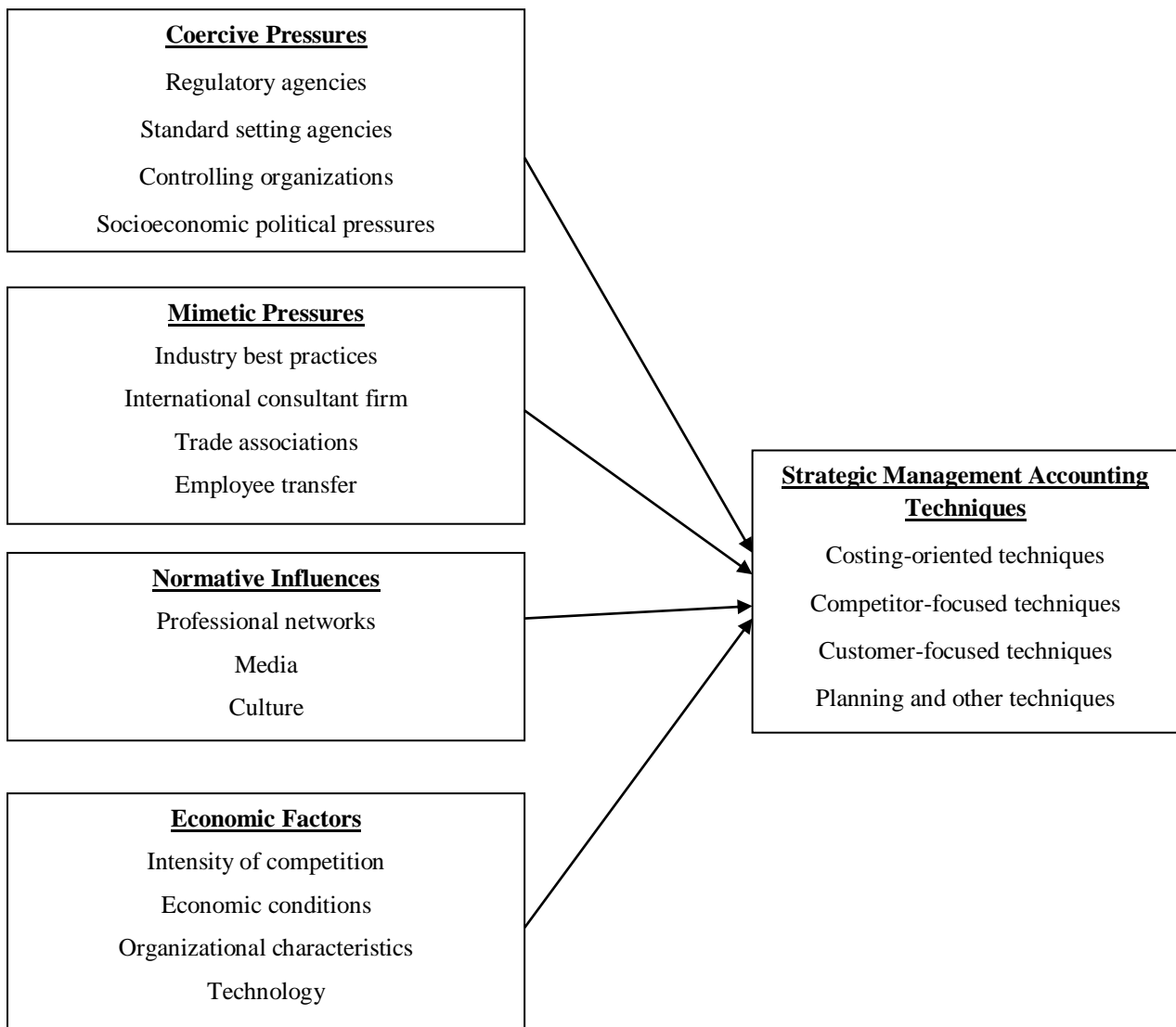


Figure 4.2 Institutional factors influencing the adoption of Strategic Management Accounting Techniques (Source: Author’s work)

The impact of technology on the imitation and adoption of MAPs is also well evidenced in the extant MA (Johnson and Kaplan, 1987; Otley, 1994) and institutional theory literature (Granlund and Lukka, 1998; Hussain and Gunasekaran, 2002). The impact of economic conditions specifically uncertain economic conditions on the adoption of MAPs is also well documented in MA literature (Chenhall and Morris, 1986; Mia and Chenhall, 1994; Modell, 1996; Chenhall, 2003). In an endeavor to trim down such uncertainty, organizations tend to copy structures and rules of successful organizations in the similar organizational fields (DiMaggio and Powell, 1983). Finally, organizational characteristics such as structures, size

and nature of activities also shape MAPs (Scott, 1987; Hoque and James, 1998; Hussain and Gunasekaran, 2002).

#### **4.4.3 Triangulation of Theories**

The use of multiple theories in understanding a particular practice in a singly study is termed as “theoretical triangulation” or “theoretical pluralism”. The benefits of using multiple theories in understanding accounting and organizational practices are well recognized in the extant literature (Ahrens and Chapman, 2006; Baxter and Chua, 2003; Modell, 2005, 2009; Shapiro and Matson, 2008; Hoque et al., 2013). Moreover, no single theory can have a monopoly on explanations of accounting and organizational practices as each theory possess a distinctive virtue, and therefore when used them collectively can add to the understanding of practices and individuals in their social, economic and cultural contexts (Feyerabend, 1990; Hopper and Hoque, 2006; Hoque et al., 2013).

Lounsbury (2008) documented evidence in support of the importance of theoretical pluralism and suggested researchers to use them to account for the diversity of actors and practice. Theoretical triangulation allows researchers to use factors from different theoretical perspectives concurrently to investigate the same dimension of a research problem (Hoque and Hopper, 1997; Hopper and Hoque, 2006; Hoque et al., 2013). Moreover, when a researcher chooses to use a particular theory in explaining an organizational practice, he/she faces considerable barriers as there is little consensus as to which theoretical perspectives can be best suited to that particular practice (Pfeffer, 1993; Weick, 1995; Hoque et al., 2013). Therefore, theoretical triangulation can provide better explanation of the accountant’s practices in the economic, social and cultural context where they function.

## **4.5 Chapter summary**

This chapter outlined the theoretical framework used in explaining what factors affect the adoption of SMA techniques and how this adoption process is influenced by the institutional and economic pressures in the Bangladeshi companies. Initially, this chapter discussed the fundamentals of theories used in the extant management accounting and SMA literature. Afterwards, the focus is shifted to explaining specific elements of internal/organizational contingencies that can have an effect on the adoption decision. Additionally, the external/environmental contingencies are also included in the contingency framework to provide a holistic view of the organizational factors affecting the SMA adoption decision. Eventually, the focus is shifted to institutional pressures that cause imitation in an organizational field. A detailed discussion of each of the institutional pressures is provided before the development of the institutional framework to be used in explaining the changes in MAPs over time. A number of constituents of economic pressures are also included in the theoretical framework to cover the factors beyond the institutional pressures. Finally, the arguments for theoretical triangulation are provided at the end of chapter.

The next chapter discusses the research methodology adopted to accomplish the objectives of the study. Starting with research paradigm, the discussion covers study period, sampling technique, sources of data, data collection procedures, variables and model definitions and finally the analysis tools used to explain the results.

## **Chapter Five**

### **Research Methodology**

#### **5.1 Introduction**

This chapter presents the research methodology used for this thesis. In essence, this chapter discusses the philosophical perspectives and methodological approaches taken for the present thesis. Creswell (2012) emphasizes on clarifying the approach to be taken for the thesis to explore the topic of the study in more detail. Collis and Hussey (2003) stress the importance of determining philosophical stand before formulating research design. Consequently, this chapter starts with the research paradigm (also known as philosophical perspectives) adopted, specifically the ontological and epistemological assumptions of the present thesis. The focus is then shifted to the details of methodology adopted including the nature of data to be collected, data collection approaches and tools to be used, analytical tools employed, and finally definitions of variables to be included in the models.

#### **5.2 Research Paradigm**

This study aims to explore what contingencies affect the adoption decision of a package of SMA practices in the listed public limited companies in Bangladesh. Additionally, this study explores why and how institutional and economic forces drive changes in the management accounting system (MAS), with special focus on the shift from traditional MAPs to SMA practices. To accomplish these objectives, this study adopts pragmatic paradigm on the ground that this paradigm allows researcher to employ whatever philosophical and/or methodological approach that works best for the particular research program which is being studied (Tashakkori et al., 1998).



The advocates of this paradigm suggested an end of the paradigm wars, and argued that the conflicting paradigms (positivist and anti-positivist) have achieved a state of coexistence (Tashakkori et al., 1998; Goles and Hirschheim, 2000). Datta (1994) presents several arguments in favor of this assertion including their long presence, increasing use of multiple paradigms and methods, and influence of both paradigms on policies. This paradigmatic coexistence has abetted the emergence of a fresh perspective in research which is grounded in the philosophical school as 'pragmatism' (Goles and Hirschheim, 2000). According to this paradigm, researchers can use whatever philosophical and/or methodological approach that works best for the particular research program which is being studied (Tashakkori et al., 1998). Goles and Hirschheim (2000) recommend pragmatism as a vehicle for moving towards a more balanced stream of research. To a pragmatist, values are relevant and important only insofar as they influence what to research and how to conduct it (Goles and Hirschheim, 2000). Accordingly, guided by their personal value systems, pragmatists decide what they want to research (Tashakkori et al., 1998). Moreover, the approach of studying the topic of research is congruent with their value system, including variables and unit of analysis they perceive appropriate for finding an answer to their research question (Tashakkori et al., 1998). Pragmatists believe that the reality and the world are not static, and are changed through actions (Kaushik and Walsh, 2019). Actions are pivotal in pragmatism (Maxcy, 2003; Morgan, 2014a) as actions are the way to change existence (Kaushik and Walsh, 2019). Morgan (2014b, p.1049) commented that "pragmatism acts as a new paradigm to replace an older way of thinking about the differences between approaches to research by treating those differences as social contexts for inquiry as a form of social action, rather than as abstract philosophical systems". However, this leads to the criticism on the ground of ontological and epistemological assumptions. For example, Lincoln (2010, p.7) complains that "the mixed-method pragmatists tell us nothing about their ontology or epistemology". In this sense,

pragmatism presents a radical departure from ancient philosophical arguments about the nature of reality and the possibility of truth (Morgan, 2014b). However, Hall (2013) argues that pragmatism offers an alternative epistemology wherein knowledge consists of warranted assertions (Dewey, 2008) resulting from taking action and experiencing the outcomes (Morgan, 2014b).

As the present study employs mixed method research, pragmatism appears to be the appropriate paradigm considering the recommendations of several researchers (Maxcy, 2003; Creswell and Clarke, 2017; Morgan, 2014a). Based on the foregoing discussion, it can be held that the prime focus of this paradigm is on the consequences of research and research questions rather than on the methods (Kaushik and Walsh, 2019). Whereas positivist research can provide explanations of accounting phenomena, interpretivist addresses the multiplicity of other factors that may affect the outcomes (Bisman, 2010; Lorenz, 2015). Prior researches (e.g., Gioia and Pitri, 1990; Atkinson et al., 1997; Bisman, 2010) also argued that the use of one paradigm alone in empirical research may produce a narrow and incomplete view of the social world, and therefore they suggest a multi-paradigm and multi-method approach in conducting empirical research specifically in management accounting (Atkinson et al., 1997). Considering these benefits of triangulation of paradigms, the current study adopts pragmatic paradigm. Moreover, this paradigm allows designing the research based on quantitative work to be followed by qualitative work to make the findings of quantitative work more robust and reliable.

### **5.3 Research methodology adopted in this study**

#### **5.3.1 Study period**

The survey data were collected for the period starting from 4th April 2019 to December 21st 2019. The underlying reason for such longer period is that the culture of responding through

email has not been developed in the corporate sectors of Bangladesh as it is seen in the developed economies such as Europe and USA (Rashid, 2009). Companies in Bangladesh are not willing to disclose information that is not available publicly (Rashid, 2009). Consequently, questionnaire survey data (79 out of 83) were collected through physical visit to the companies' premises. In the second stage of the data collection, twenty (20) in-depth interviews were conducted from 2nd January 2020 to 25th February 2020. These interviews were taped using mobile device.

### **5.3.2 Sample of the study**

#### **5.3.2.1 Sample for the questionnaire survey**

A sample is a subset of the population (Sekaran, 2003) and should well represent the population to generalize results from the sample to the population (Creswell, 2012). Selecting appropriate sample involves three steps: defining the population, selecting the target population or sampling frame and then finalizing the sample (Creswell, 2012). With respect to the population, this study focuses only on the public limited companies listed with Dhaka Stock Exchange (DSE).

The underlying logic behind the selection of listed public limited companies is that these companies, as per Bangladesh Securities and Exchange Commission (BSEC) Rules, are obliged to disclose governance, performance, and several other useful information publicly required to measure several variables of the present study. Moreover, it is well established that publicly traded companies are more open to share information either to convince several of their stakeholders or to comply with several rules or both.

Additionally, the substantial volume of market capitalization to GDP ratio (28.241%) (World Bank, 2020b), further enhances the importance of these companies in the economy of Bangladesh. Consequently, publicly traded companies become an important part of the

economy of Bangladesh and have to perform well to contribute substantially to the process of transforming the country from an emerging to a developed economy. This motivates the present study to concentrate on companies listed with the Dhaka stock exchange as the population of the study. There are 578 securities (311 companies) listed with DSE under 22 categories (DSE, 2019). However, Treasury bonds (221), mutual funds (37), debenture (8) and corporate bond (1) are not relevant for the present study as SMA practices are not relevant for these companies. Consequently, the true population becomes 311 companies.

In selecting the target population or sampling frame from these 311 companies, 47 insurance companies are excluded on the ground that their annual reports do not contain information required to measure several variables (e.g., ROA, TOBINQ, and ROE) of the study. This exclusion trims down the target population from 311 to 264 (311 minus 47). Easterby-Smith et al. (2002) suggest to employ a census sample (a practice of including all respondents of population) when the population size is less than 500. Accordingly, the present study attempts to collect data from all these 264 companies by sending questionnaire through email. Surprisingly, despite the several reminders through email (Google form and separate MS word file) and text message (containing the request to respond and the link address of questionnaire), only four (4) responses were received. Taking the prevailing corporate culture of responding through email into account, a direct phone call request to respondents were made to get their appointment at their office or whatever place they perceive convenient.

Table 5.1: Sample selection procedure

Particulars	Number (As on 31 December 2018)
Total number of companies listed in DSE	311
Less: Companies (Insurance) not disclose information required to measure several variables of the study	47
Target population	264
Companies denied to respond to questionnaire	181
Final sample size (83/311=26.69% of population and 83/264=31.44% of target population)	83

A nine-month (April 2019 to December, 2019) physical visit results in a total of 83 usable questionnaires from both manufacturing and non-manufacturing sectors. Table 5.2 (below) provides details on these sample and population percentage.

Table 5.2: Industry classification of the sample companies as per DSE

Industry	DSE sector wise categorizations	Total	Sample (% of respective population)	As % of total sample
Manufacturing	Cement	7	3 (42.85%)	3.62%
	Ceramics	5	1 (20%)	1.20%
	Engineering	39	8 (20.51%)	9.64%
	Food and allied	17	2 (11.76%)	2.41%
	Fuel and power	19	8 (42.11%)	9.65%
	IT sector	10	1 (10%)	1.20%
	Paper and printing	3	0	0
	Pharmaceuticals and chemicals	32	13 (40.63%)	15.66%
	Tannery	6	0	0
	Textiles	49	11 (22.45%)	13.25%
	Miscellaneous	13	4 (30.77%)	4.82%
	<b>Sub-total</b>	<b>200</b>	<b>51 (25.50%)</b>	<b>61.45%</b>
Non-manufacturing (Service and other companies)	Bank	30	21 (70%)	25.30%
	Financial institutions	23	10 (43.48%)	12.05%
	Service and real estate	4	0	0
	Telecommunication	2	1 (50%)	1.20%
	Travel and leisure	5	0	0
	<b>Sub-total</b>	<b>64</b>	<b>32 (50%)</b>	<b>38.55%</b>
<b>Total</b>		<b>264</b>	<b>83 (31.44%)</b>	<b>83 (100%)</b>

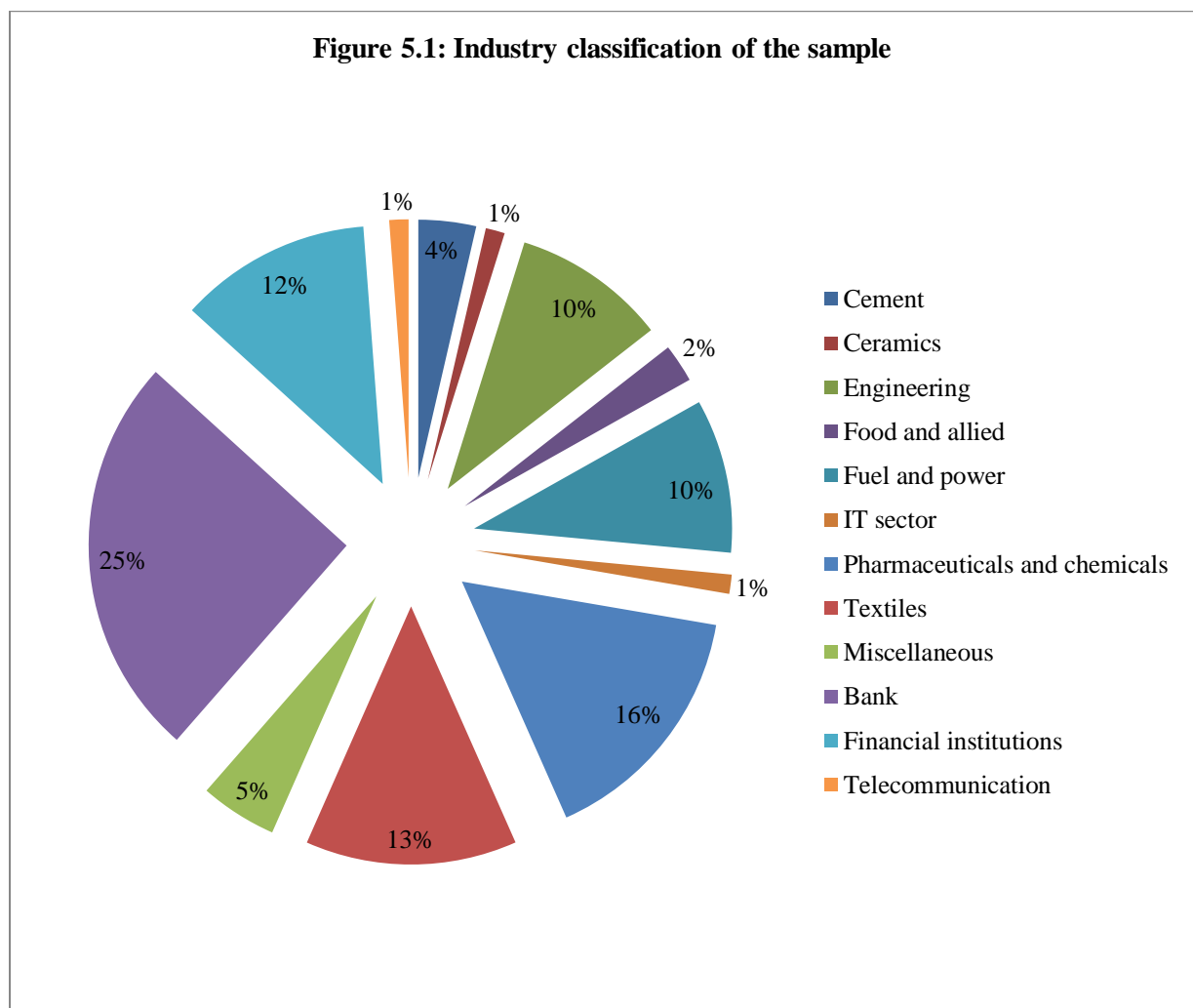
**Note:** Sample size= 83, manufacturing 51/83=61.44% and non-manufacturing 32/83=38.56%. The sample excluded 47 insurance companies from 311 listed companies on the ground that their annual reports do not contain information required to measure several variables (e.g., ROA, TOBINQ, and ROE) of the study.

As can be seen in the Table 5.2, there are 264 companies operating under two sectors manufacturing and non-manufacturing. Of these 264 companies, 200 companies are operating under manufacturing industry (200/264=75.76%) and the rest of the companies (64 or 64/264=24.24%) belongs to the non-manufacturing category. This indicates a clear dominance of manufacturing companies over their counterpart in terms of the number of

entities. Identical to picture of the population size, the dominance of manufacturing companies is also apparent in the sample companies.

More specifically, the final sample includes 51 companies from the manufacturing companies (51/83=61.44%) and 32 companies from non-manufacturing category (32/83=38.56%).

Figure 5.1 presents the industry classification of the sample. As can be seen in the figure, the highest proportion of companies are from the banking sector (25%) followed by pharmaceuticals and chemical companies (16%), textile companies (13%), and non-bank financial institutions (NBFI) (12%). Ceramics, IT and telecommunication companies have insignificant (1% each) participation in the sample.



### **5.3.2.2 Sample for the interview**

The present study applies purposive sampling in selecting the appropriate respondents to fulfill the research objectives on hand. Purposive sampling, also known as judgment sampling, is the deliberate choice of respondent due to the qualities of the respondent possesses (Etikan et al., 2016). This is a kind of nonrandom sampling where the researchers decide what needs to be known and finds respondents who can and are willing to supply the information by virtue of knowledge or experience (Bernard, 2002; Etikan et al., 2016). It is used to select respondents that are more likely to yield appropriate and useful information (Kelly, 2010) on the ground that this specific kind of people hold different and important views about the ideas and issues at question, and therefore needs to be included in the final sample of the study (Mason, 2002; Robinson, 2014; Campbell et al., 2020). A relatively small and purposively selected sample may be employed in a qualitative study (Miles and Huberman, 1994) to enhance the depth of understanding on the subject on hand (Palinkas et al., 2015; Campbell et al., 2020).

As this study seeks to understand why and how management accounting practices change over time, an in-depth understanding of such practices seems to be inevitable. It is widely believed that Certified Management Accountants (CMA), known as Cost and Management Accountants in Bangladesh, have rigorous knowledge on management accounting systems (MAS) acquired through formal education imparted by the professional body (The Institute of Cost Accountants of Bangladesh) and continuous professional development (CPD) arranged by the institute in the forms of seminars, workshop and trainings.

Additional care is taken to ensure representation from majority of the sectors covered in the first stage of the research. Furthermore, a portfolio of companies comprises of largest, medium and smallest in terms of total assets was created in the case when several companies are taken from a particular industry (such as bank, NBFIs, textile, and pharmaceuticals). This

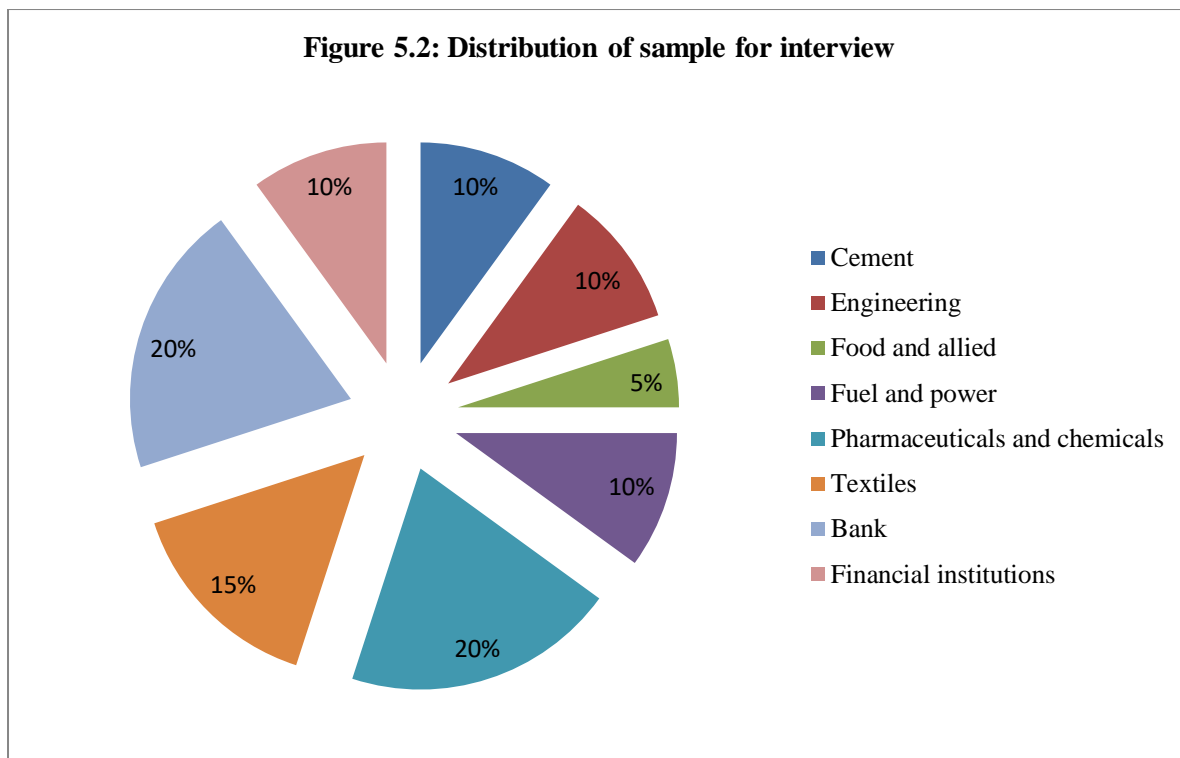
task is expected to generate more vigilant pictures of MAC change over time in the sample companies. Table 5.3 shows the distribution of sample companies for the interview. As can be seen in the Table, the highest number of interviews were conducted in the banking (4 or 20%), pharmaceuticals (4 or 20%) and textiles companies (3 or 15%) respectively. This proportion is consistent with the first stage of data collection as it was depicted in Table 5.2 (banking 25%, pharmaceuticals 16% and textile 13%). 70% (14 of 20) of the interview was conducted in the manufacturing companies considering their dominance in both the population (200 of 264) and sample (51 of 83).

Table 5.3: Industry classification of the sample companies for interview survey

Industry	DSE sector wise categorizations	Sample	As % of total sample
Manufacturing	Cement	2	10%
	Engineering	2	10%
	Food and allied	1	5%
	Fuel and power	2	10%
	Pharmaceuticals and chemicals	4	20%
	Textiles	3	15%
<b>Sub-total</b>		<b>14</b>	<b>70%</b>
Non-manufacturing (Service and other companies)	Bank	4	20%
	Financial institutions	2	10%
<b>Sub-total</b>		<b>6</b>	<b>30%</b>
<b>Total</b>		<b>20</b>	<b>20 (100%)</b>

**Figure 5.2** also shows the distribution of the sample companies in a pie diagram for the ease of understanding. Surprisingly, respondents from ceramics, IT and telecommunication companies denied to take part in the interview survey. However, this does not considerably affect the representativeness of the sample as they have insignificant stake in both the population and sample.





### 5.3.3 Sources of data and respondents

Based on the availability, data required to conduct research can be categorized into (i) primary data, and (ii) secondary data. Primary data are original data collected by the researcher through survey or experiment to meet the research objectives (Collis and Hussey, 2003). In contrast, secondary data are data that are available publicly and have already been collected and/or processed by others. These data can be collected from a variety of sources including published books, journals, surveys, statistics, annual reports, and internet and so on. Data collected and used in the first stage through questionnaire survey and interview (in the second stage) are essentially primary in nature. As this is a mixed method research, both quantitative and qualitative data have been gathered to meet the research objectives. Quantitative data have been gathered using structured questionnaire from the 83 sample companies. Appendix 2 contains the structured questionnaire which basically focused on the adoption status using 7-point Likert-scale from 'not at all' to 'to a greater extent' (Guilding et al., 2000; Cadez and Guilding, 2008; Cinquini and Tenucci, 2010; Hadid and Al-Sayed,

2021) of 17 SMA techniques (section 3) in the sample companies. In addition to the adoption status, the apparent benefits enjoyed from the use of specific techniques and the respondents' intention to place future emphasis on specific SMA techniques is also included in the questionnaire (section 3). Section 1 of the questionnaire includes the general introduction of the thesis and the respondents' demographic profile including the age, gender, education, experience and organizational designation. Part 1 of section 2 asks for general information about the responding company including its name, number of employees, nature of business, number of professional accountants working, and the number of staff working under management accounting division (if any). Part 2 of section 2 ask for internal organizational characteristics data such as the type of strategy followed (strategic pattern, position and mission), firm structure (degree of centralization and structuring of activities), organizational culture (power distance, collectivism, career focus and attitude toward uncertainty avoidance), process characteristics (complexity, task uncertainty and interdependence), and the use of advanced technology in operation. This section also asks for data on external organizational characteristics or the external environment (environmental uncertainty, hostility, complexity, diversity and institutional pressures) under which the company is being operated. These data are required to examine their association with the extent of SMA usage. Finally, the ending part of the questionnaire ask for the perception of the respondent with respect to their company performance in the industry in terms of return on assets (ROA), margin, capacity utilization, customer satisfaction and product/service quality (using 5-point Likert-scale from 'above average' to 'below average'). At the end of the questionnaire, a glossary of the selected 17 SMA techniques is also provided for the ease of understanding of the respondents.

The use of secondary data is extremely rare in this thesis. In the first stage, only firm (observed) performance data are collected using secondary source of data. These data include

ROA, return on equity (ROE), Tobin's Q ratio and market to book (MTB) ratio. ROA and ROE is computed using the published financial statement data, whereas Tobin's Q ratio and MTB ratio are computed using both financial statement and capital market (DSE) data.

In the second stage of data collection, twenty (20) in-depth interviews were conducted to learn about what drives changes in the MAS over time. Appendix 3 provides detailed on the questionnaire of interview survey. The questionnaire basically focuses on the institutional pressures (coercive, mimetic and normative) that drive changes in the existing MAS or SMA practices. Additionally, what and how the internal organizational factors (e.g., structure, size, policies, operating technology), and external/environmental factors (e.g., intensity of competition, economic conditions of the country, advancement in operating technology and IT) shape the MAS also investigated. Furthermore, the motivators, catalyst, and facilitators that drive changes in the existing MAS over time were also received attention to get more insights into the change process. The role of various agents as initiator, implementer and put into action are important in studying the MAC change, therefore these issues were considered in the interview questionnaire. Specifically, who and how propose the change, who and how approve the change, who and how take part in the implementation process, the resistances faced in the approval and implementation of change get special attention in the interview questionnaire. Finally, the effect of change on various aspects of information and decision quality and performance were also asked to the respondents.

With respect to the selection of appropriate respondent, the present study attempts to contact first with the 'management accountant' of the respective company. However, such a designation is rarely available in the corporate sector in Bangladesh. As an alternative to 'management accountant', this study contacts the individual holding the designation of 'Chief Financial Officer' or 'Head of Accounts and Finance' or 'Head of Finance', or 'General Manager-Accounts and Finance'. Considering the technical nature of the subject matter

(strategic management accounting techniques) of the present study, individuals having formal education in cost and management accounting are given priority even though they hold different designation such as CEO, Managing Director, Head of Internal Audit, Deputy Managing Director, Executive Director, Deputy General Manager etc. The underlying reason for such selection is that they are familiar with majority of the SMA techniques considered in the present study. Moreover, individual with formal education in cost and management accounting are expected to assign with the responsibility to design, develop, implementation and usage of SMA techniques in their workplace. Appendix 4 presents the details of interview survey including the type of company, position, education and year of experience, and the duration of each interview.

### **5.3.4 Data collection procedure**

#### **5.3.4.1 Questionnaire survey**

The questionnaire was sent to all of the target respondents through email. However, before sending the final questionnaire, a pilot test was conducted among five knowledgeable (having professional degree on cost and management accounting and long working experience dealing with cost management issue) respondents to make the questionnaire more clear, concise, straightforward and easily understandable. Receiving the insightful comments from these respondents, the questionnaire was then modified and finalized for sending to the target respondents. The email addresses of the target respondents were collected using the member directory of The Institute of Cost and Management Accountants of Bangladesh (ICMAB) and the website of the respective companies. The email contains: (1) a gentle and formal request to respond, (2) a link to go to Google form to fill up the questionnaire, and (3) a soft copy (MS word file) of the questionnaire. A gentle notification requesting to fill up the questionnaire were also sent through text message immediately following the email.

Surprisingly, no responses were received within the first week of the email. Then, a gentle reminder along with the original email was sent through both email and text message. Only three responses were received after waiting for a month. The low response rate might be caused by three critical facts. First, the unwillingness of the corporate people (hereby culture) to share internal information. Second, the technical nature of the subject of questionnaire adds to the non-response rate. And third, the eight (8) pages long question need substantial time to fill up the questionnaire. Taking into accounts the experience of the previous researchers such as Rashid (2009), it was decided to physically visit the office premise of the respondents. Then, a direct phone call was made to the respondents to get their appointment at their convenient time and place. An observable and great benefit of face-to-face data collection, according to many of the respondents, was that the chance of misunderstanding the questions and misleading responses were considerably reduced. The membership of ICMAB provided the researcher a great advantage to reach the respondents using the strong bondage and network of the ICMAB communities. A nine-month (April to December, 2019) physical visit resulted in a total of eighty three (83) usable responses for this study. As depicted in the preceding section (Figure 5.1), these 83 companies represent majority of the sectors of DSE listed companies.

#### **5.3.4.2 Interview**

Using the following two weeks to input the collected data and preliminary analysis of regression, an interview questionnaire was developed to learn about why and how the changes in the management accounting practices over time take place in the selected Bangladeshi companies. To conduct the interview survey, a portfolio of respondents was created using purposive sampling (see section ‘5.3.2.2 Sample for the interview survey’ above for details) to ensure the representativeness of the sample and the quality of responses

received. A direct phone call was made to get the appointment of the target respondents (who have formal education on cost and management accounting and rigorous or handy knowledge on MAS). Visiting the respondent's office premise as per appointment, a hard copy of questionnaire is given to the respondent to avoid the problem of miscommunication caused by solely verbal communication. Then, the respondent is asked for the permission to tape/record the response using mobile phone recorder application. A two-month physical visit resulted in a total of twenty (20) usable responses to meet the research objectives on hand. These twenty companies include companies from manufacturing, non-manufacturing, government owned enterprises, from CEO, CFO to assistant general manager, from male to female to ensure better representativeness of the population. Accordingly, these 20 responses are taken as adequate on the ground of the representation and satisfaction of the needs of the research.

### **5.3.5 Methods of data analysis**

Quantitative data collected in the first stage are analyzed using various statistical tools such as descriptive statistics, correlation and regression. In contrast, qualitative data gathered through interview survey in the second stage have been analyzed through categorization and unitizing, and frequency counting by quantifying the qualitative data. The details of each method are discussed in the following sub-sections.

#### **5.3.5.1 Quantitative data analysis**

The types of data (nominal, ordinal, interval, and ratio) guide the researcher to choose whether parametric (e.g., mean, standard deviation, correlation, regression) or non-parametric (e.g., chi-square test) inferential statistics should be used in analyzing quantitative data (Leftesi, 2008). For parametric tests to run, the data set used should have the characteristics

of interval or ratio level data. Majority of the data (quantitative) collected in the first stage through questionnaire survey in this research are measured through ordinal Likert scaling. In the field of MA research, there exists several instances where famous and influential researchers (e.g., Gosselin, 1997; Askarany and Smith, 2004; Brown et al., 2004; O'Connor et al., 2004; Al-Omiri and Drury, 2007; Leftesi, 2008) have employed parametric tests such as regression in analyzing ordinal data. However, the most important assumption of employing parametric test with ordinal data is that the data distribution should have the characteristics of a normal distribution. Chapter 7 provides detailed results along with figures on the test of the assumptions of normality which shows that the data set of the present research is fairly normal.

#### **5.3.5.1.1 Descriptive statistics**

The first objective of this research was to explore what SMA techniques are being currently practiced in the Bangladeshi listed companies. To achieve this objective, a number of descriptive statistical tools have been employed. Descriptive statistics can indicate the general tendencies in the data and the spread of scores derived from the use of the data (Creswell, 2012). More specifically, mean, median, range, and standard deviation are used to analyze the extent of adoption of the selected SMA techniques (see Chapter Six). In order to provide a more vigilant picture of the SMA practices, such descriptive statistics results have been presented for the entire sample as well as for the industry wise. Moreover, such results for SMA practices as a package and for a specific group of techniques have been presented separately to get meaningful insight. Percent and frequency are used to analyze the respondents' demographic profile and sample company's characteristics data.

#### **5.3.5.1.2 Correlation and regression**

The central research objective (RO2) was to explore what contingent factors affect the decision to adopt a package or a group of SMA techniques. OLS regression analysis is carried out from a number of perspectives to meet this research objective. To be specific, the effect of each group of contingent factors (e.g., environmental uncertainty or environmental hostility or process characteristics) is analyzed separately in the earlier stage of regression analysis (basically to test the hypotheses). Then, the effect of all the contingencies in a single regression model is examined in the later stage of the regression analysis (to explain the variance in the SMA practices caused by the contingencies studied). In both the stages, the effect of contingencies on both SMA as a package and as a specific group of techniques is examined to get more insights into the subject. Moreover, industry wise regression is also provided to isolate which factors are more robust in which industries.

Another research objective (RO3) was to examine the effect of adoption of SMA practices on several facets of performance. To meet this objective, perceived firm performance is employed as the dependent variable in the first model and then observed firm performance is used in second model. In both the model, the extent of SMA practices is used as the main independent variable. Correlation analysis is conducted to learn about to what extent the independent variables are correlated each other and also with the dependent variable.

#### **5.3.5.1.3 Validity and reliability analysis**

As this research employed OLS regression to test the hypotheses using ordinal data, several assumptions of OLS regression must be met to validate the findings of the analysis. The six assumptions of OLS are: linearity of relationship between independent and dependent variables, absence of multicollinearity, the independence of the values of the residuals, the absence of heteroscedasticity (or the variance of the residuals should be constant), normality



of distribution, and finally there should be no influential cases that could bias the models. Moreover, to use the ordinal data as interval data, the distribution of data must have the normality characteristics.

### **5.3.5.2 Qualitative data analysis**

There is no single, accepted method to analyzing qualitative data (Dey, 1993; Collis and Hussey, 2003; Saunders et al., 2007; Creswell, 2012). However, there exist several guidelines for this process (Dey, 1993; Miles and Huberman, 1994) such as quantifying the qualitative data to calculate frequency, categorization, and unitizing the data (Collis and Hussey, 2003; Saunders et al., 2007; Creswell, 2012). Creswell (2012) suggested this process as eclectic process. Consequently, this research employs a number of methods to analyze qualitative data collected through in-depth interview. These methods basically include quantifying the data to find the frequency and coding the data to develop themes.

The present study requested respondents to record the interview, and with their consent the entire interview was recorded using mobile phone recorder application. In addition to this recording, a hard copy of the questionnaire was given to the respondents if they wish to make any written comment. On completion of the interview, the recorded words were transcribed to facilitate further analysis. Afterwards, the Bengali portions of the speeches were translated into English. The accuracy of the translation was cross checked employing appropriate tools and experts. Finally, thematic analysis is conducted to identify and analyze the patterns of meaning in the data set (Braun and Clarke, 2006). Using thematic analysis, researcher can generate codes (the smallest unit of analysis that capture interesting features of the data relevant to the research question, and are taken as the building blocks for themes) and themes from qualitative data (Clarke and Braun, 2014). As themes provide a framework for organizing and reporting the researcher's analytical observations, it allows researchers to

identify and interpret key features of the data guided by the research question (Clarke and Braun, 2014). Accordingly, this study has analyzed the themes from the interview data and present comments of the respondents wherever appropriate and justify from a theoretical ground.

### **5.3.6 Variable definition**

To achieve several of the research objectives (specifically RO-2 and RO-3), a number of hypotheses needs to be formulated and tested. A precise definition and measurement of the variables used in the regression models for hypotheses testing seem appropriate to provide unambiguous understanding of the output of the research. This section focuses separately on the definition and measurement issues of the variables (dependent, independent and control) used in the regression models in Chapter 7.

#### **5.3.6.1 Dependent variables**

##### **5.3.6.1.1 Strategic Management Accounting Techniques Usage**

Chapter 2 was dedicated to provide an overview of the selected 17 SMA techniques including the definition, emergence and the criteria used to isolate SMA techniques from traditional MA techniques. MAC techniques that have external and long-term orientation and use non-financial data are recognized as SMA techniques. The selected 17 techniques were categorized under four groups: costing, competitor, customer and other SMA techniques. Guilding et al. (2000) was the pioneer to offer international evidence on the extent of SMA usage. They measured the extent of SMA usage by asking respondent the question ‘To what extent does your organization use the following practices?’ (Guilding et al., 2000, p.122). Immediately following the question, the list of selected SMA techniques were provided. Next to each technique, they provided Likert scale ranging from ‘1’ (‘not at all’) to ‘7’ (‘to a great

extent’). The identical approach was followed in a number of subsequent studies including Cravens and Guilding (2001), Cadez and Guilding (2007, 2008), and Cinquini and Tenucci (2010). Consistent with these prior studies, the present research measures the extent of ‘SMA usage’ by asking the same question ‘To what extent does your organization use the following practices?’. Following this question, the list of 17 SMA techniques was provided (along with the glossary of each technique). Also next to each question, a 7-point Likert scale ranging from “1” (not at all) to “7” (to a great extent) was provided. The mean of responses for the techniques included in each category (costing, competitor, customer and other techniques) as well as a single score for all the techniques was calculated to measure the extent of SMA usage. Additionally, the mean score of each of the selected SMA techniques was also calculated to compare their relative importance.

Table 5.4: Definition and measurement of SMA usage variables

<b>Variable</b>	<b>Description</b>
SMAUSE	Strategic management accounting usage, measurement of the usage of the selected 17 SMA techniques as a single score
COSTING	Costing-based SMA techniques usage, measurement of the usage of the seven costing-based SMA techniques (ABC, attribute costing, life cycle costing, quality costing, strategic costing, target costing, and value chain costing) as a single score
COMPETITOR	Competitor-focused SMA techniques usage, measurement of the usage of the three competitor-focused SMA techniques (competitor cost assessment, competitive position monitoring and competitor performance appraisal based on financial statements) as a single score
CUSTOMER	Customer-focused SMA techniques usage, measurement of the usage of the three customer-focused SMA techniques (customer profitability analysis, lifetime customer profitability analysis and valuation of customers as assets) as a single score
OTHER	Other SMA techniques usage, measurement of the usage of the remaining four SMA techniques (benchmarking, brand valuation, BSC/IPM and strategic pricing) as a single score

### **5.3.6.1.2 Firm Performance variables**

The consequence of SMA usage on performance has been analyzed from two different perspectives: perceived performance and observed performance. In measuring perceived firm

performance, prior studies (e.g., Hoque and James, 2000; Cadez and Guilding, 2008) employed a number of dimensions of performance. For example, Hoque and James (2000) employed five dimensions (return on investment, margin on sales, capacity utilization, customer satisfaction, and product quality) whereas Cadez and Guilding (2008) employed seven dimensions of performance by adding development of new products and market share to the measures developed by Hoque and James (2000). The present research adopted the five dimensions developed and employed by Hoque and James (2000). Respondents were asked to indicate their company's performance relative to their competitors for each of these five dimensions using five-point Likert scale ranging from "1" (below average) to "5" (above average).

As there is no consensus on what constitute appropriate measures of firm performance (Daily and Dalton, 1993; Johnson et al., 1996), the use of multiple indicators seems to be more acceptable (Daily and Dalton, 1993). Consequently, in measuring observed firm performance, the use of both accounting-based (e.g., ROA, ROE) and market-based (e.g., TOBINQ, MTB ratio) performance measures have attracted the attention of many researchers (Kesner, 1987; Al Farooque et al., 2007; Rashid, 2020b). Despite the heavy reliance on historical financial statements data, return on assets (ROA) and return on equity (ROE) are still employed to facilitate intra-firm and inter-firm comparison by financial analysts and to compare the results with several prior studies by researchers. Moreover, market-based performance measures may not be effective in the developing and emerging economies on the grounds that the capital market in such economies are not well developed and efficient (Khanna and Palepu, 2000; Joh, 2003) in protecting the investor's right (Claessens and Djankov, 1999). Return on assets (ROA) is calculated by dividing net income after tax by the book value of total assets and expressed as a percentage (Bose et al., 2017; Yeh, 2019). Return on equity (ROE) is

calculated by dividing the net income after tax by the book value of equity (Daily and Dalton, 1992; Kao et al., 2018).

There are some drawbacks of using accounting profits as performance. For example, it does not reflect all of the agency costs (Wiwattanakantang, 2001) and therefore can be very high even in the presence of huge agency costs (Nicholson and Kiel, 2007). They are also subject to the manipulation by management through the choice of a particular accounting method and judgments (Chow et al., 1997; Deegan, 2005). To overcome such drawbacks, the study uses two market-based performance measures: Tobin’s Q ratio and market to book ratio (MTB). Tobin’s Q is measured by book value of total assets plus the market value of equity minus the book value of equity divided by total assets (Ferreira and Matos, 2008; Bose et al., 2017). The justification of using Tobin’s Q (TOBINQ) ratio as a measure of firm’s performance lies in the facts that endogeneity concerns are less apparent in this measure as it uses external and forward looking measurer and reflects investors’ perceptions and actions on the firm’s share in the capital market (Luo and Bhattacharya, 2006; Cahan et al., 2016; Bose et al., 2017).

Table 5.5: Definition and measurement of firm performance variables

<b>Variable</b>	<b>Description</b>
PERCEIVE	Perceived firm performance, measured the five dimensions of firm performance as a single score using a five-point Likert scale ranging from “1” (below average) to “5” (above average).
ROA	Return on assets, measured as the ratio of net profit after tax to total assets
ROE	Return on equity, measured as the ratio of net profit after tax to year-end book value of equity
TOBINQ	Market-based firm performance, measured by book value of total assets plus the market value of equity minus the book value of equity divided by total assets
MTB	Market-to-book ratio, measured as the ratio of year-end market value of equity to year-end book value of equity

Market-to-book ratio (MTB) is measured as the market value of equity at the end of reporting period divided by the book value of equity at the end of reporting period (Al Farooque et al., 2007; Kao et al., 2018). Several researchers (e.g., Xu and Wang, 1999; Lemmons and Lins,

2003) suggest MTB ratio as a cleaner measure in the developing countries context, specifically as an alternative to Tobin's Q ratio (Rashid, 2009).

### **5.3.6.2 Independent Variables**

#### **5.3.6.2.1 Business strategy**

The measurement of business strategy is not an easy task considering the fact that strategy is a means of influencing the external environment, technologies and control mechanism rather than as an element of the context (Chenhall, 2003). The existence of several generic taxonomies of strategy used by prior researchers in representing strategy makes the task more complicated. Cadez and Guilding (2008) used the instrument developed by Shortell and Zajac (1990) and measured an organization's strategic orientation on a seven-point Likert scale; assign one for defender-type organization to seven for prospector-type organization. Cinquini and Tenucci (2010) used the similar approach but used a five-point Likert scale and measured two other dimensions of strategy: strategic mission and position.

Rather than adopting the approach followed in the prior studies, the present research uses a modified version of Miles and Snow (1978) in defining and measuring strategic pattern followed in the organization. This modification was made to make it convenient to the respondents to identify which pattern actually they belong to. Strategic pattern was defined as the level of aggressiveness an organization adopted in pursuing the market share and was divided into four categories: prospector (offensive marketing, quickly response to market opportunity with little research, price skimming), defenders (stable market through better quality or low cost with few offerings), analyzer (between the two extremes; expand through existing core competency), and reactor (do not respond unless forced by macro economic factors). The adoption of 'prospector' type strategy is assigned with a value of 4, 'analyzer' with a value of 3, 'defender' with a value of 2, and 'reactor' with a value of 1. The

justification of using such scoring lies in the findings of prior studies which (Guilding, 1999; Cadez and Guilding, 2008) documented that companies following prospector type strategies make greater SMA usage. Moreover, prospectors need additional environmental and market information as compared to defenders (Shortell and Zajac (1990) because of their constant role as innovators and pioneers in the market and product (Miles and Snow, 1978).

With respect to the definition and measurement of strategic position (product differentiation-cost leadership), this research developed measurement scale based on Porter's (1980, 1985) strategy typifications. Strategy is seen as the means to attain competitive advantage and is divided into three categories: product differentiator (unique product or brand, image which are difficult to copy, customers are not price-sensitive), cost leader (price-sensitive or cost-conscious customers, maintain lowest possible price and costs) and focus (segmentation or niche strategy focus on the needs of specialized target market or customers; whether differentiation or low cost depends on the needs of target markets). The adoption of 'differentiator' type strategy is assigned with a value of 3, 'focus' with a value of 2, and 'cost leader' with a value of 1. The justification of placing such weights is that prior studies (Guilding, 1999; Cinquini and Tenucci, 2010) have documented greater SMA usage in companies following product differentiation strategy as compared to their counterparts. Furthermore, differentiator companies seem to be associated with the prospector strategy as they require greater environmental and market information to develop and manufacture unique product (Langfield-Smith, 1997).

With respect to the strategic mission, a company may adopt either build (tends to boost market share and competitive advantage through creating new brand and new target with minimum certainty about their success) or hold (brings adjustment in product to maintain market share; market share is growing) or harvest strategy (tends to maximize short-term

earnings through improving or renewing the product to make more money) (Gupta and Govindarajan, 1984).

Table 5.6: Definition and measurement of business strategy variables

<b>Variable</b>	<b>Description</b>
SPATTERN	Strategic pattern, the level of aggressiveness an organization adopted in pursuing the market share, measured by assigning a value of 4 for prospector, 3 for analyzer, 2 for defender, and 1 for reactor.
SMISSION	Strategic mission, strategic plan or choice, measured by assigning a value of 4 for build, 3 for harvest, 2 for hold, and 1 for divest.
SPOSITION	Strategic position, strategy to attain competitive advantage, measured by assigning a value of 3 for differentiator, 2 for focus, and 1 for cost leader.

Companies pursuing build mission are supposed to have similar characteristics as prospector and differentiator have, and therefore suggest the need for more external environmental and market oriented non-financial information (Langfield- Smith, 1997; Chenhall, 2003; Cinquini and Tenucci, 2010). Moreover, prior studies such as Guilding (1999) and Cinquini and Tenucci (2010) documented in support of this notion that build companies make greater SMA usage than the harvest companies. Accordingly, the adoption of ‘build’ mission is assigned with a value of 4, ‘harvest’ with a value of 3, ‘hold’ with a value of 2, and ‘divest’ with a value of 1.

### **5.3.6.2.2 Organizational structures**

Organizational structure is described in the literature from a number of perspectives including the degree of centralization, standardization, formalization and configuration (Pugh et al., 1968; Pugh et al., 1969; Chenhall, 2003) and structuring of employee activities (Burns and Stalker, 1961). To the best of the researcher knowledge, these variables remained unexplored in the SMA research. Accordingly, the way of measuring organizational structures has to be developed. In this research, two dimensions of organizational structures (the degree of decentralization and the level of structuring of activities) are used to represent the variables.



Table 5.7: Definition and measurement of organizational structures variables

<b>Variable</b>	<b>Description</b>
DECENTRA	The degree of decentralization, measured by a five-point Likert scale ranging from very low (1) to very high (5).
ACTSTRUCT	The level of structuring or employees' activities, measured by a five-point Likert scale ranging from very low (1) to very high (5).

A five-point Likert scale ranging from “1” (very low) to “5” (very high) was used to measure the responding companies' degree of decentralization and structuring of activities.

### 5.3.6.2.3 Organizational cultures

There exist a number of perspectives in defining and measuring organizational culture in the literature. For example, Seymour-Smith (1986) defines culture as inherent traits such as knowledge, belief, custom, and other capabilities attained from the society. the most prominent definition of culture which has attracted majority of the researchers in the contingency-based MAC is given by Hofstede (1984) who describes cultural values as power distance, individualism vs. collectivism, uncertainty avoidance, and masculinity vs. femininity (Chenhall, 2003).

Table 5.8: Definition and measurement of organizational culture variables

<b>Variable</b>	<b>Description</b>
POWERDIST	The extent of power distance between two positions, measured by a five-point Likert scale ranging from “1” (very low) to “5” (very high).
ORGINIT	The extent of emphasizing organizational interest over personal interest, measured by a five-point Likert scale ranging from “1” (very low) to “5” (very high).
UNCERAVOID	The level of uncertainty avoidance of the employee, measured by a five-point Likert scale ranging from “1” (very low) to “5” (very high).
CAREERFOC	The extent of priority placed on career improvement over quality of personal life, measured by a five-point Likert scale ranging from “1” (very low) to “5” (very high).

The present research uses Hofstede (1984) concept of culture and measures the respondent companies' cultural values in terms of power distance (unequal allocation of power), individualism vs. collectivism (emphasizing self-interest or organizational interest),

uncertainty avoidance (prefer to rely on rules and structures), and masculinity vs. femininity (emphasis on career success or quality of personal life).

Next to each of these four components of culture, a five-point Likert scale ranging from “1” (very low) to “5” (very high) was provided to calculate the score appropriate for a company’s cultural value.

#### 5.3.6.2.4 Process characteristics

Process characteristics (technology) refer to the way in which an organization’s work processes operate or the way of transforming inputs into outputs (Chenhall, 2003). In contingency-based MAC research, several prior studies (e.g., Hirst, 1983; Brownell and Merchant, 1990; Mia and Chenhall, 1994; Abernethy and Brownell, 1997; Abdel-Kader and Luther, 2008) have investigated the effect of process characteristics on the choices of MAPs. The three elements that shape the characteristics of a process includes: (1) complexity of the process (depends on the nature of products/services offered), (2) uncertainty of the task carried out in the process, and (3) interdependence of the tasks (Chenhall, 2003). The present research uses these three components to measure the characteristics of a process. Next to each of these three components of process characteristics, a five-point Likert scale ranging from “1” (very low) to “5” (very high) was provided to allow respondents to identify their company’s process characteristics.

Table 5.9: Definition and measurement of process characteristics variables

<b>Variable</b>	<b>Description</b>
PROCESSCOM	The extent of complexity of a company’s process, measured by a five-point Likert scale ranging from “1” (very low) to “5” (very high).
TASKUNCER	The level of uncertainty in the tasks carried out, measured by a five-point Likert scale ranging from “1” (very low) to “5” (very high).
INTERDEPEND	The degree of interdependence between the tasks in a process, measured by a five-point Likert scale ranging from “1” (very low) to “5” (very high).

#### **5.3.6.2.5 Other internal organizational variables**

Prior studies on contingency-based MA research have also examined the effect of some other internal organizational variables such as the use of advanced technology in operations (Young and Selto, 1991; Chenhall, 2003), accountant's participation in strategic decision process and market orientation (Cadez and Guilding, 2008). The present research also examined the effect of these variables on the adoption of SMA techniques. To measure the extent of the use of advanced technology in operation, this study considers the use of computer aided design, robotics, automated material handling, and integration of manufacturing process as the representation of the use of advanced technology in operation. For the other two items (accountant's participation in strategic decision and market orientation), respondents are asked to assign a value between 1 and 5 that best represent their companies' standing with respect to these items. More specifically, next to each of these three variables, a five-point Likert scale ranging from "1" (very low) to "5" (very high) was provided to allow respondents to identify their company's position in respect of these variables.

In addition to these variables, the present study attempts to examine the effect of the presence of certified management accountant or cost and management accountant (CMA) on the usage rate of SMA techniques. Professional accountants hold expertise knowledge on financial reporting and management accounting system thanks to the highly standardized and updated curriculum of professional accounting bodies and continuous professional development (CPD) training (IFAC, 2013; Jui and Wong, 2013; Rashid, 2020). More specifically, certified management accountants (known as cost and management accountants in Bangladesh) are expected to have expertise knowledge on MCS such as SMA since the syllabus of both the Certified Institute of Management Accountants (CIMA) and the Institute of Cost and Management Accountants of Bangladesh (ICMAB) includes several courses on MAPs and

SMA. Additionally, these institutes arrange CPD in the forms of workshop, seminar, and training that provides in-depth and practical knowledge on several SMA techniques. However, contingency-based research in MCS did not deal with the presence of cost and management accountants on the adoption of a particular or a package of MAPs, and therefore the definition and measurement of this variable does not exist in the present literature. In the present research, the presence of CMA is defined as the existence of the member of the ICMAB, CIMA or any other equivalent cost and management accounting bodies across the world (e.g., Institute of Management Accountant in the USA), and is measured by the number of members of such professional accounting bodies working in a particular company.

Table 5.10: Definition and measurement of other organizational variables

<b>Variable</b>	<b>Description</b>
MARKETORI	The degree of market orientation, measured by a five-point Likert scale ranging from “1” (very low) to “5” (very high).
ADVTECHNO	The extent of the use of advanced technology in operation, measured by a five-point Likert scale ranging from “1” (very low) to “5” (very high).
ACCTPART	The extent of accountants’ participation in the strategic decision making process, measured by a five-point Likert scale ranging from “1” (very low) to “5” (very high).
CMA	The absolute number of Cost and Management Accountants or Certified Management Accountants working in the company.

### **5.3.6.2.2 The external environment**

There exist several dimensions of external environment (Chenhall, 2003; Otley, 2016) including environmental uncertainty (Burns and Stalker, 1961; Khandwalla, 1977; Chenhall and Morris, 1986; Ezzamel, 1990; Abdel-Kader and Luther, 2008), hostility or intensity of competition (Khandwalla, 1972; 1977; Otley, 1978), diversity (Khandwalla, 1977), complexity (Khandwalla, 1977; Brownell, 1985), dynamism (Duncan, 1972; Waterhouse and Tiessen, 1978), and ambiguity (Ouchi, 1979). Amongst these variables, environmental uncertainty has received the widest attention of researchers in management accounting (Chenhall, 2003; Otley, 2016) because of the ease of measurement of perceived

environmental uncertainty using interviews or questionnaires (Otley, 2016). The present study includes the following variables as the measure of ‘environmental uncertainty’: (1) unpredictability of the environment, (2) fluctuating, (3) ambiguousness, (4) lack of information on environmental factors, and (5) uncertainty about the outcomes of decisions.

In addition to the ‘environmental uncertainty’, the present study also includes environmental hostility, complexity, diversity, social pressure on ecology, industry pressure, professional influence, and pressure from regulators to represent the ‘external environment’. Environmental hostility refers to the intensity of competition or the level of difficulty an organization faces from its environment within which it operates (Chenhall, 2003; Otley, 2016), and is measured as the extent to which competition in an industry is stressful, dominating and restrictive (Khandwalla, 1977; Chenhall, 2003).

Environmental complexity is measured as the extent of rapidness of changes in the technology in an industry (Khandwalla, 1977; Chenhall, 2003). Environmental diversity is defined as the level of varieties in products, inputs, and customers in an industry (Khandwalla, 1977; Chenhall, 2003). An environment is considered highly diversified if it includes a wide range of offerings, suppliers, and buyers. Social pressure on maintaining environmental ecology and economic and social well-being of employees and society is measured by the perception of responding companies as the degree of pressures they faced in this respect (Chenhall, 2003). The inclusion of economic and institutional pressures (coercive, mimetic and normative) is also suggested to be included in studying the external environment (Granlund and Lukka, 1998). Next to all of these variables, a five-point Likert scale ranging from “1” (very low) to “5” (very high) was provided to allow respondents to identify their company’s position in respect of these variables.

Table 5.11: Definition and measurement of external environmental variables

<b>Variable</b>	<b>Description</b>
PEU	Perceived environmental uncertainty, measured as a single score by summing up the scores on each individual component of PEU.
UNPREDICT	The degree of unpredictability of the external environment, measured by a five-point Likert scale ranging from “1” (very low) to “5” (very high).
FLUCTUATE	The degree of fluctuation in the external environmental factors, measured by a five-point Likert scale ranging from “1” (very low) to “5” (very high).
AMBIGUITY	The level of ambiguity in understanding the organizational external environment, measured by a five-point Likert scale ranging from “1” (very low) to “5” (very high).
LACKINFO	The level of scarcity of organizational external environmental information, measured by a five-point Likert scale ranging from “1” (very low) to “5” (very high).
UNCEROUT	The degree of uncertainty of the outcome of a decision, measured by a five-point Likert scale ranging from “1” (very low) to “5” (very high).
INTENCOMP	Intensity of competition, measured as a single score by summing up the scores on each individual items of environmental hostility.
STRESSFUL	The degree of stressfulness of competition in the industry, measured by a five-point Likert scale ranging from “1” (very low) to “5” (very high).
DOMINATE	The degree of dominance exercised by a particular company in the industry, measured by a five-point Likert scale ranging from “1” (very low) to “5” (very high).
RESTRICT	The extent of restriction prevailed in the entrance in an industry, measured by a five-point Likert scale ranging from “1” (very low) to “5” (very high).
ENVCOMPLEX	The extent of rapidness of changes in the technology in an industry, measured by a five-point Likert scale ranging from “1” (very low) to “5” (very high).
ENVDIVERSE	The level of varieties in products, inputs, and customers in an industry, measured by a five-point Likert scale ranging from “1” (very low) to “5” (very high).
ENVECO	Social pressure on maintaining environmental ecology, measured by a five-point Likert scale ranging from “1” (very low) to “5” (very high).
COERCIVE	Coercive (Institutional) pressure exerted by the parent company, resource providers and regulators to adopt specific SMA technique, measured by a five-point Likert scale ranging from “1” (very low) to “5” (very high).
MIMETIC	Mimetic (Institutional) pressure exerted by the successful application of SMA techniques in other organizations in an industry, measured by a five-point Likert scale ranging from “1” (very low) to “5” (very high).
NORMATIVE	Normative (Institutional) pressure exerted by professional network and/or media, measured by a five-point Likert scale ranging from “1” (very low) to “5” (very high).

### 5.3.6.3 Control variables

#### 5.3.6.3.1 Size

The definition and measurement of firm size exhibit considerable variations from study to study including total revenue, assets, equity value, profits, and number of employees

(Chenhall, 2003). However, the use of number of employees in measuring firm size is prevalent in majority of the contingency-based MCS research (Chenhall, 2003). The high correlation of the number of employees with net assets (Pugh et al., 1969) is attributed to the widespread use of this measure in MA research (Chenhall, 2003). Considering this fact, the present research measures the variable ‘firm size’ by the natural logarithm of the number of employees working in a firm.

#### **5.3.6.3.2 Industry**

Despite the dominance of MA research in the manufacturing industry (e.g., Bright et al., 1992; Innes and Mitchell, 1995; Cinquini and Tenucci, 2010; Pavlatos and Kostakis, 2018), service industry has also gained increased attention of the researchers in the recent past (Collier and Gregory, 1995; Cugini et al., 2007; Lorenz, 2015; Turner et al., 2017). However, the use of both these sectors in the sample of a single study is more prevalent in this field of research (e.g., Guilding et al., 2000; Alamri, 2019). Consequently, the investigation of the effect of ‘industry’ variable in a study that includes companies from both manufacturing and service industry seems to be of vast importance. ‘Industry’ variable is defined as a dummy variable, and is measured by assigning a value of “1” for service firm and “2” for manufacturing firm.

#### **5.3.6.3.3 Product Quality**

The quality of product manufactured or the service rendered can have considerable effect on the extent of using MCS, specifically SMA practices. As the current market conditions require companies to continually increase product functionality, reduce design cycle, decrease cost and improve quality (Thornton et al., 2000), companies seeking to improve quality seem to need greater information. This, in turn, might promote the usage of more advanced and strategic oriented techniques such as SMA practices. Consequently, the present

research attempt to define and measure the variable by asking the respondent to put a score to identify the quality of their product or service in the industry using a five-point Likert scale ranging from “1” (below average) to “5” (above average).

### **5.3.7 Hypotheses Development**

#### **5.3.7.1 Business strategy and SMA usage**

In MCS research, it is recognized that managers have strategic choice that they use to position their organizations in particular environments (Chenhall, 2003). Contingency-based research predicts a strong link between certain types of MCS and particular strategies adopted (Langfield-Smith, 1997; Chenhall, 2003). Several generic taxonomies of business strategy exist in literature including (strategic pattern) prospectors-analyzers-defenders (Miles and Snow, 1978), entrepreneurial-conservative (Miller and Friesen, 1982), (strategic mission) build-hold-harvest (Gupta and Govindarajan, 1984), and (strategic position) product differentiation-cost leadership (Porter, 1980) (Chenhall, 2003). Among these taxonomies, the present research concentrates on three aspects of business strategy including strategic pattern, mission and position.

##### **5.3.7.1.1 Strategic pattern**

Based on the pattern of strategy followed, Miles and Snow (1978) identified three preferred organizational strategies (prospectors-analyzers-defenders) in addition to a fourth one (reactor) which they viewed as unsustainable (Cadez and Guilding, 2008). Of these, prospectors and defenders are seen to define a continuous spectrum whereas analyzer adopts a hybrid form of strategy that contains the attributes of both prospectors and defenders (Miles and Snow, 1978). Prospectors are thought to be innovators and pioneers in the market and product (Miles and Snow, 1978; Cadez and Guilding, 2008). Moreover, environmental and



future orientations are more apparent in the prospectors' type companies (Cadez and Guilding, 2008), and therefore need increased future-oriented information on the external environmental factors. In contrast, defenders are less dynamic and focus on efficiency to attain success through achieving competitive advantages (Miles and Snow, 1978; Cadez and Guilding, 2008). Accordingly, the need for future and market-oriented information is less apparent in the defender type organization. As this discussion suggests, the use of external organizational, environmental and future oriented information is more apparent in the prospectors type organizations, and that SMA techniques are also characterized by the use of organizational external, market and future oriented information, the present study expects greater SMA usage in prospectors than other (defenders, analyzer or reactor) types of organizations. Moreover, prior empirical research (Guilding, 1999; Cadez and Guilding, 2008) also documented greater usage of SMA techniques in prospectors than in defender organizations. This further motivates the present research to assume greater usage of SMA techniques in the prospectors' type organizations. Therefore, the study hypothesizes that:

*H1a: SMA usage rates are higher in prospector type companies than in defender type companies.*

#### **5.3.7.1.2 Strategic mission**

Strategic mission represents the nature of the strategic goal pursued (Guilding, 1999) and can have considerable effect on the types of information required. Gupta and Govindarajan (1984) classified a company's strategic mission into any of the two spectrums: build and harvest. Build companies tend to pursue high market share through enhancing competitive advantage whereas harvest companies pursue short term profit (Gupta and Govindarajan, 1984; Govindarajan and Gupta, 1985). In order to capture and maintain high market share, the use of external or market-oriented information (specifically to extend capacity) seems to

be inevitable (Porter, 1980; Guilding, 1999). Accordingly, it is well recognized that companies pursuing build mission require extended external, market-oriented, non-financial and future-oriented information than companies pursuing harvest mission (Langfield-Smith, 1997; Guilding, 1999; Chenhall, 2003; Cinquini and Tenucci, 2010). Since SMA techniques include the provision of using external, non-financial and future-oriented information, the use of such techniques seems to be greater in companies pursuing build mission than companies pursuing harvest mission. Partial support is also evidenced by prior empirical studies such as Guilding (1999) and Cinquini and Tenucci (2010). The arguments presented above and the findings of prior studies motivate the present study to formulate the following hypothesis.

*H1b: SMA usage rates are higher in companies pursuing build mission than in companies pursuing harvest mission.*

#### **5.3.7.1.3 Strategic positioning**

In order to attain competitive advantage, a company may take any of the two spectrums of strategic positioning: product differentiation or cost leadership. Companies pursuing product differentiation strategy tend to offer superior values in their offerings usually having unique attributes (Porter, 1980). Moreover, differentiating companies tend to pay more attention on markets and differentiation costs than costs leaders (Shank and Govindarajan, 1992). In contrast, companies pursuing cost leadership strategy tend to find the lowest possible costs as compared to their competitors in a particular market (Porter, 1980) and concentrate on traditional costing systems which basically require internal company information (Shank and Govindarajan, 1992). This discussion suggests that differentiators are more associated with prospector and build companies because of their need for extended external, market-oriented and non-financial information (Langfield-Smith, 1997; Chenhall, 2003; Cinquini and Tenucci, 2010). Chenhall and Langfield-Smith (1998) also provided results in support these

arguments where they demonstrated greater usage of innovative and advanced MA tools such as benchmarking, ABC and strategic planning in companies pursuing product differentiation strategy. Cinquini and Tenucci (2010) also documented evidence in support of this argument in the Italian context. The arguments presented above and the findings of prior studies motivate the present research to formulate the following hypothesis.

*H1c: SMA usage rates are higher in companies pursuing product differentiation strategy than in companies pursuing cost leadership strategy.*

### **5.3.7.2 Organizational structure and SMA usage**

Organizational structure has been defined from a number of perspectives in the literature including the outcomes of structure and the structural mechanisms (Chenhall, 2003). Based on the outcome of structure, it may take the form of differentiation (decentralization) or integration (Lawrance and Lorsch, 1967). Structural mechanisms, on the other hand, include centralization, standardization, formalization, and configuration (Pugh et al, 1968, 1969). Burn and Stalker (1961) identified a company's organizational structure either as organic (highly informal) or mechanistic (highly formalized).

Decentralized organization tends to adopt formal MCS (Bruns and Waterhouse, 1975) and use more administrative control through sophistication of MCS such as budget (Merchant, 1981). Decentralized organizations delegate more authority (autonomy) to managers at different layers of organization (Chenhall and Morris, 1986). To perform better and to manage their center's activities efficiently, managers need detailed information regarding their responsibility center that is even not available centrally (Abdel-Kader and Luther, 2008). This might enhance the practicability of using more sophisticated and innovative cost management tools such as ABC, BSC to facilitate planning, control and decision making relating to their responsibility centers (Abdel-Kader and Luther, 2008). Since SMA techniques provide

detailed internal and external, financial and non-financial information, decentralized organizations are expected to make greater usage of SMA techniques. Moreover, Chia (1995) and Abdel-Kader and Luther (2008) also provided empirical evidence in support of this proposition which documented sophisticated MAS usage in decentralized organizations as compared to their counterparts. The arguments provided above and the findings of the above studies motivate the present research to formulate the following hypothesis.

*H2a: SMA usage rates are higher in decentralized companies than in centralized companies.*

Based on the level of structuring of activities, an organizational structure can take either the form of organic or mechanistic organization. An organic structural mechanism allows firm to keep their activities open to different employees as the activities are not highly specified and formalized. In contrast, a mechanistic organization structures its activities as highly formalized and specialized, and therefore specific employees are dedicated to particular job. It is generally believed that organic structures are more suitable to uncertain environment (Chenhall, 2003). To cope with such uncertain and diverse environments, an organization needs to decentralize its authority throughout the organizations (Lawrence and Lorsch, 1967). Accordingly, organic structure is more associated with decentralization and requires detailed external environmental and forward-looking information to deal with. SMA practices seem to be more suitable for organic and decentralized organizations. The extant literature on the relation between MCS or MA or SMA and organizational structural mechanisms, to the best of the researcher knowledge, appears to remain unexplored except for few budgeting system (Merchant, 1981) and ABC (Gosselin, 1997). Accordingly, the arguments presented above motivate the present research to assume a greater SMA usage in companies adopting organic structural mechanism.

*H2b: SMA usage rates are higher in companies adopting organic structure than in companies adopting mechanistic structure.*

### **5.3.7.3 Organizational culture and SMA usage**

The extant literature on the effect of culture on aspects of MCS provided mixed results (Chenhall, 2003). Additionally, the findings of these studies do not provide any consensus results due to the varieties in the aspects of culture and MCS studied (Chenhall, 2003). Majority of these studies concentrated on national level culture rather than organizational culture. The present research concentrates on the effect of four organizational cultural values (power distance, individualism vs. collectivism, uncertainty avoidance, and career success vs. modesty and quality of life) on the use of innovative MCS such as SMA practices.

The lack of power distance between two consecutive positions (e.g., CFO and deputy CFO) is expected to promote innovation (Shane, 1993; Sun, 2009). Such innovative environments require more external, market-oriented, non-financial and forward-looking information to continue the pace of innovation. As SMA techniques include the provision forward-looking, financial and non-financial external information, the uses of such techniques are expected to be greater in organizations characterized by low power distance among executives. O'Conner (1995) suggested evidence in favor of this argument and showed a positive influence of low power distance on MCS effectiveness. Surprisingly, the effect of organizational cultural values on the adoption of innovative MA tools remains, to the best of the researcher knowledge, unexplored in the extant literature. However, the arguments present above and the findings of extant literature motivate the present research to formulate the following hypothesis.

*H3a: SMA usage rates are higher in companies with low power distance than in companies with high power distance.*

The effect of emphasizing organizational interest (hereby collectivism) over individual interest (individualism) and vice versa on the usage rate of MCS or MAS, or SMA receive, to date, little attention of the MA researchers. However, the empirical evidence found in other disciplines suggests a mixed effect of national level individualism on the rates of innovation. For example, Shane (1993) and Sun (2009) documented that the lack of individualism motivate higher rates of innovation. In contrast, Kaasa and Vadi (2008) displayed a positive relationship between individualism and innovation rates. Ueno and Wu (1993) studied the effect of individualism on MCS characteristics and reported that managers focusing on individualism adopted more formal communication, controllability in budgeting and long-term performance evaluation. At the organizational level, emphasizing organizational interest over the individual interest is expected to generate higher innovation rates, which in turn, stimulates the use of external, environmental and market-oriented and forward-looking information. SMA usage rates are expected to be higher in such organization since SMA techniques include the provision of using such types of information. Therefore, the following hypothesis is formulated in relation to the effect of collectivism vs. individualism on the SMA usage rates.

*H3b: SMA usage rates are higher in companies emphasizing collectivism than in companies emphasizing individualism.*

The effect of uncertainty avoidance attitude of employee on the adoption of MCS has rarely been addressed in the extant MA research. In other discipline (e.g., tourism), Money and Crotts (2003) demonstrated that people characterized by higher level of uncertainty avoidance makes greater use of several information sources. However, high level of uncertainty avoidance may discourage innovation. Shane (1993) and Sun (2009) provided evidence in support of this view and documented that uncertainty acceptance leads to

increase in the innovation rates. Accordingly, organizations willing to accept uncertainty in operations and success are expected to use information from diversified sources (internal as well as external) to minimize the possible loss caused by unseen contingencies. Since SMA techniques involve the provision of using information from both internal and external sources, the use of these techniques is supposed to be greater in organizations accepting uncertainty at a higher level. This motivates the present research to formulate the following hypothesis.

*H3c: SMA usage rates are higher in companies accepting uncertainty than in companies avoiding uncertainty.*

The fourth aspect of culture studied in the present research is the effect of emphasizing material success and career vs. modesty and personal life on the usage rate of SMA techniques. The extant literature in MA research seems to be silent in this respect. The culture of placing more weights on achieving material and career success by majority of the employees in an organizational setting seems to focus on innovation and aggressive acquisition of market share. The extensive use of strategic and forward-looking information is inevitable in such organization in the achievement of targeted performance. The use of strategy focused cost management tools seems to be more apparent in such organizations in the achievement of targeted performance. Consequently, a positive association between career focus and greater SMA usage is expected. Hence, the fourth hypothesis in relation to cultural values is as follows.

*H3d: SMA usage rates are higher in companies with higher career focus than in companies with lower career focus.*

#### **5.3.7.4 Process characteristics and SMA usage**

In general, process characteristics (or technology) are represented by the way in which an organization's work processes operate which include human and other resources such as hardware, materials, machines and software (Chenhall, 2003). Allowing for the importance of technology to MCS design found in the organizational literature (Chenhall, 2003), three generic types of technology are used in the present research to represent process characteristics: complexity, task uncertainty and interdependence.

The complexity of a process depends on the nature of products/services offered (standardized or customized), the size of production runs (large-batch or small-batch), and the level of automations of operations (Woodward, 1965; Chenhall, 2003). Organizations that produce standard, undifferentiated products employing capital intensive, mass production and process technologies seem to be more appropriate for such organizations using automated process (Chenhall, 2003). The use of traditional and formal financial MCS appears to be more appropriate for such organization (Chenhall, 2003). Khandwalla (1977), Merchant (1981) and Dunk (1992) documented evidence in support of this view and demonstrated the use of formal and traditional budgetary control in organizations characterized by highly standardized and automated process.

In contrast, organizations that produce customized products, have reciprocal interdependencies with customers, and at the same time employing reasonably automated process, the use of more flexible, open, and informal controls seem to be more appropriate. Krumwiede (1998) found evidence in support of this view and reported that process complexity is positively correlated with the decision to adopt sophisticated MAS such as ABC. However, Abdel-Kader and Luther (2008) did not find significant association between process complexity and MAS sophistication in the British food and drink industry. Since SMA techniques include the provisions of using external, market-oriented forward looking



financial and non-financial information, organizations producing customized products and employing complex process with reciprocal interdependencies with customers are expected to make greater use of SMA techniques. Accordingly, the arguments and findings presented above motivate the present research to formulate the following hypothesis in relation to the association between process complexity and SMA usage.

*H4a: SMA usage rates are higher in companies employing complex processing system.*

Prior MCS literature suggests a considerable effect of the level of task uncertainty on the choice of MCS (Daft and Macintosh, 1981; Chenhall, 2003). Process with high tasks variability and difficulty place less emphasis on formal control procedure such as accounting performance measures (Hirst, 1983). In contrast, process with high analyzability (and therefore low task uncertainty) is associated with formal accounting controls (Abernethy and Brownell, 1997). In line with these arguments, Chenhall (2003) proposed that the more technologies (hereby the processes) are characterized by high level of tasks uncertainty the more informal the controls including the use of broad based MCS. Since SMA techniques are characterized by the broad scope of information sources including the external non-financial information, processes characterized by greater tasks uncertainty seem to best suited to SMA techniques to exercise controls. Accordingly, the following hypothesis is formulated in relation to the association between tasks uncertainty and SMA usage.

*H4b: SMA usage rates are higher in companies employing process with high task uncertainty than in companies employing process with low task uncertainty.*

Prior literature also suggests strong link between the levels of interdependence among tasks and the choice of control mechanism such as MCS. In highly interdependent situations, broad scope MCS focusing on appropriate aggregations and integrative information are best suited

(Chenhall and Morris, 1986) along with the greater reliance on statistical reports for planning and informal coordination (Macintosh and Daft, 1987). Strategies of customization seem to be associated with high levels of interdependencies and require greater reliance on information characterized by integration, aggregation and timeliness (Bouwens and Abernethy, 2000). In line with these arguments, Chenhall (2003) suggested that the more technologies (hereby the processes) are characterized by high levels of interdependence the more informal the controls including the use of aggregated and integrated MCS. Since SMA techniques provide broad scope information focusing on several external constituents such as competitors and customers, organization with process characterized by higher task interdependence seems to be highly benefited by the use of sophisticated controls procedures such as SMA practices. Accordingly, the following hypothesis is formulated in relation to the association between task interdependence and SMA usage rates.

*H4c: SMA usage rates are higher in companies employing process with high task interdependence than in companies employing process with low task interdependence.*

#### **5.3.7.5 Other internal organizational variables (advanced technology, market orientation, accountant participation in strategic decision, and presence of CMA) and SMA usage**

Prior MCS research (e.g., Ittner and Larcker, 1997; Perera et al., 1997; Sim and Killough, 1998; Mia, 2000; Abdel-Kader and Luther, 2008) has examined the association between the use of advanced technology in operation and the use of MAPs such as performance measurement and reward systems used. The use of advanced and contemporary technology in operation such as Total Quality Management (TQM), Just in Time (JIT), Flexible manufacturing, computer aided design, robotics, automated material handling, and integration

of manufacturing process have considerable bearings on the decisions to adopt innovative MCS (Chenhall, 1997, 2003). In such an operating environment, appropriate control systems should be open and informal, and should include broad scope information, benchmarking, and performance measures that establish links between strategy and operation such as BSC (Chenhall, 2003). Several prior studies such as Ittner and Larcker (1995, 1997), Sim and Killough (1998) and Abdel-Kader and Luther (2008) provided empirical evidence in support this argument and documented greater use of broad scope and strategic oriented MAPs in advanced manufacturing technology environment such as TQM. Since SMA techniques use broad scope and strategic oriented information, the use of these techniques is assumed to be higher in advanced technology environment. Accordingly, the following hypothesis is formulated in relation to the association between the use of advanced technology and SMA usage.

*H5a: SMA usage rates are higher in companies with advanced operating technology.*

A company might pay additional focus either on market or product in order to attain competitive advantage. Understanding the importance of customer loyalty in achieving sustainable competitive advantage, many firms have shifted their orientation from product to market (Jain and Singh, 2002). Customer (market) needs remain at the center in firms employing marketing orientation (Jaworski and Kohli, 1993; Walker et al., 1998). Narver and Slater (1990) noticed market orientation as a business culture that effectively and efficiently creates superior value for customers (Cadez and Guilding, 2008). Customer, competitor and long-term orientations characteristics of market orientation philosophy (Narver and Slater, 1990) enhances its prospect to be highly associated with external and long-term oriented SMA techniques (Cadez and Guilding, 2008). Guilding and McManus (2002) and Cadez and Guilding (2008) have investigated the impact of adopting market orientation philosophy on

SMA usage in the developed economy settings (Australia and Slovenia). Guilding and McManus (2002) demonstrated a significant positive association between market orientation and customer accounting oriented SMA usage in the top 300 Australian listed companies (measured by market capitalization). Cadez and Guilding (2008) also found a positive (statistically not significant) association in the top 500 Slovenian companies (measured by total revenue) between the constructs. The arguments and findings presented above suggested a positive influence of market orientation philosophy on the SMA usage rate. Accordingly, the following hypothesis is formulated in relation to the association between SMA usage and market orientation.

*H5b: SMA usage rates are higher in market-oriented companies than in product-oriented companies.*

The role of management accountants has been shifted from the bean counter to the business partner (Rieg, 2018), whereby they demonstrated their capability to supply high quality, relevant and forward-looking information required to make strategic decisions (Granlund and Lukka, 1998; Karlsson et al., 2019). Moreover, several researchers (e.g., Granlund and Lukka, 1998; Karlsson et al., 2019; Rashid et al., 2020, 2021) presented supportive evidence in regard to the transition to hybrid accountant which encompasses the role of management accountant as traditional scorekeepers as well as capable business partner. As majority of the scorekeeping tasks are replaced by machine such as computer and related software, management accountants are supposed to have more time to concentrate on strategic issues. Such participation of accountants in strategic decision process is likely to assist them a better realization of what sort of information is required in strategic management decision-making (Cadez and Guilding, 2008). Such realization stimulates accountants to instigate innovative accounting techniques such as SMA techniques (Abernethy and Bouwens, 2005) having

greater strategic focus (Coad, 1996; Otley, 1999). This is particularly true in firms where the accountants believe that the existing MAPs failed to support firm's strategic decision making process.

Cadez and Guilding (2008) introduced this variable in the contingency-based SMA research. They investigated the effect of accountant's participation in strategy formulation on the SMA usage rate and found a significant positive association between these two variables. The arguments and findings presented above motivate the present research to formulate the following hypothesis.

*H5c: SMA usage rates are higher in companies with greater accountant participation in strategic decision making.*

The present study also investigated the effect of the presence of certified management accountant or cost and management accountant (CMA) on the SMA usage rate. Professional accountants hold expertise knowledge on financial reporting and strategic management thanks to the highly standardized and updated curriculum of professional accounting bodies and continuous professional development (CPD) training (IFAC, 2013; Jui and Wong, 2013; Rashid, 2020a). More specifically, certified management accountants (known as cost and management accountants in Bangladesh) are expected to have expertise knowledge on MAS such as SMA since the syllabus of the Certified Institute of Management Accountants (CIMA) and the Institute of Cost and Management Accountants of Bangladesh (ICMAB) includes several courses on MAPs and SMA. Furthermore, these institutes arrange CPD programs in the forms of workshop, seminar, and training that provide in-depth and practical knowledge on several SMA techniques. In addition to this, the ICMAB has issued a good number cost management standards- known as Bangladesh Cost Accounting Standards (BCAS)- which includes detailed rules on several SMA techniques such as BCAS-10 Target

costing, BCAS-11 Life cycle costing, BCAS-14 ABC, BCAS- 23 Strategic cost management, and BCAS-29 Quality costing. This initiative is expected to enhance the motivation of CMA in Bangladesh to instigate SMA techniques in their companies. However, contingency-based MCS research did not deal with the presence of cost and management accountants on the adoption of a particular or a package of MAPs, and therefore empirical evidence on the effect of the presence of cost management expert on SMA usage is not available in the extant literature. Nevertheless, the arguments presented above and the issuance of BCAS by ICMAB motivates the presence research to assume a positive association between the presence of CMA and SMA usage rate.

*H5d: SMA usage rates are higher in companies with greater number of certified cost and management accountants.*

#### **5.3.7.6 Environmental uncertainty and SMA usage**

Environmental uncertainty is one of the prominent and fundamental contingent variables in the MCS literature (Chenhall, 2003; Abdel-Kader and Luther, 2008). In dealing with perceived environmental uncertainty (PEU), prior literature (e.g., Gordon and Narayanan, 1984; Chenhall and Morris, 1986; Gul and Chia, 1994; Chong and Chong, 1997; Abdel-Kader and Luther, 2008) suggested the use of broad scope MCS that includes the provision of using broad scope information including external, market-oriented, non-financial and ax ante information in addition to other types of information (Abdel-Kader and Luther, 2008). For example, Gul and Chia (1994) suggested that when PEU is high management may require additional information concerning the environment and market to deal with the complexities of the environment. Based on the findings of previous MCS contingency based research (discussed in details in Chapter Four), the present research uses the following five variables as the measurers of ‘perceived environmental uncertainty’: (1) unpredictability of the

environment, (2) fluctuating, (3) ambiguousness, (4) lack of information on environmental factors, and (5) uncertainty about the outcomes of decisions.

However, prior literature did not deal with each of these five factors separately. Rather, these studies demonstrated the combined effect of some of these variables under the umbrella of 'PEU'. Nevertheless, majority (e.g., Gordon and Narayanan, 1984; Chenhall and Morris, 1986; Gul and Chia, 1994; Chong and Chong, 1997; Abdel-Kader and Luther, 2008) of these studies documented a positive correlation between PEU and broad scope MAS information or sophistication of MAS. For example, Gordon and Narayanan (1984) documented a positive correlation between PEU and the use of externally oriented, non-financial and ex ante information. The findings of Chenhall and Morris (1986) also suggested a positive association between PEU and broad scope and timely information. Gul and Chia (1994) also found positive relationship between PEU and sophistication of MAS. Chong and Chong (1997) suggested PEU as an important antecedent of MAS design. And recently Abdel-Kader and Luther (2008) also reported a significant positive effect of PEU on sophistication of MAS. Since SMA techniques also characterized by the provision of using external, non-financial and forward-looking information, accordingly organizations facing higher PEU are supposed to make greater usage of SMA techniques to deal with emerged PEU. The findings of prior studies and arguments presented above motivate the present research to formulate the following hypotheses.

*H6: SMA usage rates are higher in companies perceiving a higher degree of environmental uncertainty than in companies perceiving a lower degree of environmental uncertainty.*

*H6a: SMA usage rates are higher in companies perceiving a higher degree of unpredictability of the environment than in companies perceiving a lower degree of unpredictability of environment.*

*H6b: SMA usage rates are higher in companies perceiving a higher degree of fluctuation in the external environment than in companies perceiving a lower degree of fluctuation in the external environment.*

*H6c: SMA usage rates are higher in companies perceiving a higher degree of ambiguousness of environmental information than in companies perceiving a lower degree of ambiguousness of environmental information.*

*H6d: SMA usage rates are higher in companies perceiving a higher degree of lack of information on environmental factors than in companies perceiving a lower degree of lack of information on environmental factors.*

*H6e: SMA usage rates are higher in companies perceiving a higher degree of uncertainty about the outcomes of decisions than in companies perceiving a lower degree of uncertainty about the outcomes of decisions.*

#### **5.3.7.7 Environmental hostility and SMA usage**

The intensity of competition or the level of difficulty an organization faces from its environment represents the level of environmental hostility (Chenhall, 2003; Otley, 2016). Alternatively, to what extent competition in an industry is stressful; do few companies dominate the entire market; and how difficult to enter in the market for a new entrepreneur determine the level of hostility of that environment (Khandwalla, 1977; Chenhall, 2003). Prior MCS literature has focused to a very limited extent on the appropriate design of MCS in managing complex and competing forces from the external environment (Chenhall, 2003). Imoisili (1985) suggested the use of formal control mechanism in dealing with hostility from intense competition. Chenhall (2003) also advocated a reliance on formal control and emphasis on budget while a firm faces hostile and turbulent conditions. However, such formal control seems to be appropriate in the short-term period to ensure short-term survival



and then more organic controls appears to be more appropriate (Khandwalla, 1977). The findings of Khandwalla (1972) study stressed this view which suggested the application of sophisticated accounting, production and statistical controls in facing hostility from intense competition. Mia and Clarke (1999) suggested that the use of MAS information by managers can help organizations to formulate and implement plans to deal with competitive environments. Bromwich (1990) also suggested the use of external and market oriented (benchmarking and monitoring) information in meeting an organization's challenges resulting from competition in its market (Mia and Clarke, 1999). The findings of Mia and Clarke (1999) clearly demonstrated the usefulness of MAS information in dealing with the intensity of market competition. O'Connor et al. (2011) also supported this result in the Chinese listed firms which showed a positive association between the threat of foreign entrants and greater reliance on broad scope MCS. The arguments presented above and the findings of previous studies motivate the present research to formulate the following hypotheses.

*H7: SMA usage rates are higher in companies perceiving a higher degree of environmental hostility than in companies perceiving a lower degree of environmental hostility.*

*H7a: SMA usage rates are higher in companies facing stressful competition.*

*H7b: SMA usage rates are higher in companies operating in an industry dominated by few companies.*

*H7c: SMA usage rates are higher in companies operating in an industry where entry restriction is high.*

### **5.3.7.8 Environmental complexity, diversity, ecology and SMA usage**

Khandwalla (1977) suggested a useful taxonomy in measuring external environmental variables (Chenhall, 2003). In this taxonomy, the environmental complexity was measured by

the rapidness of developing technologies whereas environmental diversity was measured by the extent of varieties in products, inputs and customers in the industry. Previous MCS literature has rarely focused on the effect of these two environmental variables on MCS design. Brownell (1985) demonstrated that environmental complexity derived from suppliers and government was associated with a reduced emphasis on traditional MCS such as budget. Consequently, dealing with such complexity requires accumulation and analysis of information from a variety of external sources and broad scope MCS such as SMA techniques seem to be more appropriate in dealing with such environmental complexity. Environmental diversity caused by varieties in input, products and customers also demand for the use of externally oriented non-financial information.

The reduction of adverse ecological effects caused by the operations of business has received massive attention from several stakeholders. In particular, greenhouse gas (GHG) emissions are taken to be one of the key reasons for the global climate change (Karl and Trenberth, 2003; Cadez et al., 2019; Rashid et al., 2021), and consequently GHG-intensive companies operating in the energy and industry sectors seem to be the principal players in this field (Cadez and Czerny, 2016; Rashid et al., 2021). Surprisingly, despite the intense corporate efforts paid globally to reduce GHG emission, the magnitude of GHG emissions appear to rise consistently (Cadez et al., 2019; Rashid et al., 2021). Companies operating in the manufacturing industries seem to face increased pressure from several stakeholders, and certainly dealing with such pressures requires extensive use of the externally focused non-financial information. The effect of environmental complexity, diversity and ecological pressure on the design and choice of MCS, to the best of the author's knowledge, remained unexplored in the MCS and MAS literature. Nevertheless, as SMA techniques include the provision of using externally-focused non-financial information regarding competitors, customers and other environmental factors, the use of these techniques is expected to be

higher in companies facing greater environmental complexity and diversity. These arguments and findings presented above motivate the formulation of following hypotheses.

*H8a: SMA usage rates are higher in companies perceiving higher environmental complexity than companies perceiving lower environmental complexity.*

*H8b: SMA usage rates are higher in companies perceiving higher environmental diversity than companies perceiving lower environmental diversity.*

*H8c: SMA usage rates are higher in companies perceiving higher ecological pressures than companies perceiving lower ecological pressures.*

### **5.3.7.9 Institutional pressures and SMA usage**

Granlund and Lukka (1998) suggested that pressures may come from coercion from institutions, the tendency to mimic or imitate apparently successful practices in the industry, and normative pressures derived from appropriate social conduct. Since the effect of these external pressures (variables) remained unexplored in the contingency-based MAS research, Chenhall (2003) suggested the inclusion of these factors while studying the effect of external contingencies on the design and choice of MCS. Previous research in MCS (Burns and Scapens, 2000; Hussain and Hoque, 2002; Hussain and Gunasekaran, 2002; Arroyo, 2012) to date has focused on these factors using institutional theory and majority of these studies are qualitative (with dominance of case study method) in nature explaining the change in MCS over time. Since institutional pressures come from the external environment, the use externally-focused SMA techniques in comparison to formal MAS seem to be more appropriate in dealing with these pressures. To comply with the rules issued by the regulators (coercive pressure) may require information external to the organization. Dealing with the pressures exerted by several stakeholders such as shareholders, lenders and donor agencies may also require strategic-oriented information that the traditional MAS may not provide.

Moreover, to learn about the apparently successful practices (mimetic pressure) in the industry, competitor-focused SMA techniques seem to be more appropriate. The arguments provided above motivate the present study to formulate the following hypotheses.

*H9a: SMA usage rates are higher in companies perceiving higher coercive pressures than companies perceiving lower coercive pressures.*

*H9b: SMA usage rates are higher in companies perceiving higher mimetic pressures than companies perceiving lower mimetic pressures.*

*H9c: SMA usage rates are higher in companies perceiving higher normative pressures than companies perceiving lower normative pressures.*

#### **5.3.7.10 SMA usage and Firm performance**

The relationship between SMA usage and firm performance has rarely been addressed in the extant SMA research and has been subjected to extensive empirical investigation (Cadez and Guilding, 2008; Amanollah Nejad Kalkhouran et al., 2017). Despite the ascendancy of findings of prior empirical studies on the relationship between greater management accounting (broad scope information) usage and firm performance (Mia and Chenhall, 1994; Abernethy and Guthrie, 1994; Mia and Clarke, 1999; Hoque and James, 2000; Cravens and Guilding, 2001; Baines and Langfield-Smith, 2003; Cadez and Guilding, 2008; Alamri, 2019), the relationship is rather inconclusive and context dependent (Chenhall, 2003; Cadez and Guilding, 2008).

It is well established that the key function of an organization's information system (including management accounting system and SMA) is to supply necessary information to facilitate managerial decision-making and control (Abernethy and Bouwens, 2005). The failure of an information system to provide adequate strategic information leads to flawed or late decision which will result in suboptimal performance (Gupta, 1987). The provision of better

information in uncertain conditions is supposed to facilitate improved resource allocation (Baines and Langfield-Smith, 2003) which, in turn, enhance the likelihood of positive outcome (Christensen and Feltham, 2003; Cadez and Guilding, 2008). As majority of the SMA techniques includes the provision of external oriented long-term strategic information, their adoption in an organization is expected to enhance its capability to supply adequate and timely strategic information to support managerial decision and control. Several prior studies also documented results in favor of this notion that greater SMA usage should result in improved firm performance. For example, using a sample of 193 large Slovenian companies, Cadez and Guilding (2008) documented that SMA usage has a significant and positive effect on perceived firm performance. Amanollah Nejad Kalkhouran et al. (2017) also supported this result in the context of Malaysian service small and medium-sized enterprises (SMEs). The arguments and findings presented above motivate the present study to hypothesize a positive relationship between greater SMA usage and firm performance. Therefore, the study assumes that:

*H 10: There is a positive association between SMA usage and firm performance.*

Table 5.12: Summary of the Hypotheses

Business strategy	Strategic pattern	H1a: SMA usage rates are higher in prospector type companies than in defender type companies.
	Strategic mission	H1b: SMA usage rates are higher in companies pursuing build mission than in companies pursuing harvest mission.
	Strategic positioning	H1c: SMA usage rates are higher in companies pursuing product differentiation strategy than in companies pursuing cost leadership strategy.
Organizational structure	Degree of decentralization	H2a: SMA usage rates are higher in decentralized companies than in centralized companies.
	Structuring of activities	H2b: SMA usage rates are higher in companies adopting organic structure than in companies adopting mechanistic structure.

Organizational culture	Power distance	H3a: SMA usage rates are higher in companies with low power distance than in companies with high power distance.
	Organizational interest	H3b: SMA usage rates are higher in companies emphasizing collectivism than in companies emphasizing individualism.
	Uncertainty avoidance	H3c: SMA usage rates are higher in companies accepting uncertainty than in companies avoiding uncertainty.
	Career focus	H3d: SMA usage rates are higher in companies with higher career focus than in companies with lower career focus.
Process characteristics	Complexity	H4a: SMA usage rates are higher in companies employing complex processing system.
	Task uncertainty	H4b: SMA usage rates are higher in companies employing process with high task uncertainty than in companies employing process with low task uncertainty.
	Task interdependence	H4c: SMA usage rates are higher in companies employing process with high task interdependence than in companies employing process with low task interdependence.
Other internal organizational variables	Advanced technology	H5a: SMA usage rates are higher in companies with advanced operating technology.
	Market orientation	H5b: SMA usage rates are higher in market-oriented companies than in product-oriented companies.
	Accountant participation in strategic decision	H5c: SMA usage rates are higher in companies with greater accountant participation in strategic decision making.
	Presence of CMA	H5d: SMA usage rates are higher in companies with greater number of certified cost and management accountants.
Environmental uncertainty	Perceived environmental uncertainty (PEU)	H6: SMA usage rates are higher in companies perceiving a higher degree of environmental uncertainty than in companies perceiving a lower degree of environmental uncertainty.
	Unpredictability of the environment	H6a: SMA usage rates are higher in companies perceiving a higher degree of unpredictability of the environment than in companies perceiving a lower degree of unpredictability of unpredictability of

		environment.
	Fluctuation in the external environmental factors	H6b: SMA usage rates are higher in companies perceiving a higher degree of fluctuation in the external environment than in companies perceiving a lower degree of fluctuation in the external environment.
	Ambiguity of environment	H6c: SMA usage rates are higher in companies perceiving a higher degree of ambiguousness of environmental information than in companies perceiving a lower degree of ambiguousness of environmental information.
	Lack of information on environmental factors	H6d: SMA usage rates are higher in companies perceiving a higher degree of lack of information on environmental factors than in companies perceiving a lower degree of lack of information on environmental factors.
	Uncertainty of outcome of decision	H6e: SMA usage rates are higher in companies perceiving a higher degree of uncertainty about the outcomes of decisions than in companies perceiving a lower degree of uncertainty about the outcomes of decisions.
Environmental hostility	Environmental hostility/intensity of competition	H7: SMA usage rates are higher in companies perceiving a higher degree of environmental hostility than in companies perceiving a lower degree of environmental hostility.
	Stressful competition	H7a: SMA usage rates are higher in companies facing stressful competition.
	Market domination	H7b: SMA usage rates are higher in companies operating in an industry dominated by few companies.
	Entry restriction	H7c: SMA usage rates are higher in companies operating in an industry where entry restriction is high.
Environmental complexity, diversity, ecology	Environmental complexity	H8a: SMA usage rates are higher in companies perceiving higher environmental complexity than companies perceiving lower environmental complexity.
	Environmental diversity	H8b: SMA usage rates are higher in companies perceiving higher environmental diversity than companies perceiving lower environmental diversity.
	Ecological pressure	H8c: SMA usage rates are higher in companies perceiving higher ecological pressures than companies perceiving lower ecological pressures.
	Coercive pressure	H9a: SMA usage rates are higher in companies

Institutional pressures		perceiving higher coercive pressures than companies perceiving lower coercive pressures.
	Mimetic pressure	H9b: SMA usage rates are higher in companies perceiving higher mimetic pressures than companies perceiving lower mimetic pressures.
	Normative pressure	H9c: SMA usage rates are higher in companies perceiving higher normative pressures than companies perceiving lower normative pressures.
SMA usage and firm performance		H10: There is a positive association between SMA usage and firm performance.

### 5.3.8 Model Specifications for Empirical Analyses

#### 5.3.8.1 Business strategy and SMA usage

To test the hypotheses 1a, 1b, and 1c, the present study uses the following OLS regression model:

$$SMAUSE_{i,t} = \alpha + \beta_1 SPATTERN_{i,t} + \beta_2 SMISSION_{i,t} + \beta_3 SPOSITION_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 INDUSTRY_{i,t} + \beta_6 PQUALITY_{i,t} + \varepsilon_{i,t}$$

Where SMAUSE stands for strategic management accounting usage, and is measured the usage of the selected 17 SMA techniques as a single score. All other variables are defined in the preceding section.

#### 5.3.8.2 Organizational structure and SMA usage

To test the hypotheses 2a and 2b, the study uses the following OLS regression model:

$$SMAUSE_{i,t} = \alpha + \beta_1 DCENTRA_{i,t} + \beta_2 ACTSTRUCT_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 INDUSTRY_{i,t} + \beta_5 PQUALITY_{i,t} + \varepsilon_{i,t}$$

The definitions of SMAUSE, SIZE, INDUSTRY and PQUALITY are identical to the definitions presented in the former equation. All other variables are defined in the preceding section.



### 5.3.8.3 Organizational culture and SMA usage

To test the hypotheses 3a, 3b, 3c and 3d, the study uses the following OLS regression model:

$$SMAUSE_{i,t} = \alpha + \beta_1 POWERDIST_{i,t} + \beta_2 ORGINT_{i,t} + \beta_3 UNCERAVOID_{i,t} + \beta_4 CAREER_{i,t} + \beta_5 SIZE_{i,t} + \beta_6 INDUSTRY_{i,t} + \beta_7 PQUALITY_{i,t} + \varepsilon_{i,t}$$

### 5.3.8.4 Process characteristics and SMA usage

To test the hypotheses 4a, 4b, and 4c, the present study uses the following OLS regression model:

$$SMAUSE_{i,t} = \alpha + \beta_1 PROCESSCOM_{i,t} + \beta_2 TASKUNCER_{i,t} + \beta_3 INTERDEPEND_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 INDUSTRY_{i,t} + \beta_6 PQUALITY_{i,t} + \varepsilon_{i,t}$$

### 5.3.8.5 Advanced technology, orientation, accountant participation in strategic decision, and presence of CMA and SMA usage

To test the hypotheses 5a, 5b, 5c and 5d, the study uses the following OLS regression model:

$$SMAUSE_{i,t} = \alpha + \beta_1 ADVTECHNO_{i,t} + \beta_2 MARKETORI_{i,t} + \beta_3 ACCTPART_{i,t} + \beta_4 CMA_{i,t} + \beta_5 SIZE_{i,t} + \beta_6 INDUSTRY_{i,t} + \beta_7 PQUALITY_{i,t} + \varepsilon_{i,t}$$

### 5.3.8.6 Environmental uncertainty and SMA usage

To test the hypotheses 6a, 6b, 6c, 6d and 6e the study uses the following OLS regression model:

$$SMAUSE_{i,t} = \alpha + \beta_1 UNPREDICT_{i,t} + \beta_2 FLUCTUATE_{i,t} + \beta_3 AMBIGUITY_{i,t} + \beta_4 LACKINFO_{i,t} + \beta_5 UNCEROUT_{i,t} + \beta_6 SIZE_{i,t} + \beta_7 INDUSTRY_{i,t} + \beta_8 PQUALITY_{i,t} + \varepsilon_{i,t}$$

### 5.3.8.7 Environmental hostility/intensity of competition and SMA usage

To test the hypotheses 7a, 7b, and 7c, the present study uses the following OLS regression model:

$$SMAUSE_{i,t} = \alpha + \beta_1 STRESSFUL_{i,t} + \beta_2 DOMINATE_{i,t} + \beta_3 RESTRICT_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 INDUSTRY_{i,t} + \beta_6 PQUALITY_{i,t} + \varepsilon_{i,t}$$

### 5.3.8.8 Environmental complexity, diversity, ecology and SMA usage

To test the hypotheses 8a, 8b, and 8c, the present study uses the following OLS regression model:

$$SMAUSE_{i,t} = \alpha + \beta_1 ENVCOMPLEX_{i,t} + \beta_2 ENVDIVERSE_{i,t} + \beta_3 ENVECO_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 INDUSTRY_{i,t} + \beta_6 PQUALITY_{i,t} + \varepsilon_{i,t}$$

### 5.3.8.9 Institutional pressures and SMA usage

To test the hypotheses 9a, 9b, and 9c, the present study uses the following OLS regression model:

$$SMAUSE_{i,t} = \alpha + \beta_1 COERCIVE_{i,t} + \beta_2 MIMETIC_{i,t} + \beta_3 NORMATIVE_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 INDUSTRY_{i,t} + \beta_6 PQUALITY_{i,t} + \varepsilon_{i,t}$$

### 5.3.8.10 SMA usage and firm performance

To test the hypothesis 10, the following OLS regression model is applied:

$$PERF_{i,t} = \alpha + \beta_1 SMAUSE_{i,t} + \beta_2 SPATTERN_{i,t} + \beta_3 SPOSITION_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 DECENTRA_{i,t} + \beta_6 STRESSFUL_{i,t} + \beta_7 MARKETORI_{i,t} + \beta_8 ADVTECH_{i,t} + \beta_9 ACCTPART_{i,t} + \varepsilon_{i,t}$$

Where PERF is the (perceived and observed) firm performance; perceived firm performance is measured by asking the respondents to assign a score between “1” (below average) and “5” (above average) for their company’s performance in relation to the industry performance, and

observed firm performance is measured by ROA, ROE, TOBINQ, and MTB ratio. All the variables used in the regression models are defined in the variable definition and measurement section.

## **5.4 Chapter Summary**

This chapter focuses on the research methods used in the present study. Starting with the research philosophy, this chapter continues discussion on the population, sample, and data set used, period of study, questionnaire design and the method of analysis used. It is seen that the adoption of pragmatic paradigm leads to the adoption of both positivistic and interpretivist paradigms in this study. Accordingly, mix methods- quantitative as well as qualitative- research design is adopted to provide a more robust picture of the status and rational of prevailing SMA practices. Census sampling method is employed as the researcher attempt to reach all the listed public limited companies (311 companies) in Bangladesh. Structured questionnaire is used to collect primary data from the 83 (26.69%) respondent companies through internet and face-to-face questionnaire survey. Moreover, 20 in-depth face-to-face interview surveys were also conducted in the second stage to collect qualitative data. Theoretical arguments and findings of prior studies used to develop hypotheses are also presented in this chapter. This section also concentrates on the definition and measurement of variables used in the regression models. Finally, the empirical models used to test the hypotheses formulated are discussed here.

## **CHAPTER SIX**

### **STATUS OF SMA PRACTICES IN BANGLADESH**

#### **6.1 Introduction**

This chapter presents descriptive statistics on the usage rate of a specific strategic management accounting (SMA) technique, a specific group of SMA techniques, and SMA techniques as a package in the listed public limited companies in Bangladesh. In addition to this, industry wise usage rate of SMA techniques is also presented here. Moreover, this chapter concentrates on the perceived benefits of using a specific SMA technique and SMA techniques as a package. What specific SMA techniques are going to be emphasized in the near future by the respondent companies are also discussed in this chapter. Furthermore, respondents' demographic profiles including their age, gender, education, experience, and job title are also presented. Finally, descriptive statistics for contingent variables such as several dimensions of business strategy, organizational structure and culture, process characteristics, environmental uncertainty, environmental hostility and institutional factors affecting the decisions to adopt SMA techniques are presented.

#### **6.2 General information about the Respondents**

##### **6.2.1 Age, gender, experience and qualification**

Table 6.1 presents demographic profile of the respondents. In terms of qualification, the Table shows that 74 of 83 respondents hold at least a professional degree in accounting such as Chartered Accountant (CA) or Cost and Management Accountant (CMA). In other words, about 89% of the respondents hold professional degree in accounting. 71 (85%) of them are qualified cost and management accountants.

Table 6.1: Age, gender, experience and qualification of respondents

Demographic profile	Frequency	Percentage	Cumulative percentage
<b>Qualification</b>			
Professional accountant (e.g., CA, CMA)	74	89.16	89.16
Postgraduate (e.g., MBA, MCOM)	9	10.84	100
<b>Total</b>	<b>83</b>	<b>100</b>	
<b>Gender</b>			
Male	76	91.57	91.57
Female	7	8.43	100
<b>Total</b>	<b>83</b>	<b>100</b>	
<b>Age</b>			
30- less than 35 years	12	14.46	14.46
35- less than 40 years	30	36.14	50.60
40- less than 45 years	20	24.10	74.70
45- less than 50 years	7	8.44	83.14
50- less than 55 years	9	10.84	93.98
55- less than 60 years	3	3.62	97.60
60- less than 65 years	1	1.20	98.80
65- less than 70 years	1	1.20	100
<b>Total</b>	<b>83</b>	<b>100</b>	
<b>Experience</b>			
Less than 5 years	2	2.41	2.41
5- less than 10 years	19	22.89	25.3
10- less than 15 years	27	32.53	57.83
15- less than 20 years	14	16.87	74.7
20- less than 25 years	11	13.25	87.95
25- less than 30 years	5	6.03	93.98
30- less than 35 years	3	3.61	97.59
35- less than 40 years	2	2.41	100
<b>Total</b>	<b>83</b>	<b>100</b>	

As the topic of the present study (SMA) requires a deeper understanding of the respondents on management accounting practices, certified CMA seems to be appropriate personnel to respond to the questionnaire even if they do not hold a position of ‘management accountant’ in their organization.

With respect to the proportion of gender of the respondents, the dominance of male respondents over female seems to be apparent. 76 of 83 or about 91% of the respondents are from the male category. This result signifies the abundance of male CMA serving corporations in Bangladesh as compared to their female counterparts. In regard to the age of the respondents, 30 to 44 years represents about 75% of the respondents. More specifically, the plenty of respondents with an age between 35 and 39 years seems to be more apparent. Respondents with an age over 50 years are scarce in the sense that they represent only (14 of 83) 17% of the sample.

Consistent with the age of respondents, the Table displays the dominance of 10-15 years experience category. In this class, 27 of 83 or 33% of the respondents have experience between 10 and 15 years followed by 5-10 years class (19 of 83 or 23%) and 15-20 years class (14 of 83 or 17%). Respondents with less than 5 years and more than 30 years are extremely rare as displayed by the Table.

### **6.2.2 Job title of respondents**

Table 6.2 presents the distribution of job title of respondents. The Table shows a wide variety of job titles held by the respondents ranging from Chief Executive Officer (CEO) to finance executive. As can be seen in the Table, there exhibits the dominance of Chief Financial Officer (CFO) (15 of 83 or 18%) followed by Assistant General Manager (AGM) (9 of 83 or 11%) and Senior Manager (SM) (8 of 83 or 10%). The underlying reason for the presence of a wide range of job title can attributed to the fact that banking industry attached a range of unique job title (such as assistant vice president, first assistant vice president, first vice president senior assistant vice president, executive vice president, senior executive vice president and so on) which is not found in the non-financial industry.

Table 6.2: Job title of respondents

Job Title	Frequency	Percentage	Cumulative percentage
Chief Executive Officer (CEO)/ Managing Director (MD)	3	3.61	3.61
Deputy Managing Director (DMD)	2	2.42	6.03
Executive Director (ED)	1	1.20	7.23
Chief Financial Officer (CFO)	15	18.07	25.30
Company secretary	3	3.61	28.91
Deputy CFO	1	1.20	30.11
Senior Vice President (SVP)	2	2.42	32.53
Senior Executive Vice President (SEVP)	1	1.20	33.73
Executive Vice President (EVP)	1	1.20	34.92
Vice President (VP)	4	4.82	39.75
Senior Assistant Vice President (SAVP)	4	4.82	44.57
First Vice President (FVP)	1	1.20	45.77
First Assistant Vice President (FAVP)	2	2.42	48.19
Assistant Vice President (AVP)	3	3.61	51.80
Head of account	1	1.20	53.00
Head of internal audit	2	2.41	55.41
General Manager (GM)	6	7.23	62.64
Senior manager	8	9.64	72.28
Finance manager	2	2.42	74.70
Deputy General Manager (DGM)	5	6.02	80.72
Assistant General Manager (AGM)	9	10.84	91.56
Senior Principal Officer (SPO)	4	4.82	96.38
Senior Executive Officer (SEO)	2	2.42	98.80
Finance executive	1	1.20	100
<b>Total</b>	<b>83</b>	<b>100</b>	

However, the respondents' job titles indicate the inclusion of both top and middle level management which provides additional insight on the subjects of the study.

### 6.2.3 General information about the responding companies

Table 6.3 presents age, number of employees, total assets and market capitalization of the sample companies. As can be seen in the Table, the highest number of companies age (36 of

83 or 43%) lies between 20 to 29 years. This is followed by the 10 to 19 years class (20 of 83 or 24%) and 30 to 39 years class (11 of 83 or 13%). About one-fifth (19 %) of the Companies have an age over 40 years while less than 10% of the companies (8%) have an age at or above 50 years.

With respect to the number of employees, majority of the companies (53%) have employees between 1000 and 4999 followed by the class '100- less than 500' (22%) and the class '5000- less than 10000' (11%). Between the two extremes, only 3 of 83 companies employed less than 100 employees while only 2 of 83 companies employed 10,000 or more employees.

In the book value of total assets category,

In terms of the book value of total assets, the dominance of 'at or above 10,000 million Bangladeshi Taka (BDT)' is apparent. The Table shows that about two-third (66.27%) of the companies have total assets at or above 10,000 million BDT. There exists no company having less than 100 million BDT worth total asset. 16.87% of the companies have 1,000- less than 5,000 million BDT worth total assets, and 13.25% have total assets between 1000- less than 5000 million BDT.

With respect to the market capitalization of the responding companies, more than half (50.60%) of the companies have market capitalization over 10,000 million BDT. Parallel to the book value of total assets, the next dominant group is the '1000- less than 5000 million BDT' which is about one-fourth (24.10%) of the sample companies. Moreover, the frequency of '5,000- less than 10,000 million BDT' market capitalization class is not negligible.



Table 6.3: General information of the responding companies as on 31 December 2019

<b>Job Title</b>	<b>Frequency</b>	<b>Percentage</b>	<b>Cumulative percentage</b>
<b>Age of the responding companies</b>			
10- less than 20 years	20	24.10	24.10
20- less than 30 years	36	43.37	67.47
30- less than 40 years	11	13.25	80.72
40- less than 50 years	9	10.84	91.56
At or above 50 years	7	8.44	100
<b>Total</b>	<b>83</b>	<b>100</b>	
<b>Number of employees</b>			
Less than 100	3	3.61	3.61
100- less than 500	18	21.69	25.30
500- less than 1000	7	8.44	33.74
1000- less than 5000	44	53.01	86.75
5000- less than 10000	9	10.84	97.59
At or above 10000	2	2.41	100
<b>Total</b>	<b>83</b>	<b>100</b>	
<b>Total assets</b>			
Less than 100 million BDT	0	0	0
100- less than 500 million BDT	2	2.41	2.41
500- less than 1000 million BDT	1	1.20	3.61
1000- less than 5000 million BDT	14	16.87	20.48
5000- less than 10000 million BDT	11	13.25	33.73
At or above 10000 million BDT	55	66.27	100
<b>Total</b>	<b>83</b>	<b>100</b>	
<b>Market capitalization</b>			
Less than 100 million BDT	0	0	0
100- less than 500 million BDT	2	2.41	2.41
500- less than 1000 million BDT	4	4.82	7.23
1000- less than 5000 million BDT	20	24.10	31.33
1000- less than 5000 million BDT	15	18.07	49.40
At or above 10000 million BDT	42	50.60	100
<b>Total</b>	<b>83</b>	<b>100</b>	

## **6.3 SMA usage rate**

### **6.3.1 SMA usage for the full sample**

Table 6.4 presents descriptive statistics for SMA usage as a package, as a specific group of techniques and as a particular technique for the entire sample. Among the costing oriented SMA techniques, strategic costing is the most popular (mean value 4.5301 in the scale 1-7) technique in the sample companies followed by target costing (mean value 3.6626). Unfortunately, the remaining techniques under the costing category exhibits below average usage rate (e.g., attribute costing 1.5542, ABC 2.2891, and quality costing 2.4457). This result implies an enhanced usage of costing information in the strategy formulation process in the sample companies. Moreover, a higher than average usage of target costing signifies their attractiveness to the Bangladeshi companies in the endeavor to control majority of the costs at the earlier stage of production and operation. A below average usage rate of ABC (2.2891) indicates the reluctance of the responding companies to accumulate, process and uses of activity-based data. The misery of scores of attribute costing (1.5542) and life-cycle costing (1.8313) implies their lower popularity and familiarity to the sample companies.

Surprisingly, all the competitor-focused SMA techniques demonstrate higher usage rate in the sample companies. Of the three competitor-oriented techniques, competitive position monitoring (CPM) appears to be the highly used (mean 4.4819) technique followed by competitor performance appraisal based on published financial statements (CPAFS) (4.0722) and competitor cost assessment (CCA) (4.0). This result signifies that Bangladeshi companies place must weight on competitor related data to gain competitive advantage. Additionally, these companies concentrate more on retaining competitive position in the market as suggested by the highest score on CPM in the competitor-focused SMA techniques category.

Table 6.4: Descriptive statistics of SMA usage

Variables	(N=83)				
	Mean	Standard Deviation	Median	Minimum	Maximum
Activity based costing/management	2.2891	1.5022	2	1	5
Attribute costing	1.5542	1.1289	1	1	5
Life cycle costing	1.8313	1.4298	1	1	5
Quality costing	2.4457	1.6546	1	1	5
Strategic costing	4.5301	0.8601	5	1	5
Target costing	3.6626	1.5002	4	1	5
Value chain costing	2.2048	1.6136	1	1	5
Competitor cost assessment	4.0000	1.4142	5	1	5
Competitive position monitoring	4.4819	1.1514	5	1	5
Competitor performance appraisal based on financial statements	4.0722	1.4880	5	1	5
Customer profitability analysis	3.8072	1.5417	5	1	5
Lifetime customer profitability analysis	1.0602	0.2858	1	1	3
Valuation of customers as assets	1.1686	0.6952	1	1	5
Benchmarking	4.0120	1.3659	5	1	5
Brand valuation	1.8915	1.3435	1	1	5
Balanced scorecard	4.2048	1.0905	5	1	5
Strategic pricing	4.4698	1.1617	5	1	5
Overall SMA usage	3.0403	0.6298	3.0588	1.2941	4.3529
Costing-based SMA usage	2.6454	0.8363	2.5714	1.2857	4.4286
Competitor-oriented SMA usage	4.1847	1.1643	5	1	5
Customer-focused SMA usage	2.0120	0.6013	2.3333	1	4
Other SMA usage	3.6445	0.8162	4	1.5	5

However, customer-oriented SMA techniques experience a lower usage rate (lifetime customer profitability analysis 1.0602 and valuation of customer as assets 1.1686) in the sample companies except for customer profitability analysis (CPA) (3.8072). This lower usage may be attributed to the fact that customer related detailed data are not available in the companies' information system. Moreover, accumulating large volume of customers' related data requires incurrence of additional costs which might further discourage companies to

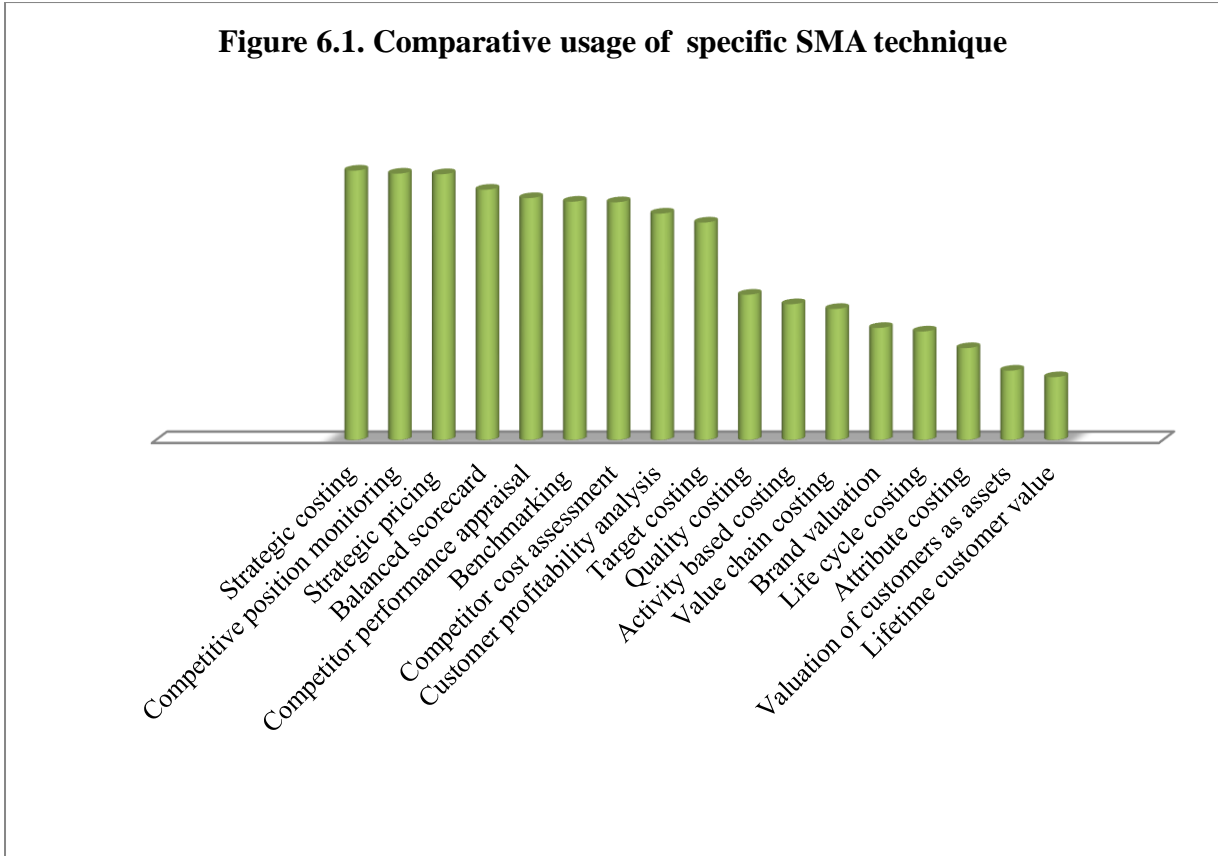
make greater usage of customer-focused SMA techniques. These arguments appear to be more pertinent for lower usage customer accounting techniques such as lifetime customer profitability analysis (1.0602) and valuation of customer as assets (1.1686).

With respect to the planning and other SMA techniques, strategic pricing (4.4698) appears to be the highly used technique followed by integrated performance measurement (IPM)/balanced scorecard (BSC) (4.2048) and benchmarking (4.0120). Brand valuation (1.8915) seems to be the lowest used SMA technique in this category. These results imply that the sample companies place considerable weight on the reaction of competitors to the changes in the company's exiting price. The higher usage rate of BSC indicates that the sample companies practice both financial and non-financial performance measurement techniques including customer satisfaction, learning and growth, and innovation.

Moreover, the higher usage rate of benchmarking indicates the attractiveness of the practices of comparing inter-company and intra-company performance in the endeavor to improve company's performance. The difficulties of attaching an appropriate value for a company's brand might be the leading cause of lower usage rate of brand valuation technique. This scenario is more vigilant in the Figure 6.1.

More importantly, the overall SMA usage shows an above average score (3.0403), which indicates the awareness of the sample companies in regard to the strategic oriented management accounting techniques. With respect to the particular group of SMA techniques, the Table demonstrates the supremacy of competitor-focused techniques (4.1847) over other group of techniques such as costing-based techniques (2.6454), customer-oriented techniques (2.0120), and planning and other techniques (3.6445).

**Figure 6.1. Comparative usage of specific SMA technique**



### 6.3.2 Comparative SMA usage across the Globe

Table 6.5 presents comparative usage of SMA techniques around the world. The second column of the Table shows that a number of studies have been conducted on the SMA usage as a package using the developed countries context including the USA, UK, Australia, New Zealand, Italy and Slovenia. Surprisingly, no prior studies have documented the picture of the usage of SMA techniques in the developing countries. More interestingly, the number of SMA techniques included in different studies is different.

As can be seen in the second column of the Table, the first international study was conducted by Guilding et al. (2000) exhibiting the SMA usage of USA, UK and New Zealand firms. Their findings ranked competitive position monitoring (CPM) as the number one SMA technique in the USA, UK and New Zealand, followed by CPAFS (2<sup>nd</sup> in USA and UK, 3<sup>rd</sup> in New Zealand), and strategic pricing (3<sup>rd</sup> in USA and UK, 2<sup>nd</sup> in New Zealand).

Table 6.5: Comparison of SMA usage with previous studies

Country	Developed countries*																						Developing country	
	USA				UK				Australia				New Zealand				Italy				Slovenia		Bangladesh	
Study	Guilding et al. (2000)		Cravens and Guilding (2001)		Guilding et al. (2000)		Hadid and Al-Sayed (2021)		Cadez and Guilding (2007)		Nuhu et al. (2017)		Guilding et al. (2000)		Cinquini and Tenucci (2007)		Cinquini and Tenucci (2010)		Cescon et al. (2019)		Cadez and Guilding (2007)		This study	
Sample size	127		120		63		149		26		127		124		92		92		55		134		83	
Scale used	1-7		1-7		1-7		1-7		1-7		1-7		1-7		1-7		1-7		1-7		1-7		1-7	
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
ABC/M**	NA		3.54	6	NA		3.03	7	NA		4.02	3	NA		3.51	12	3.27	9	NA		NA		2.29	11
Attribute costing	2.37	10	NA		1.91	10			1.71	15	NA		2.54	9	5.28	1	NA		4.03	11	3.60	9	1.55	15
LCC**	2.73	9	2.73	10	2.60	8	2.23	10	2.21	12	NA		2.43	10	3.19	14	2.92	11	4.29	10	2.90	12	1.83	14
Quality costing	3.07	8	3.07	9	3.11	6	2.54	9	1.67	16	NA		3.46	5	4.31	7	4.12	4	4.60	8	4.31	2	2.44	10
Strategic costing	3.43	5	NA		3.72	5	3.18	5	3.33	7	NA		3.44	6	4.42	6	NA		NA		4.13	4	4.53	1
Target costing	3.19	6	3.19	7	2.90	7	3.21	4	2.00	14	4.16	2	3.16	7	3.84	9	3.62	6	4.92	5	3.64	8	3.66	9
VCC**	3.15	7	3.15	8	2.60	8	2.73	8	2.63	9	2.40	5	3.15	8	3.67	11	3.43	8	5.03	4	3.90	7	2.20	12
CCA**	4.09	4	4.09	4	4.37	4			3.96	4	NA		3.91	4	4.14	8	3.95	5	4.54	9	3.38	10	4.00	7
CPM**	4.93	1	4.93	1	5.20	1	3.58	3	4.40	1	NA		4.95	1	4.84	4	4.69	2	5.56	2	4.31	2	4.48	2
CPAFS**	4.50	2	4.50	3	4.78	2	3.17	6	4.04	3	NA		4.17	3	4.61	5	4.44	3	4.63	7	4.47	1	4.07	5
CPA**	NA		NA		NA		4.41	1	3.50	6	NA		NA		4.99	2	4.86	1	NA		3.90	7	3.81	8
LTCPA**	NA		NA		NA				2.35	11	NA		NA		NA		NA		NA		2.70	13	1.06	17
VCA**	NA		NA		NA				2.17	13	NA		NA		NA		NA		NA		2.08	14	1.17	16
Benchmarking	NA		4.59	2	NA				4.36	2	4.53	1	NA		3.82	10	3.61	7	NA		3.92	6	4.01	6
Brand valuation	2.35*	11	NA		2.50	9			2.52	9	NA		2.16	11	NA		NA		4.74	6	3.34	11	1.89	13
IPM/BSC**	NA		4.00	5	NA		3.59	2	2.83	8	3.16	4	NA		3.43	13	3.17	10	5.34	3	3.94	5	4.20	4
Strategic pricing	4.36	3	NA		4.73	3			3.88	5	NA		4.63	2	4.91	3	NA		5.72	1	4.29	3	4.47	3

Their finding was very close to the finding of the present study as the present study ranked CPM and strategic pricing as the second and third highly used technique. However, strategic costing is ranked first in the present study whereas it was ranked fifth in the Guilding et al. (2000) study. Cravens and Guilding (2001) also reported higher adoption rate of CPM and strategic pricing in the USA in addition to the 2<sup>nd</sup> highest usage of benchmarking. In the present study, benchmarking is ranked 6<sup>th</sup> by the sample companies.

Cadez and Guilding (2007) conducted another study focusing on the SMA usage of Australian and Slovenian companies. Their study also documented CPM, CPAFS and benchmarking as the utmost popular techniques in Australian and Slovenian firms. In contrast, Cinquini and Tenucci (2007) documented attribute costing and customer profitability analysis (CPA) as the highly used SMA techniques in the Italian manufacturing firms. Surprisingly, more recently Cescon et al. (2019) demonstrated lower usage of attribute costing in the Italian firms.

### **6.3.3 Industry wise SMA usage**

Table 6.6 shows the industry wise descriptive statistics on the SMA usage of the sample companies. Industries are classified into two broad categories: manufacturing and service. It is generally believed and documented by prior management accounting (MA) research (e.g., Bright et al, 1992, Drury et al, 1993, Innes and Mitchell, 1995 and Dugdale et al 2006; Cinquini and Tenucci, 2010) that MA techniques are more suitable to manufacturing undertakings as compared to service organizations. This may be true for costing oriented SMA techniques, but not for competitor, customer and other performance measurement oriented MAC and SMA techniques. The results of the present study also support this notion which exhibits a greater average score for overall SMA usage in the service companies (3.0808) as compared to manufacturing companies (3.0149). Moreover, Bromwich and

Bhimani (1994) argued that MA techniques would be equally of value in service organizations (Lorenz, 2015). Hussain and Gunasekaran also acknowledged the lack of MA researches in the service organizations.

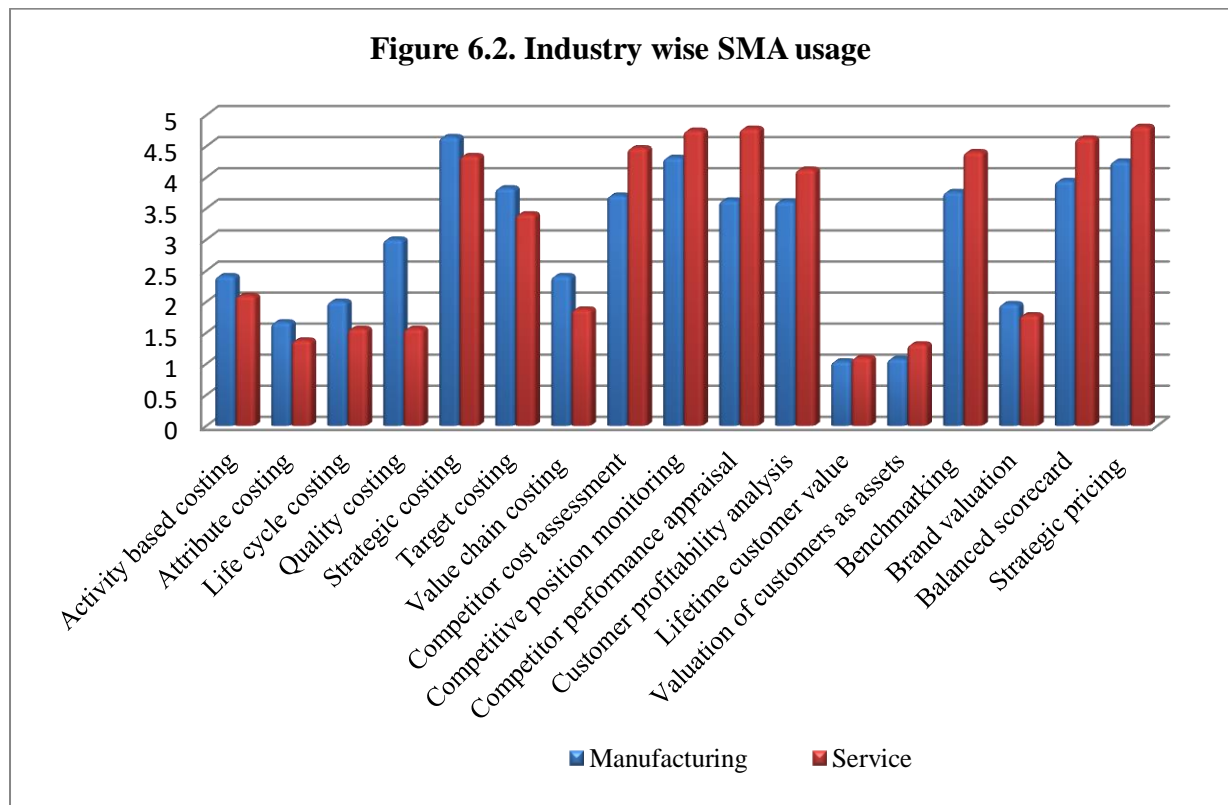
As can be seen in Table 6.6, the average score for costing-based SMA techniques is higher in the manufacturing companies (2.8515) as compared to the service organizations (2.3169). However, competitor, customer, performance measurement and planning oriented SMA techniques exhibit higher scores in the service organizations than in the manufacturing organizations. For example, the average score on competitor-focused SMA techniques in service companies is 4.6666 which is substantially higher than the score (3.8823) in the manufacturing companies. The similar is the case for customer-oriented SMA techniques (2.1770 in service companies and 1.9084 in manufacturing companies) and performance measurement and planning techniques (3.9062 in service companies and 3.4803 in manufacturing companies). Accordingly, it can be held that SMA techniques received considerable attention of the Bangladeshi service companies.



Table 6.6: Industry wise descriptive statistics of SMA usage

Variables	Manufacturing company (N=51)					Service company (N=32)				
	Mean	SD	Median	Min.	Max.	Mean	SD	Median	Min.	Max.
Activity based costing	2.4117	1.5643	2	1	5	2.0937	1.3995	1	1	5
Attribute costing	1.6666	1.2274	1	1	5	1.3750	0.9418	1	1	5
Life cycle costing	2.0000	1.5748	1	1	5	1.5625	1.1341	1	1	5
Quality costing	3.0000	1.6852	3	1	5	1.5625	1.1622	1	1	5
Strategic costing	4.6470	0.8904	5	1	5	4.3437	0.7873	5	3	5
Target costing	3.8235	1.4241	5	1	5	3.4062	1.6036	4	1	5
Value chain costing	2.4117	1.6991	1	1	5	1.8750	1.4312	1	1	5
Competitor cost assessment	3.7058	1.5658	4	1	5	4.4687	0.9832	5	2	5
Competitive position monitoring	4.3137	1.3782	5	1	5	4.7500	0.5679	5	3	5
Competitor performance appraisal based on financial statements	3.6274	1.6608	5	1	5	4.7812	0.7506	5	1	5
Customer profitability analysis	3.6078	1.6380	4	1	5	4.1250	1.3380	5	1	5
Lifetime customer profitability analysis	1.0392	0.1960	1	1	2	1.0937	0.3901	1	1	3
Valuation of customers as assets	1.0784	0.5601	1	1	5	1.3125	0.8590	1	1	4
Benchmarking	3.7647	1.5177	4	1	5	4.4062	0.9791	5	2	5
Brand valuation	1.9607	1.4277	1	1	5	1.7812	1.2110	1	1	5
Balanced scorecard	3.9411	1.2395	4	1	5	4.6250	0.6090	5	3	5
Strategic pricing	4.2549	1.4119	5	1	5	4.8125	0.3965	5	4	5
Overall SMA usage	3.0149	0.7330	3.1764	1.2941	4.3529	3.0808	0.4238	3.0588	2.0588	4.2941
Costing-based SMA usage	2.8515	0.8576	2.8571	1.4286	4.4286	2.3169	0.6948	2.1428	1.2857	4.4286
Competitor-oriented SMA usage	3.8823	1.3396	4.3333	1	5	4.6666	0.5487	5	3.3333	5
Customer-focused SMA usage	1.9084	0.6221	2	1	4	2.1770	0.5353	2.3333	1	3.3333
Other SMA usage	3.4803	0.9418	3.75	1.5	5	3.9062	0.4655	4	3	5

This picture is clearly displayed in the following figure.



With respect to the usage of specific SMA techniques, all the costing-oriented SMA techniques display a higher score in manufacturing companies than in the service companies. For example, the mean score on ABC usage in manufacturing companies is 2.4117 while the figure is 2.093 in the service companies. The mean scores of other costing-oriented techniques also depicted the identical results (e.g., quality costing 3.0 in manufacturing companies and 1.5625 in service companies, strategic costing 4.6470 in manufacturing companies and 4.3437 in service companies).

In contrast, all the specific competitor, customer and performance measurement and planning-oriented SMA techniques depicted a higher score in the service companies than the scores in the manufacturing companies. For example, the average scores on competitor cost assessment  $4.4687 > 3.7058$ , competitive position monitoring  $4.75 > 4.3137$ , customer

profitability analysis 4.125>3.6078, and strategic pricing 4.8125>4.2549 are all higher in the service companies than in the manufacturing companies.

### 6.3.4 Frequency of specific SMA techniques usage

The following section presents frequency and percentage of each SMA technique used in the sample companies. The purpose of such presentation is to learn about which technique is being used to what extent. More specifically, to what extent (‘not at all’ to ‘to a great extent’) a particular SMA technique (ABC, BSC) is being used in what proportion of the responding companies.

Table 6.7: ABC usage rate

	Frequency	Cumulative frequency	Percent	Cumulative percent
Not at all	41	41	49.4	49.4
To a little extent	8	49	9.6	59.0
Slightly below moderate level	15	64	18.1	77.1
Moderately usage	7	71	8.4	85.5
Slightly above moderate level	12	83	14.5	100
Above moderate level	0	83	0	100
To a great extent	0	83	0	100
Total	83		100.0	

As displayed in the Table 6.7, about half of the (49.4%) companies never used activity-based costing (ABC) in their companies, one-tenth (9.6%) of the companies used ABC to a little extent, 18.1% used the technique slightly below moderate level, and another 8.4% used at a moderate level. Only 14.5% of the companies used ABC slightly above moderate level in their organizations to make accurate calculations of the costs of operation and production. Surprisingly, neither of the companies used ABC ‘to a great extent’ or ‘above moderate level’.

Table 6.8: Attribute costing usage rate

	Frequency	Cumulative frequency	Percent	Cumulative percent
Not at all	63	63	75.9	75.9
To a little extent	6	69	7.2	83.1
Slightly below moderate level	6	75	7.2	90.4
Moderately usage	4	79	4.8	95.2
Slightly above moderate level	4	83	4.8	100
Above moderate level	0	83	0	100
To a great extent	0	83	0	100
Total	83		100.0	

The picture of attribute costing is even worse as displayed in Table 6.8. Majority of the companies (three-fourth or 75.9%) did not use attribute costing in their organizations.

About 7.2% of the companies ‘to a little extent’ and ‘slightly below moderate level’ used the technique, and other 4.8% used the technique at ‘moderate level’ and ‘slightly above moderate level’. Thus, the use of attribute costing is very limited in the context of Bangladeshi listed companies.

Table 6.9: LCC costing usage rate

	Frequency	Cumulative frequency	Percent	Cumulative percent
Not at all	59	59	71.1	71.1
To a little extent	2	61	2.4	73.5
Slightly below moderate level	9	70	10.8	84.3
Moderately usage	3	73	3.6	88.0
Slightly above moderate level	10	83	12.0	100.0
Above moderate level	0	83	0	100
To a great extent	0	83	0	100
Total	83		100.0	

Table 6.9 displays the use of life-cycle costing (LCC). Parallel to the scenario of attribute costing, the use of LCC also exhibits a lower usage. About 71% of the companies did not use the technique, while 2.40% used ‘to a little extent’, 10.8% used ‘slightly below moderate level’, 3.6% used ‘moderate level’ and 12% used LCC ‘slightly above moderate

level’ in their organizations. The difficulties of accumulating and analyzing data over the life of the product and the high level of uncertainty associated with their estimation might discourage the extensive use of LCC in the sample companies.

Table 6.10: QC costing usage rate

	Frequency	Cumulative frequency	Percent	Cumulative percent
Not at all	42	42	51	51
To a little extent	4	46	5	56
Slightly below moderate level	10	56	12	68
Moderately usage	6	62	7	75
Slightly above moderate level	7	69	8	83
Above moderate level	9	78	11	94
To a great extent	5	83	6	100
Total	83		100	

Table 6.10 also depicts a lower usage rate of quality costing (QC). More than half of the companies did not use QC, while only one-fifth (12%) companies used the technique ‘slightly below moderate level’ in their companies. QC is also found as moderately used (7%), used slightly above moderate level (8%), considerably above moderate level (11%), and to a great extent (6%).

Table 6.11: Strategic costing usage rate

	Frequency	Cumulative frequency	Percent	Cumulative percent
Not at all	2	2	2	2
To a little extent	0	2	0	2
Slightly below moderate level	8	10	10	12
Moderately usage	15	25	18	30
Slightly above moderate level	28	53	34	64
Above moderate level	13	66	16	80
To a great extent	17	83	20	100
Total	83		100	

In contrast, the use of strategic costing is considerably high in the sample companies as displayed by Table 6.11. About one-third (34%) of the companies used strategic costing ‘slightly above moderate level’ in their costing portfolios which signifies its attractiveness to

the sample companies. Moreover, another one-fifth (18%) companies used the technique at ‘moderate level’; taking together these two figures more than half (52%) of the companies make regular usage of strategic costing technique. More importantly, strategic costing is used at above moderate level (16%) and to a great extent (20%) in several of the sample companies.

Table 6.12: Target costing usage rate

	Frequency	Cumulative frequency	Percent	Cumulative percent
Not at all	13	13	16	16
To a little extent	7	20	8	24
Slightly below moderate level	12	32	14	38
Moderately usage	14	46	17	55
Slightly above moderate level	17	63	20	75
Above moderate level	8	71	11	86
To a great extent	12	83	14	100
Total	83		100	

The usage rate of target costing is also noteworthy as displayed by Table 6.12. Of the sample companies, 14% used target costing ‘to a great extent’ which signifies its popularity in the sample companies. About one-fifth (20%) of the companies used target costing ‘slightly above moderate level’ in their costing portfolios. Moreover, another one-fifth (17%) companies used the technique at ‘moderate level’; taking together these three figures about half (48%) of the companies make regular usage of target costing technique.

Table 6.13: Value-chain costing usage rate

	Frequency	Cumulative frequency	Percent	Cumulative percent
Not at all	49	49	59	59
To a little extent	5	54	6	65
Slightly below moderate level	6	60	7	72
Moderately usage	9	69	11	83
Slightly above moderate level	10	79	12	95
Above moderate level	4	83	5	100
To a great extent	0	83	0	100
Total	83		100	

This result signifies importance of TC in the listed companies in Bangladesh.

Surprisingly, Table 6.13 exhibits a very lower usage rate of value chain costing in the sample companies. Majority of the companies (59%) did not use the technique at all, while one third (7+11+12+5=35%) of the companies used the technique around moderate level in their companies. This result indicates the low acceptability of value-chain costing technique in the sample companies in Bangladesh.

Table 6.14: Competitor cost assessment usage rate

	Frequency	Cumulative frequency	Percent	Cumulative percent
Not at all	9	9	11	11
To a little extent	7	16	8	19
Slightly below moderate level	7	23	8	27
Moderately usage	12	35	15	42
Slightly above moderate level	10	45	12	54
Above moderate level	15	60	18	72
To a great extent	23	83	28	100
Total	83		100	

Table 6.14 to 6.16 show the usage rate of competitor-focused SMA techniques, all of which document a very high usage rate of the techniques in the sample companies. More specifically, three-fourth of the companies (15+12+18+28=73%) regularly used competitor cost assessment (at and above moderate level). Of these companies, 28% used this technique ‘to a great extent’ which indicates its high popularity among the sample companies.

Table 6.15: Competitive position monitoring usage rate

	Frequency	Cumulative frequency	Percent	Cumulative percent
Not at all	6	6	7	7
To a little extent	1	7	1	8
Slightly below moderate level	5	12	6	14
Moderately usage	6	18	7	21
Slightly above moderate level	25	43	31	52
Above moderate level	24	67	29	81

To a great extent	16	83	19	100
Total	83		100	

Competitive position monitoring appears to be the mostly used technique in this category. About 86% of the sample companies make regular usage of this technique. Of these companies, 19% used this technique ‘to a great extent’ which signifies its popularity in the sample companies. About 29% of the companies used this technique ‘above moderate level’ while 31% used this technique ‘slightly above moderate level’ in their SMA portfolios. However, only 7% used this technique at ‘moderate level’.

Table 6.16: Competitor performance appraisal based on published financial statements usage rate

	Frequency	Cumulative frequency	Percent	Cumulative percent
Not at all	11	11	13	13
To a little extent	5	16	6	19
Slightly below moderate level	7	23	8	27
Moderately usage	4	27	5	32
Slightly above moderate level	16	43	20	52
Above moderate level	25	68	30	82
To a great extent	15	83	18	100
Total	83		100	

Competitor performance appraisal based on published financial statements also seems to be one of the mostly used technique in this category. About 73% of the sample companies make regular usage of this technique. Of these companies, 18% used this technique ‘to a great extent’ which signifies its popularity in the sample companies. About 30% of the companies used this technique ‘above moderate level’ while 20% used this technique ‘slightly above moderate level’ in their SMA portfolios. However, only 5% used this technique at ‘moderate level’. These results indicate a high popularity of competitor-focused SMA techniques in the Bangladeshi listed companies.



Table 6.17: Customer profitability analysis usage rate

	Frequency	Cumulative frequency	Percent	Cumulative percent
Not at all	15	15	17	17
To a little extent	3	18	4	21
Slightly below moderate level	8	26	10	31
Moderately usage	14	40	17	48
Slightly above moderate level	23	63	28	76
Above moderate level	8	71	10	86
To a great extent	12	83	14	100
Total	83		100	

Table 6.17 to 6.19 displays the usage rate of customer-oriented SMA techniques. A low popularity of customer accounting is clearly evident in these Tables except for customer profitability analysis (CPA). More specifically, about half of the companies (17+28+10+14=69%) have regularly used CPA in their companies. Of these companies, 14% used this technique ‘to a great extent’ which signifies its popularity in the sample companies. About 10% of the companies used this technique ‘above moderate level’ while 28% used this technique ‘slightly above moderate level’ in their SMA portfolios. Moreover, another 17% used this technique at ‘moderate level’. These results indicate a high popularity of this SMA techniques in the Bangladeshi listed companies.

Table 6.18: Lifetime customer profitability analysis usage rate

	Frequency	Cumulative frequency	Percent	Cumulative percent
Not at all	79	79	95	95
To a little extent	3	82	4	99
Slightly below moderate level	1	83	1	100
Moderately usage	0	83	0	
Slightly above moderate level	0	83	0	
Above moderate level	0	83	0	
To a great extent	0	83	0	
Total	83		100.0	

Surprisingly, the regular usage rate of lifetime customer profitability analysis is zero (0). Only 5% of the sample companies used this technique ‘to a little extent’ and ‘slightly below moderate level’. The complex nature of data used for this technique might be the underlying cause of this low adoption. More specifically, estimating the lifetime of a product and the revenue and cost streams during this lifetime involves substantial uncertainty which demotivate the sample companies to adopt this technique widely by the responding companies.

Table 6.19: Valuation of customers as assets usage rate

	Frequency	Cumulative frequency	Percent	Cumulative percent
Not at all	78	78	94	94
To a little extent	0	78	0	94
Slightly below moderate level	2	80	2.5	96.5
Moderately usage	2	82	2.5	99
Slightly above moderate level	1	83	1	100
Above moderate level	0			
To a great extent	0			
Total	83		100	

The picture of another technique ‘valuation of customers as assets’ under customer accounting appears to be identical to the previous one. Only 6% of the respondent companies show their interest with respect to the use of this technique. The underlying cause of this low adoption appears to somewhat identical to the previous one. There exist several techniques for the valuation of customers as assets. However, the acceptability of those techniques seems to be apparently low to the corporate sectors. Specifically, the estimation of future cash flows that might be generated from a particular customer involves considerable uncertainty which discourage companies to adopt this technique to a wide extent.

Table 6.20: Benchmarking usage rate

	Frequency	Cumulative frequency	Percent	Cumulative percent
Not at all	8	8	10	10
To a little extent	7	15	8	19
Slightly below moderate level	7	22	8	28
Moderately usage	15	37	18	46
Slightly above moderate level	12	49	15	60
Above moderate level	19	68	23	83
To a great extent	15	83	18	100
Total	83		100	

Among the planning and performance measurement SMA techniques, benchmarking, BSC, and strategic pricing exhibit a considerably higher usage rate. For example, Table 6.20 shows that (15+12+19+15 or 61 of 83) 74% of the companies make regular usage of benchmarking (at or above ‘moderate level’) in their companies. Of these companies, 18% used this technique ‘to a great extent’ which signifies its popularity in the sample companies. About 23% of the companies used this technique ‘above moderate level’ while 15% used this technique ‘slightly above moderate level’ in their SMA portfolios. Moreover, another 18% used this technique at ‘moderate level’. These results indicate a high popularity of this SMA techniques in the Bangladeshi listed companies.

Table 6.21: Brand valuation usage rate

	Frequency	Cumulative frequency	Percent	Cumulative percent
Not at all	51	51	61.4	61.4
To a little extent	11	62	13.3	74.7
Slightly below moderate level	7	69	8.4	83.1
Moderately usage	7	74	8.4	91.6
Slightly above moderate level	7	83	8.4	100
Above moderate level	0			
To a great extent	0			
Total	83		100	

In contrast, the use of brand valuation as a SMA technique is fairly negligible as depicted by Table 6.21. Only 8.4% companies used it at moderate level and the identical (8.40%) used the technique ‘slightly above moderate level’ in their undertakings. The method of computing the value of a brand involves substantial complexities in terms of both the reliability of information use and the availability of information required to determine the value of a brand. Consequently, the resulting figure is bound to be considerably subjective which demoralize its use in the sample companies.

Table 6.22: Balanced scorecard usage rate

	Frequency	Cumulative frequency	Percent	Cumulative percent
Not at all	4	4	5	5
To a little extent	2	6	3	8
Slightly below moderate level	12	18	15	23
Moderately usage	20	38	24	47
Slightly above moderate level	15	53	17	64
Above moderate level	20	73	24	88
To a great extent	10	83	12	100
Total	83		100	

Nevertheless, a higher usage of BSC is well evidenced in Table 6.22, which shows that 65 of 83 or 78% of the companies used the technique at or above moderate level. Of these companies, 12% used this technique ‘to a great extent’ which signifies its popularity in the sample companies. About 24% of the companies used this technique ‘above moderate level’ while 17% used this technique ‘slightly above moderate level’ in their SMA portfolios. Moreover, another 24% used this technique at ‘moderate level’. This result implies the popularity of non-financial performance measurement systems in addition to the financial performance measurers in performance measurement portfolios in the sample companies.

Table 6.23: Strategic pricing usage rate

	Frequency	Cumulative frequency	Percent	Cumulative percent
Not at all	4	4	5	5
To a little extent	7	11	8	13
Slightly below moderate level	0	11	0	13
Moderately usage	7	18	8	21
Slightly above moderate level	25	43	30	51
Above moderate level	22	65	27	78
To a great extent	18	83	22	100
Total	83		100.0	

Table 6.23 reports the usage rate of strategic pricing which shows that 87% of the companies used the technique at or above moderate level. Of these companies, 22% used this technique ‘to a great extent’ which signifies its popularity in the sample companies. About 27% of the companies used this technique ‘above moderate level’ while 30% used this technique ‘slightly above moderate level’ in their SMA portfolios. Moreover, another 8% used this technique at ‘moderate level’. This higher usage rate of strategic pricing indicates the price sensitiveness of majority of the industries in the Bangladeshi companies. Moreover, they are very much cautious with respect to the reaction of the competitors in changing their own price portfolios.

#### **6.4 Perceived benefits derived from SMA usage**

Table 6.24 shows the average scores on the apparent benefits enjoyed from SMA usage. Despite the similarities between the usage scores and perceived benefits scores for majority of the techniques, there exist considerable deviations in the ranking for several techniques. For example, parallel to the lower scores of costing-based SMA techniques, the perceived benefits scores also exhibit lower scores for these techniques.

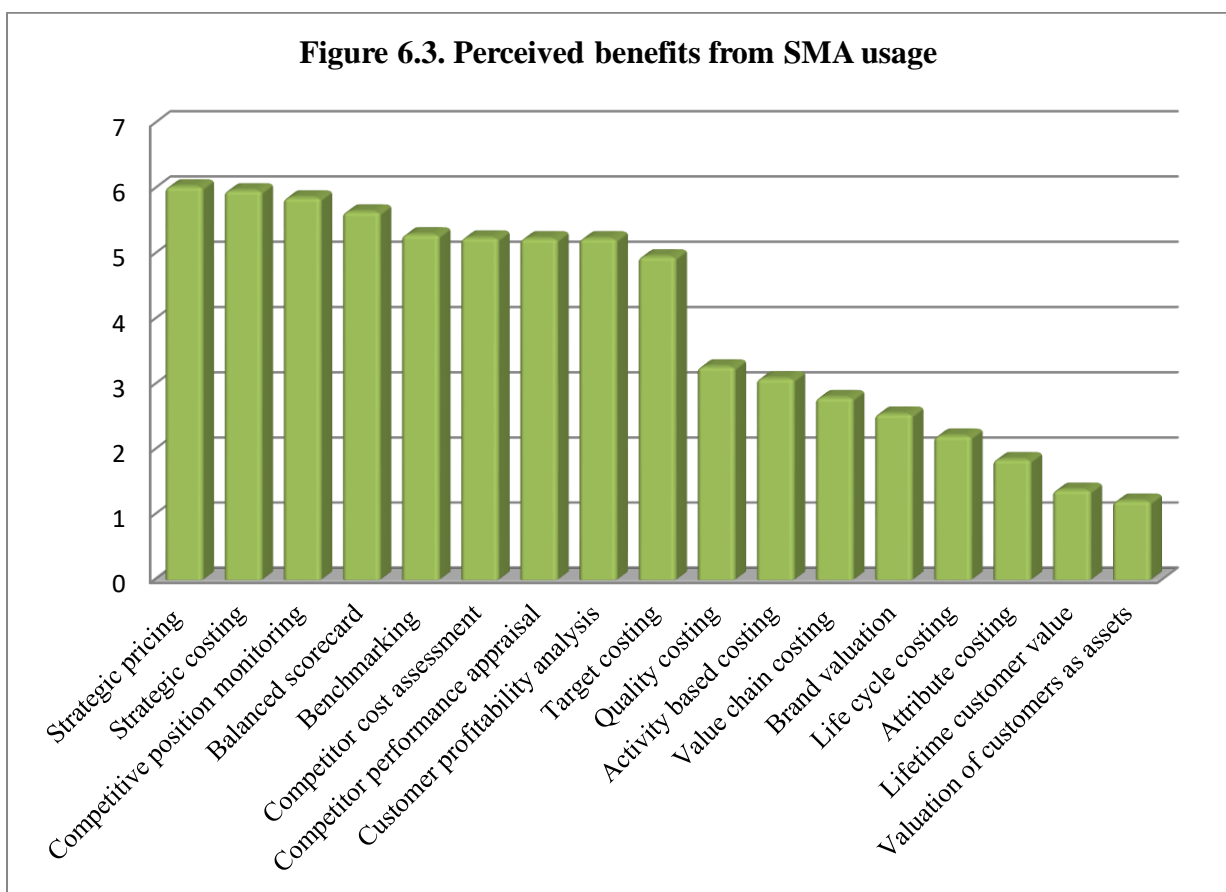
Table 6.24: Descriptive statistics of SMA benefits

Variables	(N=83)				
	Mean	Standard Deviation	Median	Minimum	Maximum
Activity based costing/management	3.0963	2.2879	2	1	7
Attribute costing	1.8554	1.6974	1	1	7
Life cycle costing	2.2168	2.0603	1	1	7
Quality costing	3.2771	2.4007	1	1	7
Strategic costing	5.9759	1.1259	6	1	7
Target costing	4.9638	2.0209	6	1	7
Value chain costing	2.8072	2.3188	1	1	7
Competitor cost assessment	5.2530	1.9683	6	1	7
Competitive position monitoring	5.8674	1.6212	7	1	7
Competitor performance appraisal based on financial statements	5.2409	1.9729	6	1	7
Customer profitability analysis	5.2409	1.8517	6	1	7
Lifetime customer profitability analysis	1.3855	1.2280	1	1	7
Valuation of customers as assets	1.2168	0.8271	1	1	6
Benchmarking	5.3012	1.8060	6	1	7
Brand valuation	2.5542	2.0909	1	1	7
Balanced scorecard	5.6506	1.6036	7	1	7
Strategic pricing	6.0361	1.4266	7	1	7
Overall SMA benefit	3.9964	0.9216	4	1.4118	6.3529

Moreover, akin to the popularity of competitor-focus SMA techniques, the responding companies also perceived these techniques as highly beneficial in cost management decisions.

Among the three customer-focused techniques, only customer profitability analysis is perceived highly beneficial by the sample companies. Additionally, analogous to the usage scores, benchmarking, BSC and strategic pricing are considered highly beneficial by the responding companies.

In terms of ranking shift, strategic pricing appears to take the first position which was held by the strategic costing in the usage scores. This fact is more vigilant in Figure 6.3 presented below. As can be seen in the Figure, strategic pricing is placed at the top of the highly beneficial SMA techniques followed by strategic costing and competitive position monitoring. In contrast, customer accounting techniques seems to be at the bottom of the useful SMA techniques.



### 6.5 Future emphasis on specific SMA techniques

Table 6.25 exhibits the results of the responses to the question ‘which SMA techniques they would like to use in the upcoming three years’. The results demonstrate the supremacy of strategic costing followed by strategic pricing, BSC and competitive position monitoring.

Table 6.25: Descriptive statistics of SMA future emphasis

Variables	(N=83)				
	Mean	Standard Deviation	Median	Minimum	Maximum
Activity based costing/management	5.0963	1.5897	6	1	7
Attribute costing	1.8795	1.6184	1	1	6
Life cycle costing	2.8433	2.1946	1	1	7
Quality costing	4.3373	2.3020	6	1	7
Strategic costing	6.4457	0.7691	7	4	7
Target costing	5.6987	1.1554	6	1	7
Value chain costing	4.0722	2.0528	3	1	7
Competitor cost assessment	5.7951	1.5041	6	1	7
Competitive position monitoring	6.0481	1.5053	7	1	7
Competitor performance appraisal based on financial statements	5.7108	1.6344	7	1	7
Customer profitability analysis	5.5301	1.6699	7	1	7
Lifetime customer profitability analysis	1.2771	1.1509	1	1	7
Valuation of customers as assets	1.2409	0.9826	1	1	7
Benchmarking	5.8674	0.9972	6	3	7
Brand valuation	2.6987	1.8395	1	1	7
Balanced scorecard	6.0602	0.8744	6	3	7
Strategic pricing	6.1807	1.1059	7	1	7
Overall SMA future emphasis	4.5166	0.8349	4.5882	1.5882	6.7059

This result suggests the continuous use of the strategic costing, competitor accounting and planning and performance measurement SMA techniques in the upcoming years in the sample companies. This result is also identical to the usage and benefits scores except for the BSC. Despite the fact that BSC could not find a place in the top three usage and highly beneficial SMA techniques, the responding companies are contemplating to allow BSC a place in the ‘top three’ SMA techniques group in the upcoming three years.

The comparative position of different SMA techniques in terms of ‘future emphasis’ is more vigilant in Figure 6.4 presented below. In addition to the continuous focus on strategic



costing, the figure suggests a greater usage of target costing and ABC in the Bangladeshi listed companies in the upcoming years. Unfortunately, the responding companies are very reluctant with the respect to the usage of value-chain costing, attribute costing, brand valuation, and customer accounting techniques in the upcoming years.

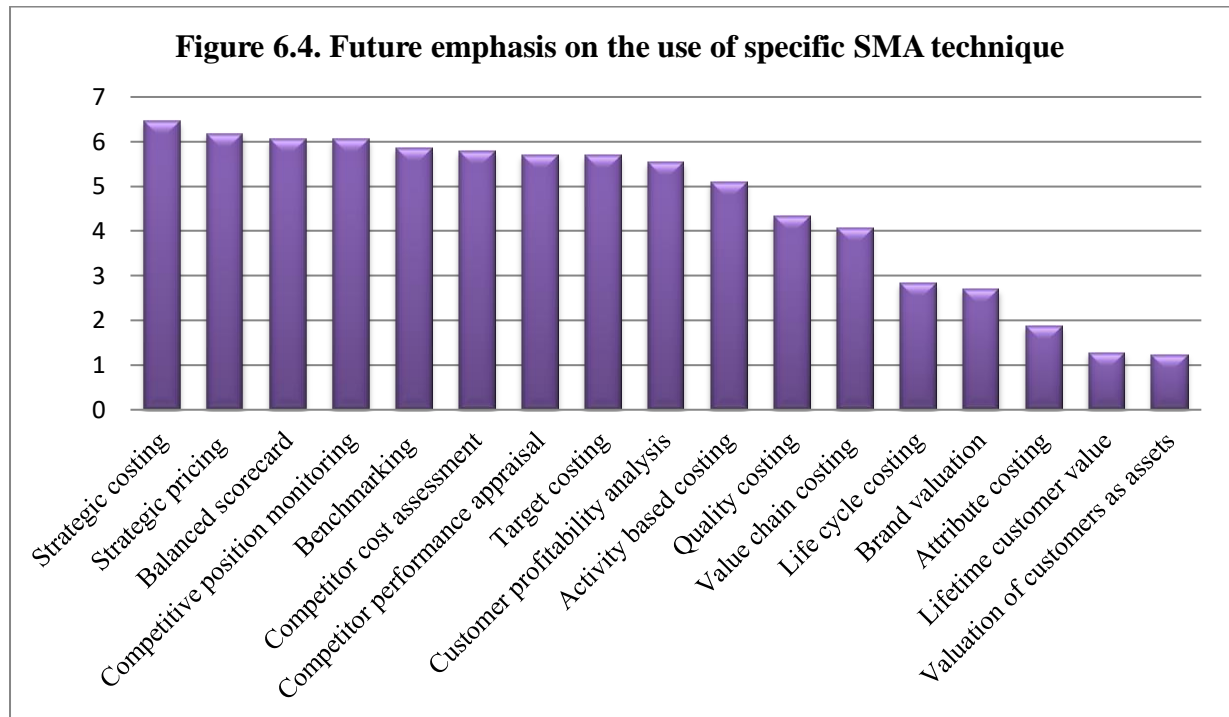
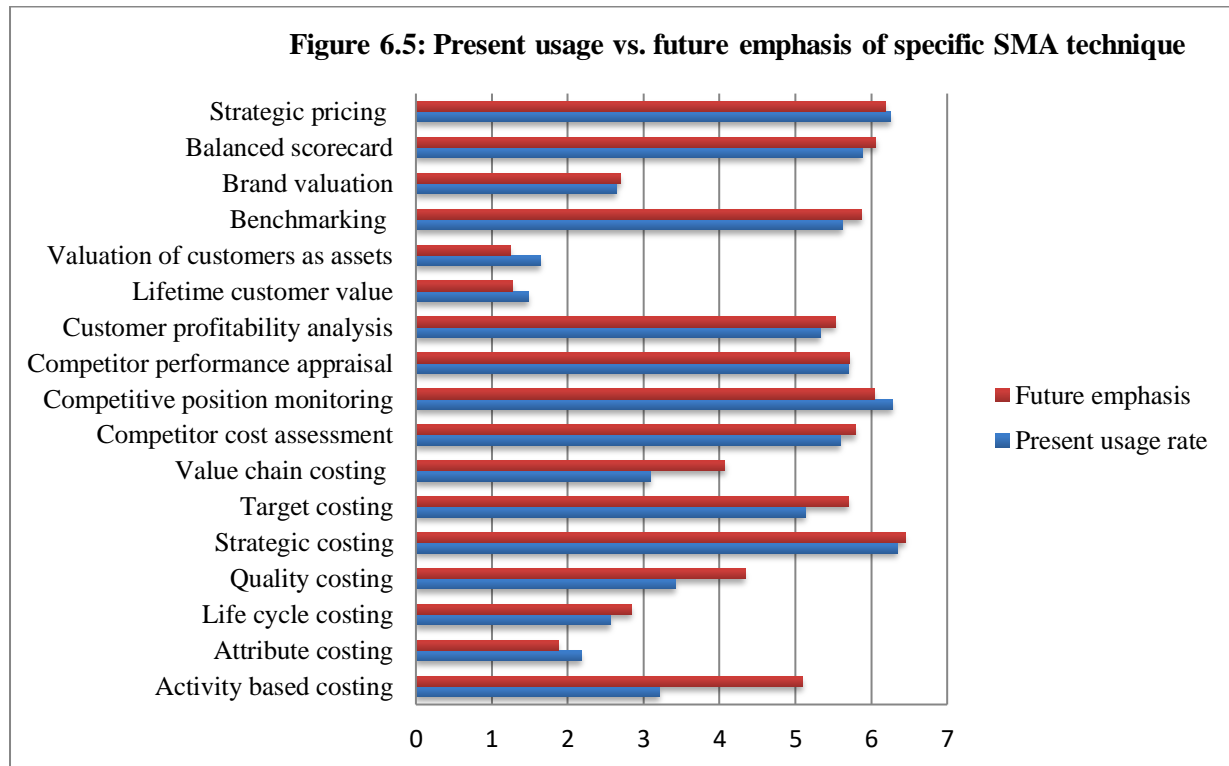


Figure 6.5 demonstrates the comparative pictures of usage and future emphasis on particular SMA techniques. In the costing-focused SMA category, ABC shows a more promising usage in the upcoming years in comparison to their present usage rate. Other costing-based techniques such as quality costing, target costing, value-chain costing, life-cycle costing and strategic costing also exhibit a higher score on ‘future emphasis’ as compared to their ‘present usage’ scores. This result suggests the potential use of these techniques in the upcoming years.

The figure also depicts a higher potential usage of competitor-focused SMA techniques in the upcoming years. Surprisingly, the future emphasis scores are still lower than the present

usage scores for two customer accounting techniques (lifetime customer profitability analysis and valuation of customers as assets). Nevertheless, the future emphasis perceptions of sample companies on planning and performance measurement techniques such as benchmarking and BSC suggest their enhanced usage in the foreseeable futures.



## 6.6 Descriptive statistics for variables used in the regression models

Table 6.26 shows descriptive statistics for independent and control variables used in the regression models. At the top of the list, descriptive statistics on several dimensions of business strategy are presented. Strategic pattern has four dimensions including prospector, defender, analyzer and reactor. The mean value of strategic pattern is 2.8554 indicating greater usage of prospector (33.70%) and analyzer (24.10%) strategy in the sample companies. Strategic mission also has four dimensions: build, hold, harvest, and divest. A mean value of 2.7951 for strategic mission is displayed in the Table which indicates the dominance of ‘build’ (33.70%) and ‘build’ (54.20%) strategy in the sample companies.

Table 6.26: Descriptive statistics of all variables used in the regression models

Variables	Theoretical range	(N=83)				
		Mean	Standard Deviation	Median	Minimum	Maximum
SPATTERN	(1-4)	2.8554	0.9643	3	1	4
SMISSION	(1-4)	2.7951	0.9207	2	2	4
SPOSITION	(1-3)	1.9156	0.8439	2	1	3
DECENTRA	(1-5)	3.0000	1.1995	3	1	5
ACTSTRUCT	(1-5)	4.5180	0.8462	5	2	5
UNPREDICT	(1-5)	2.5180	1.0164	2	1	5
FLUCTUATE	(1-5)	2.6746	0.9766	2	1	5
AMBIGUITY	(1-5)	2.4096	0.9111	2	1	5
LACKINFO	(1-5)	2.1927	0.8476	2	1	5
UNCEROUT	(1-5)	2.3855	0.8385	2	1	5
STRESSFUL	(1-5)	4.2891	1.2150	5	1	5
DOMINATE	(1-5)	3.6626	1.2714	5	1	5
RESTRICT	(1-5)	3.8554	1.2985	5	1	5
ENVCOMPLEX	(1-5)	2.9277	1.0567	2	2	5
ENVDIVERSE	(1-5)	3.2771	1.1509	2	1	5
ENVECO	(1-5)	3.0000	1.0706	2	1	5
MIMETIC	(1-5)	2.9759	1.0118	4	1	5
COERCIVE	(1-5)	2.8674	1.0906	2	1	5
NORMATIVE	(1-5)	1.7349	0.6641	2	1	4
POWERDIST	(1-5)	2.8313	1.0338	3	1	5
ORGINT	(1-5)	4.4096	0.8976	5	2	5
UNCERAVOID	(1-5)	3.7831	1.0712	5	1	5
CAREERFOC	(1-5)	4.2048	1.0679	5	2	5
MARKETORI	(1-5)	4.0843	1.2802	5	1	5
ADVTECHNO	(1-5)	4.3975	0.9619	5	1	5
PROCESSCOM	(1-5)	3.3975	1.1036	3	1	5
TASKUNCER	(1-5)	2.7108	1.1532	2	1	5
INTERDEPEND	(1-5)	4.3614	0.9183	5	2	5
ACCTPART	(1-5)	4.5060	0.8170	5	2	5
CMA	(1-5)	2.7229	4.4181	1	0	21
SIZE	(1-5)	2431.13	2541.97	2000	60	13000
INDUSTRY	(1-5)	1.6145	0.4896	2	1	2
PQUALITY	(1-5)	4.3253	0.8710	5	2	5

Differentiator, cost leader and focus are the three forms of strategic position studied in this study. The mean value of strategic position is found 1.9156 indicating the supremacy of differentiator (31.30%) and cost leader 39.8 % strategy in the sample companies.

The internal and external organizational independent variables have been measured using a liker scale ranging from 'very high' (assigned a value 5 for this) to 'very low' (assign a value 1). In measuring firm structure, the degree of decentralization and extent of structuring of activities are used in the present study. As displayed in Table 6.26 above, the degree of decentralization shows a score 3.00 indicating, on average, a moderate degree of decentralization. Surprisingly, the extent of decentralization of activities exhibits a very high score (4.5180) implying that activities in the sample companies are highly structured. Environmental uncertainty is measured by the degree of unpredictability (2.5180), fluctuating (2.6746), ambiguity (2.4096), and lack of information on environmental factors (2.1927) and uncertainty of outcomes (2.3855). The mean scores (presented in the brackets and Table) indicate a moderate level of environmental uncertainty faced by the sample companies.

Intensity of competition or environmental hostility is represented by to what extent competition in the industry are stressful (4.2891), dominating (3.6626), and restrictive (3.8554). The average scores presented here signifies a fierce competition in majority of the industries. Majority of the companies state the nature of competition as stressful (4.2891), and the extent of domination (3.6626) by few companies in a particular industry are also considerable. Moreover, entry restriction in majority of the industries is also apparent as demonstrated by the average scores (3.8554).

Environmental complexity represented by the rapidness in the technology development shows a mean value 2.9277 indicating an above average complexity of the environment. Environmental diversity measured by the varieties in inputs, customers, and products also exhibit considerably higher score 3.2771 which implies a highly diversified environment

faced by the firms. Parallel to this result, the level of pressures to maintain ecological environment and society's well being are also not negligible.

In measuring the institutional pressure, the present study uses three forms of pressures represented by coercive (exerted by government and other regulators), mimetic (emerged as a result of successful application of a particular technique in the industry), and normative pressures (originated from professional network and media).

The results show above average scores for mimetic (2.9759) and coercive pressure (2.8674), and below average score for normative pressure (1.7349). This result signifies that companies in Bangladesh feel the needs for the adoption and application of a particular technique such as SMA technique due to the successful application of them by their rivals in the industry. Coercive and normative pressures seem to be less apparent in the application of SMA technique.

Among the four constructs of the organizational culture, the supremacy of emphasis on organization interest over personal interest (4.4096) and career focus (4.2048) over uncertainty avoidance (3.7831) and power distance (2.8313) is reflected in the scores presented in the Table. These results imply that employees place more weights on organizational interest and career success. Moreover, power distance from one executive position to another is not very strong as suggested by the result. However, uncertainty avoidance attitude of employees is considerable in the sample companies. The mean value of market orientation is 4.0843 indicating the dominance of market oriented companies in the sample. Put differently, Bangladeshi companies focus more on customers' demand in offering the product or service portfolio than on producing standardized quality product.

The mean value of the use of advanced technology in operation is also very high (4.3975), which indicate the use of advanced and latest technology in production and operation of the sample companies. With respect to the process characteristics, process complexity (3.3975)

and interdependence of activities (4.3614) depict comparatively higher scores than task uncertainty (2.7108). These results signify a higher complexity and interdependencies of activities in the samples companies, and an average level of uncertainty associated with the tasks performed. The mean value of accountant's participation in strategic decision process (4.5060) also exhibits a very high degree of accountant's involvement in the strategic decision making. The average number of cost and management accountants (CMA) working in a company is 2.7229 implying that the sample companies employed, on average, 2 to 3 CMA. The average number of employees in the sample companies is 2431.13 with a minimum of 60 to a maximum of 13,000. The mean value of industry (1.6145) demonstrates the dominance of manufacturing companies over service companies. The perception of the respondents about the quality of their product or service is also apparently high (4.3253).

## **6.7 Chapter summary**

This chapter presents the descriptive statistics on the status of respondents, companies, and SMA techniques. Regarding the respondents' profile, majority of them are found to be professional accountants (89%), male (91%) and CFO (15 of 83), with age between 35 and 45 years, and experience between 5 and 25 years. With respect to the companies' characteristics, companies with age between 10 and 40 years, employees between 100 and 5000, and total assets and market capitalization over 10,000 million BDT are evident. With respect to the SMA usage rate, strategic costing in the costing-based SMA category, competitor-focused SMA techniques, CPA, benchmarking, strategic pricing and BSC are found as highly and moderately adopted in the sample companies. In terms of the industry difference, costing-based SMA techniques shows greater usage rate in the manufacturing companies whereas competitor, customer, and planning and performance focused SMA techniques are highly adopted in the service companies. Despite the lower usage of several

SMA techniques (e.g., BSC, quality costing, target costing), the perceived benefits and future emphasis is promising as opined by the responding companies.

## **CHAPTER SEVEN**

### **FACTORS CONTINGENT TO SMA ADOPTION DECISION**

#### **7.1 Introduction**

This chapter presents the regression results of SMA usage and internal and external organizational variables. Additionally, the Pearson's correlation matrix among the variables studied is also presented in this chapter. Among the internal organizational factors, the effects of several dimensions of business strategy, organizational culture, structure, and process characteristics on SMA usage have been studied. The presence of cost and management accountants, accountants' participation in the strategic decision making process, and the use of advanced technology in operations are also studied. With respect to the external variables, the effects of environmental uncertainty, hostility, complexity, ecology, and institutional pressures, on the level of SMA adoption are studied. In addition to the effect of these variables on a package of SMA techniques, the effects on a specific set of SMA (e.g., costing, competitor, and planning techniques) are also presented here. Finally, industry wise regression results are also highlighted to get additional insights on the differences between the sectors.

#### **7.2 Correlation matrix**

Table 7.1 presents the Pearson's correlation matrix among the dependent, independent and control variables. The matrix shows a significant positive relationship between strategic pattern, mission and SMA usage. These results imply a greater SMA usage in the prospector and build type companies than in the defender and hold type companies. Between the firm structure variables, the level of decentralization is significantly and positively associated with SMA usage.



Table 7.1: Pearson correlation matrix

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.SMA	1																
2.SPATTERN	.514**	1															
3.SMISSION	.351**	.859**	1														
4.SPOSITION	.218*	.464**	.527**	1													
5.DECENTR	.507**	.538**	.431**	.410**	1												
6.STRUCT	.014	-.042	.013	-.023	.048	1											
7.UNPRED	.167	.202	.154	-.020	.040	-.287**	1										
8.FLUCTUAT	.341**	.234*	.128	.040	.156	-.207	.774**	1									
9.AMBIGUITY	.278*	.179	.145	.109	.123	-.105	.703**	.851**	1								
10.LACKINFO	.102	.228*	.207	.125	.084	-.209	.548**	.519**	.607**	1							
11.UNCEROUT	.115	.160	.088	-.057	.255*	-.147	.521**	.512**	.461**	.375**	1						
12.STRESSFUL	.351**	.234*	.043	.024	.276*	-.017	.252*	.245*	.244*	.312**	.308**	1					
13.DOMINATE	.454**	.547**	.430**	.144	.472**	.051	.184	.176	.247*	.186	.226*	.332**	1				
14.RESTRICT	-.191	-.202	-.270*	-.200	-.243*	-.086	-.109	-.086	-.176	-.174	-.139	.004	-.141	1			
15.COMPLEX	.242*	.289**	.273*	.308**	.346**	-.039	.115	.060	-.020	.084	.128	.206	.063	-.070	1		
16.DIVERSE	.313**	.322**	.296**	.037	.230*	-.187	.168	.157	.077	.095	.166	.273*	.240*	.150	.317**	1	
17.ENVECO	.243*	.106	.087	.081	.152	-.188	.190	.175	.150	.161	.068	.159	.125	-.061	.237*	.069	1
18.INSTIND	.267*	.034	-.058	-.074	.050	.015	.226*	.288**	.328**	.133	.241*	.522**	.193	.099	-.059	.205	.371**
19.INSTREG	.081	-.053	-.100	-.118	-.028	-.202	.052	.119	.006	.054	.083	.195	-.173	.081	.076	-.029	.627**
20.INSTPROF	-.036	-.251*	-.289**	-.149	-.306**	-.252*	.025	.016	-.020	-.081	-.187	-.115	-.237*	.111	-.184	-.238*	.274*
21.POWERDIST	-.501**	-.355**	-.190	-.198	-.266*	.059	-.125	-.164	-.185	-.157	-.051	-.310**	-.239*	.227*	-.168	-.042	-.242*
22.ORGINT	.525**	.464**	.383**	.111	.317**	.215	.166	.279*	.240*	.248*	.322**	.416**	.443**	-.179	.109	.326**	.241*
23.UNAVOID	-.177	-.349**	-.243*	-.155	-.304**	.112	-.288**	-.243*	-.120	-.101	-.164	.030	-.144	.179	-.176	-.030	.096
24.CAREER	.365**	.467**	.390**	.317**	.409**	.178	.171	.182	.239*	.212	.238*	.405**	.402**	-.216	.143	.271*	.160
25.MARKET	.260*	.395**	.284**	.041	.262*	-.187	.247*	.295**	.221*	.198	.310**	.298**	.227*	-.154	.185	.183	.169
26.ADVTECH	.439**	.326**	.286**	.087	.486**	.148	-.064	.036	-.007	-.050	.034	.161	.370**	-.061	.209	.285**	.047
27.PROCESS	.082	-.003	-.003	.023	.138	-.210	.108	.133	.115	.021	-.023	.059	.149	.041	.088	-.040	.041
28.TASKUN	.165	.039	.116	.100	.071	.205	.005	.024	.126	.070	-.035	-.061	.066	-.256*	-.117	-.215	-.277*
29.INTERDEP	.231*	.184	.074	-.102	.133	.243*	.032	.051	.025	-.059	.054	.277*	.095	-.048	.115	.077	.136
30.ACCTPART	.421**	.419**	.366**	.133	.323**	.181	.150	.178	.160	.122	.139	.232*	.272*	-.149	.198	.277*	.112
31.SIZE	.129	.010	-.061	.124	.180	-.027	-.161	-.096	-.126	-.083	-.145	-.003	-.203	.256*	.117	.018	.279*
32.CMA	-.495**	-.387**	-.167	.062	-.324**	.114	-.296**	-.369**	-.326**	-.314**	-.369**	-.605**	-.499**	.199	-.213	-.349**	-.111
33.INDUSTRY	-.051	-.042	.066	.068	.042	-.160	-.182	-.112	.003	.034	-.138	-.241*	.161	-.127	-.290**	-.198	-.023
34.QUALITY	.409**	.391**	.327**	.336**	.397**	-.198	-.082	.026	.030	.145	.010	.106	.387**	-.120	.119	.031	.275*

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Table 7.1. Pearson correlation matrix (continued).

Variables	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
1.SMA																	
2.SPATTERN																	
3.SMISSION																	
4.SPOSITION																	
5.DECENTR																	
6.STRUCT																	
7.UNPRED																	
8.FLUCTUAT																	
9.AMBIGUITY																	
10.LACKINFO																	
11.UNCEROUT																	
12.STRESSFUL																	
13.DOMINATE																	
14.RESTRICT																	
15.COMPLEX																	
16.DIVERSE																	
17.ENVECO																	
18.MIMETIC	1																
19.COERCIVE	.428**	1															
20.NORMATIVE	.117	.372**	1														
21.POWERDIS	-.214	-.085	-.244*	1													
22.ORGINT	.454**	.243*	-.225*	-.293**	1												
23.UNAVOID	.130	.173	.124	.088	-.021	1											
24.CAREER	.298**	.034	-.215	-.311**	.726**	.050	1										
25.MARKET	.331**	.270*	-.145	-.256*	.511**	-.102	.353**	1									
26.ADVTECH	.085	.051	-.234*	-.263*	.515**	-.164	.359**	.329**	1								
27.PROCESS	.107	.065	-.071	.038	-.031	-.246*	-.163	.192	.217*	1							
28.TASKUN	-.058	-.215	-.276*	.112	-.096	-.071	-.169	-.008	.039	.178	1						
29.INTERDEP	.193	.073	-.141	-.153	.232*	-.192	.110	.275*	.222*	.073	-.027	1					
30.ACCTPART	.162	.035	-.177	-.259*	.579**	-.194	.467**	.332**	.517**	.004	-.179	.355**	1				
31.SIZE	.105	.339**	.211	.043	-.067	.205	.099	-.086	.010	-.127	-.055	-.075	.039	1			
32.CMA	-.405**	-.030	.170	.425**	-.580**	.201	-.430**	-.481**	-.315**	-.030	.077	-.267*	-.339**	.221*	1		
33.INDUSTRY	-.142	-.257*	-.056	.087	-.163	-.022	-.290**	-.200	-.085	.332**	.275*	-.093	-.116	-.086	.142	1	
34.QUALITY	.106	.149	.024	-.345**	.311**	-.133	.229*	.248*	.208	.270*	.083	.034	.177	.124	-.211	.326**	1

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Among the environmental uncertainty variables, only fluctuation (at 1% level of significance) and ambiguity (at 5% level of significance) in the external environmental factors are significantly and positively associated with SMA usage. In the environmental hostility or intensity of competition category, companies facing stressful and dominating competition seem to make greater usage of SMA techniques. Environmental complexity (at 5% level of significance), environmental diversity (at 1% level of significance), and environmental ecology (at 5% level of significance) are all associated significantly and positively with the SMA usage. These results indicate the influence of several external or environmental factors on the adoption of SMA techniques. Unfortunately, only the mimetic pressure (successful application of a particular technique in the industry) among the three institutional forces seems to have a significant positive influence on SMA usage.

In contrast, majority of the organizational cultural variables depict a significant relationship with SMA usage. Power distance appears to have a significant negative influence on SMA usage whereas emphasizing organizational interest and career focus seem to have a significant positive effect on SMA usage. Among other organization-specific factors, the use of advanced technology in operation, accountants' participation in strategic decision making process are found to have a significant positive influence on SMA usage. Surprisingly, a significant negative relationship is depicted between the presence of CMA and SMA usage.

Of the control variables, product quality seems to have a significant positive influence on SMA usage implying that companies producing better quality product or rendering superior quality service make greater usage of SMA techniques. More importantly, the relationships among independent variables do not exhibit a very high degree of correlations which indicates the non-existence of multicollinearity problem.

## 7.3 Regression results

### 7.3.1 Organization-specific variables

#### 7.3.1.1 Business strategy and SMA usage

Table 7.2 shows ordinary least squares (OLS) regression results of business strategy pursued and SMA usage. Three strategic typologies are considered each of which has several dimensions. Strategic pattern includes prospectors, analyzers, defenders and reactors (Miles and Snow, 1978), strategic mission comprises build, hold, harvest and divest (Gupta and Govindarajan, 1984), and strategic position encompasses differentiator, cost leader and focus (Porter, 1980; 1985).

Table 7.2: OLS regression results of strategy type and SMA usage

Variable	Expected sign	Dependent variable= SMA Usage			VIF
		Coefficient	t-stat	Significance	
SPATTERN	+	.423***	3.359	.001	4.404
SMISSION	+	-.182	-1.368	.175	4.485
SPOSITION	+	-.028	-.334	.739	1.483
SIZE	?	.076	.717	.476	1.078
INDUSTRY	?	-.113	-.857	.394	1.224
PQUALITY	+	.199**	2.470	.016	1.469
Constant	?	1.477***	3.245	.002	
Observations			83		
$R^2$			.357		
Adjusted $R^2$			.307		
$F$			7.044***		
Durbin-Watson			1.489		

\*\*\* Significance at the 1% level.

\*\* Significance at the 5% level.

\* Significance at the 10% level.

Among these three dimensions of business strategy, the results show a significant positive association ( $\beta = 0.423$ ,  $p < 0.01$ ) between strategic pattern and SMA usage. As this study assigns a value '4' to prospector type strategy, '3' for analyzer, '2' for 'defenders', and '1'

for reactors, the positive association between strategic pattern and SMA usage imply a higher SMA usage in companies pursuing ‘prospectors’ strategy than companies pursuing ‘defenders’ or ‘analyzer’ strategy. Accordingly, the first hypothesis (*H1a*) that SMA usage rates are higher in prospector type companies than in defender type companies is confirmed. This result is consistent with the findings of Cadez and Guilding (2008) study, which documented a greater SMA usage in prospectors companies in the Slovenian context. In contrast, it goes against the findings of Cinquini and Tenucci (2010) which reported an insignificant association between SMA usage and prospector strategy.

Unfortunately, strategic mission ( $\beta = -.182, p > 0.10$ ) and position ( $\beta = -.028, p > 0.10$ ) do not exhibit any significant relationship with SMA usage. These results indicate that the forms of strategic mission and position pursued have negligible effects on the level of SMA usage. Accordingly, the second hypothesis (*H1b*) that SMA usage rates are higher in companies pursuing build mission than in companies pursuing harvest mission, and the third hypothesis (*H1c*) that SMA usage rates are higher in companies pursuing product differentiation strategy than in companies pursuing cost leadership strategy are not confirmed.

With respect to the control variables, the effects of firm size and industry seem to be insignificant implying that SMA usage does not differ between companies based on these two factors. However, a significant positive effect ( $\beta = 0.199, p < 0.05$ ) of product quality is evident in the regression result, implying that companies producing high quality products or rendering superior services make greater usage of SMA techniques.

The regression model presented in Table 7.2 explains significant explanatory variations in SMA usage as the value of Adjusted  $R^2$  of the model is 0.307, signifying that the model explains 30.70% of the variations in SMA usage. Moreover, the model fits very well as its F value is positive and significant at the 1% level ( $F = 7.044$ ). The value of Durbin-Watson statistic between 1.5 and 2.5 suggests that the values of the residuals are independent

(Saunders et al., 2003). The OLS regression model presented above shows a value of 1.489 which is very close to 1.5, which implies that the values of the residuals are independent and uncorrelated. To test the problem of multicollinearity, Table 7.2 also reports variance inflation factor (VIF). The lowest VIF is 1.078 and the highest is 4.485. Given that all of the critical values (VIF) are less than 10; this confirms the absence of multicollinearity in the regression analysis (Myers, 1990; Greene, 2008).

Table 7.3 displays the regression results of strategy type and particular group of SMA usage.

Table 7.3: OLS regression results of strategy type and specific group of SMA usage

Variable	Expected sign	Costing-based SMA Usage		Competitor focused SMA usage		Customer focused SMA usage		Other SMA usage‡	
		Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
SPATTERN	+	.416**	2.448	.531**	2.207	.276**	2.094	.466	2.752
SMISSION	+	-.162	-.899	-.241	-.949	-.166	-1.196	-.186	-1.037
SPOSITION	+	.091	.805	-.374**	-2.344	-.038	-.438	.032	.282
SIZE	?	.119	.826	-.149	-.729	.141	1.264	.123	.856
INDUSTRY	?	.500***	2.811	-.918***	-3.650	-.303**	-2.204	-.438	-2.472
PQUALITY	+	.156	1.438	.408**	2.653	.167*	1.981	.141	1.305
Constant	?	-.118	-.192	4.239***	4.878	1.093**	2.298	2.485***	4.062
Observations		83		83		83		83	
$R^2$		.337		.315		.231		.309	
Adjusted $R^2$		.285		.261		.170		.255	
$F$		6.449***		5.825***		3.801***		5.669***	
Durbin-Watson		1.666		1.411		2.190		1.712	

‡ Other SMA usage includes benchmarking, brand valuation, BSC, and strategic pricing.

\*\*\* Significance at the 1% level.

\*\* Significance at the 5% level.

\* Significance at the 10% level.

As can be seen in the Table, the significant positive relationship between strategic pattern and SMA usage exhibited in Table 7.2 is true for costing, competitor and customer-based SMA techniques.

Other SMA usage (planning and performance oriented SMA techniques) does not depict a significant association with strategic pattern. This result goes against the findings of Cinquini and Tenucci (2010) which reported a weak significant negative association (significant at 10% level) between costing oriented SMA usage and prospectors strategy, and an insignificant negative association with customer and performance oriented SMA techniques. However, their study reported a positive relationship (though not significant statistically) between competitors oriented SMA tools and prospector strategy.

In regard to the effect of strategic mission and position, the results exhibit a statistically insignificant relationship with SMA usage except for a significant negative association between competitor-oriented SMA usage and strategic position. These results signify a lower usage of competitor accounting in companies pursuing differentiation strategy. Cinquini and Tenucci (2010) also presented insignificant association between strategic mission and several group of SMA techniques except for a weak significant positive relationship between customer accounting and strategic mission. Moreover, the nature of relationship between strategic mission and specific group of SMA techniques is negative. Cinquini and Tenucci (2010) also reported identical results for competitor and performance oriented SMA techniques. In contrast, the nature of association between strategic position and particular group of SMA is mixed. While the nature of relationship is positive (not significant statistically) for costing and planning and performance oriented techniques, they are negative (not significant statistically) for customer and competitor-focused techniques.

#### **7.3.1.2 Firm structure and SMA usage**

Table 7.4 presents regression results of firm structure and SMA usage. The results show a significant positive association ( $\beta=0.203$ ,  $p<0.01$ ) between the level of decentralization and SMA usage, implying a greater SMA usage in highly decentralized organizations.

Accordingly, *H2a* that SMA usage rates are higher in decentralized companies than in centralized companies is confirmed. This result is consistent with the findings of Chia (1995) and Abdel-Kader and Luther (2008) who reported a higher sophisticated MA usage in decentralized organizations as compared to their counterparts. Moreover, this finding is consistent with the arguments of majority of the MA scholars who argued that decentralized organization tends to make greater sophistication of MCS (Bruns and Waterhouse, 1975; Merchant, 1981; Chenhall and Morris, 1986; Abdel-Kader and Luther, 2008) which foster the use of innovative cost management tools such as ABC and BSC (Abdel-Kader and Luther, 2008).

Table 7.4: OLS regression results of organizational structure and SMA usage

Variable	Expected sign	Dependent variable= SMA Usage			VIF
		Coefficient	t-stat	Significance	
DECENTRA	+	.203***	3.727	.000	1.243
ACTSTRUCT	-	.024	.331	.742	1.072
SIZE	?	.007	.068	.946	1.054
INDUSTRY	?	-.211	-1.640	.105	1.158
PQUALITY	+	.227***	2.852	.006	1.404
Constant	?	1.660***	2.798	.006	
Observations			83		
$R^2$			.334		
Adjusted $R^2$			.291		
$F$			7.725***		
Durbin-Watson			1.514		

\*\*\* Significance at the 1% level.

\*\* Significance at the 5% level.

\* Significance at the 10% level.

Unfortunately, the Table presents an insignificant positive association ( $\beta = 0.024$ ,  $p > 0.10$ ) between the level of structuring of activities and SMA usage. Accordingly, *H2b* that SMA usage rates are higher in companies adopting organic structure than in companies adopting mechanistic structure is not confirmed. This result signifies a weak contingent role of



structuring of activities on the magnitude of SMA usage. Nevertheless, the nature of association (positive) indicates greater SMA usage in mechanistic organizations which goes against the arguments (e.g., Lawrence and Lorsch, 1967; Chenhall, 2003) and findings (e.g., Merchant, 1981; Gosselin, 1997) of majority of the studies. The most plausible explanation in favor of this finding might be that despite the presence of uncertainty to a moderate extent in the business environment, the activities are structured in majority of organizations with few exceptions. Accordingly, these organizations attempt to deal with the uncertainty employing innovative and sophisticated MCS and MA such as SMA while keeping their activities structured to a particular extent.

Regarding the effect of control variables, the effect of product quality seems to be significant and positive supporting the findings of the Models presented earlier in this chapter. This model also explains significant explanatory variations in SMA usage as the value of Adjusted  $R^2$  of the model is 0.291. The F value is also positive and significant at the 1% level ( $F=7.725$ ). The value of Durbin-Watson statistic also remains between 1.5 and 2.5 suggesting the values of the residuals are independent (Saunders et al., 2003). This model is also free from multicollinearity as the lowest VIF is 1.054 and the highest is 1.404 (Myers, 1990; Greene, 2008).

Table 7.5 shows the effect of organization structure on specific group of SMA techniques. The findings demonstrate a mixed result in this respect. For example, while the effects of the extent of decentralization on costing ( $\beta =0.314$ ,  $p<0.01$ ) and other (planning and performance based) SMA techniques ( $\beta =0.201$ ,  $p<0.01$ ) are significant and positive, the effects on customer ( $\beta =0.066$ ,  $p>0.10$ ) and competitor-focused SMA techniques ( $\beta =0.084$ ,  $p>0.10$ ) are not significant. These results imply a greater usage of costing, and planning and performance-based SMA techniques in decentralized organizations; while the effects of organizational structure on competitor and customer focused SMA techniques are negligible.

Table 7.5: OLS regression results of organizational structure and specific group of SMA usage

Variable	Expected sign	Costing-based SMA Usage		Competitor focused SMA usage		Customer focused SMA usage		Other SMA usage‡	
		Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
DECENTRA	+	.314***	4.513	.084	.802	.066	1.186	.201***	2.715
ACTSTRUCT	-	-.063	-.689	.330**	2.401	-.156**	-2.120	.080	.824
SIZE	?	.030	.218	-.221	-1.079	.115	1.053	.058	.402
INDUSTRY	?	.400**	2.437	-.997***	-4.035	-.406***	-3.074	-.546***	-3.118
PQUALITY	+	.152	1.493	.470***	3.076	.170**	2.085	.220**	2.026
Constant	?	.595	.786	2.704**	2.376	2.076***	3.412	2.429***	3.011
Observations		83		83		83		83	
$R^2$		.385		.282		.231		.267	
Adjusted $R^2$		.345		.236		.181		.219	
$F$		9.648***		6.062***		4.632***		5.604***	
Durbin-Watson		1.737		1.259		2.058		1.702	

‡ Other SMA usage includes benchmarking, brand valuation, BSC, and strategic pricing.

\*\*\* Significance at the 1% level.

\*\* Significance at the 5% level.

\* Significance at the 10% level.

The effects of structuring of activities are also mixed. As opposed to the effects of decentralization, the effects of the extent of structuring of activities on costing and other SMA techniques are not significant statistically. Moreover, the nature of association with costing-focused technique is negative, while it is positive for other SMA techniques. More importantly, the effect of structuring of activities on competitor-focused SMA techniques is significant and positive ( $\beta=0.330$ ,  $p<0.05$ ), which implies a greater competitor accounting usage in mechanistic organization where the activities are highly structured. However, in line with the arguments (e.g., Lawrence and Lorsch, 1967; Chenhall, 2003) and findings (e.g., Merchant, 1981; Gosselin, 1997) of prior studies, a significant negative relationship is displayed between customer accounting and structuring of activities. This result signifies a greater usage of customer-oriented SMA techniques in organic type organizations where activities are less formalized and specified.

### 7.3.1.3 Organizational culture and SMA usage

Table 7.6 presents regression results of organizational culture and SMA usage. The coefficient of power distance ( $\beta = -0.216$ ,  $p < 0.01$ ) is negative and statistically significant, which implies a greater SMA usage in companies having less power distance between executive positions. Accordingly, *H3a* that “SMA usage rates are higher in companies with low power distance than in companies with high power distance” is confirmed. This result is consistent with the finding of O’Conner (1995) who suggested a positive influence of low power distance on MCS effectiveness. In contrast, the regression results demonstrate a significant positive relationship between emphasizing organizational interest and SMA usage ( $\beta = 0.355$ ,  $p < 0.01$ ), which implies that companies whose employees place greater weight on organizational interest over personal interest make greater SMA usage in their organizations. Therefore, *H3b* that SMA usage rates are higher in companies emphasizing collectivism than in companies emphasizing individualism is confirmed. This finding seems to be consistent with the findings Ueno and Wu (1993) who reported that managers focusing on individualism adopted more formal communication.

Regarding the effects of other cultural factors, the results show a weak significant negative association ( $\beta = -0.091$ ,  $p < 0.10$ ) with uncertainty avoidance, and an insignificant negative relationship with career focus. These results suggest a weak contingent role of uncertainty avoidance attitude and career focus perception of employees on the extent of SMA usage. Accordingly, *H3c* that SMA usage rates are higher in companies accepting uncertainty than in companies avoiding uncertainty and *H3d* that SMA usage rates are higher in companies with higher career focus than in companies with lower career focus are not confirmed. However, the nature of relationship between uncertainty avoidance and SMA usage is in line with the hypothesis of the study. There rarely exists any study in the MA literatures that have focused on the effect of organizational culture on MA or SMA usage.

Table 7.6: OLS regression results of organizational culture and SMA usage

Variable	Expected sign	Dependent variable= SMA Usage			VIF
		Coefficient	t-stat	Significance	
POWERDIST	-	-.216***	-3.823	.000	1.261
ORGINT	+	.355***	4.000	.000	2.348
UNCERAVOID	-	-.091*	-1.803	.075	1.087
CAREERFOC	+	-.091	-1.204	.232	2.419
SIZE	?	.234**	2.344	.022	1.170
INDUSTRY	?	-.010	-.077	.939	1.392
PQUALITY	+	.087	1.155	.252	1.608
Constant	?	1.725***	3.152	.002	
Observations			83		
$R^2$			.490		
Adjusted $R^2$			.443		
$F$			10.300***		
Durbin-Watson			1.770		

\*\*\* Significance at the 1% level.

\*\* Significance at the 5% level.

\* Significance at the 10% level.

This model also explains significant explanatory variations in SMA usage as the value of Adjusted  $R^2$  of the model is 0.443. The F value is also positive and significant at the 1% level ( $F= 10.300$ ). The value of Durbin-Watson statistic also remains between 1.5 and 2.5 suggesting the values of the residuals are independent (Saunders et al., 2003). This model is also free from multicollinearity as the lowest VIF is 1.087 and the highest is 2.419 (Myers, 1990; Greene, 2008).

Table 7.7 displays the regression results of organizational culture and specific group of SMA usage. The results are substantially similar to that of presented in 7.7. For example, the coefficients of power distance are negative and significant for all sorts of SMA techniques. A significant positive effect of emphasizing organizational interest on SMA usage is also evident except for customer accounting techniques. In contrast, the coefficients of uncertainty

avoidance attitudes signify that costing-based techniques are highly adopted in companies that accept uncertainty.

The nature of relationship between uncertainty avoidance and other group of SMA techniques also suggests a greater usage of SMA techniques in companies that are eager to accept uncertainty.

Table 7.7: OLS regression results of organizational culture and specific group of SMA usage

Variable	Expected sign	Costing-based SMA Usage		Competitor focused SMA usage		Customer focused SMA usage		Other SMA usage‡	
		Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
POWERDIST	-	-.223***	-2.683	-.291***	-2.793	-.138**	-2.094	-.204**	-2.515
ORGINT	+	.277**	2.115	.871***	5.322	.113	1.097	.284**	2.229
UNCERAVOID	-	-.139*	-1.864	-.074	-.792	-.017	-.286	-.076	-1.044
CAREERFOC	+	-.071	-.635	-.366**	-2.623	-.055	-.624	.053	.488
SIZE	?	.291*	1.976	.108	.586	.202*	1.741	.252*	1.755
INDUSTRY	?	.578***	3.132	-.736***	-3.184	-.301**	-2.061	-.276	-1.532
PQUALITY	+	.099	.886	.071	.507	.130	1.480	.047	.433
Constant	?	.614	.761	3.532***	3.494	1.488**	2.331	2.491***	3.164
Observations			83		83		83		83
$R^2$			.370		.491		.239		.372
Adjusted $R^2$			.312		.443		.168		.313
$F$			6.302***		10.335***		3.371***		6.346***
Durbin-Watson			1.859		1.662		2.266		1.589

‡ Other SMA usage includes benchmarking, brand valuation, BSC, and strategic pricing.

\*\*\* Significance at the 1% level.

\*\* Significance at the 5% level.

\* Significance at the 10% level.

### 7.3.1. 4 Process characteristics and SMA usage

Table 7.8 presents regression results of process characteristics and SMA usage. The coefficient of process complexity is negative and statistically insignificant ( $\beta = -0.003$ ,  $p > 0.10$ ), implying a weak role of the extent of process complexities on SMA usage decision.

Therefore, the hypothesis (*H4a*) that SMA usage rates are higher in companies employing complex processing system is not confirmed.

This result goes against the findings of Krumwiede (1998) who reported that process complexity is positively correlated with the decision to adopt innovative MAS such as ABC. Nevertheless, this result is consistent with Abdel-Kader and Luther (2008) who reported an insignificant association between process complexity and MAS sophistication in the British food and drink industry. The possible explanation for this result lies in the fact that the uses of automated process and modern technologies in most of the industries in an endeavor to survive in the competitive markets leave them very close each other in terms of operational complexities. Accordingly, the use of innovative SMA techniques does not differ among companies based on the level of process complexities.

Table 7.8: OLS regression results of process characteristics and SMA usage

Variable	Expected sign	Dependent variable= SMA Usage			VIF
		Coefficient	t-stat	Significance	
PROCESSCOM	+	-.003	-.051	.960	1.205
TASKUNCER	+	.110*	1.985	.051	1.093
INTERDEPEND	+	.142**	2.099	.039	1.031
SIZE	?	.088	.792	.431	1.062
INDUSTRY	?	-.290**	-2.036	.045	1.308
PQUALITY	+	.325***	4.234	.000	1.203
Constant	?	.921	1.590	.116	
Observations			83		
$R^2$			.286		
Adjusted $R^2$			.230		
$F$			5.079***		
Durbin-Watson			1.635		

\*\*\* Significance at the 1% level.

\*\* Significance at the 5% level.

\* Significance at the 10% level.

*H4b* assumes that SMA usage rates are higher in companies employing process with high task uncertainty than in companies employing process with low task uncertainty. The coefficient of task uncertainty displays a (weak in terms of the level of significance, at 10% level of significance) significant positive association with SMA usage ( $\beta=0.110$ ,  $p<0.10$ ), implying a greater SMA usage in companies with high task uncertainty to alleviate the unfavorable effect of the resultant contingencies. Accordingly, *H4b* is confirmed. This finding is consistent with the arguments of Abernethy and Brownell (1997) and Chenhall (2003) who suggested a greater usage of broad based MCS in companies with high task uncertainty.

Regarding the effect of task interdependence, the coefficient ( $\beta=0.142$ ,  $p<0.05$ ), exhibits a significant positive relationship between task interdependence and SMA usage. Accordingly, the hypothesis (*H4c*) that SMA usage rates are higher in companies employing process with high task interdependence than in companies employing process with low task interdependence is confirmed. This finding supports the arguments and findings of several prior studies (e.g., Chenhall and Morris, 1986; Macintosh and Daft, 1987; Bouwens and Abernethy, 2000; Chenhall, 2003) who suggested a greater usage of broad scope, aggregated and integrated MCS in highly interdependent situations.

The regression model presented in Table 7.8 also explains significant explanatory variations in SMA usage as the value of Adjusted  $R^2$  of the model is 0.230. The F value is also positive and significant at the 1% level ( $F= 5.079$ ). The value of Durbin-Watson statistic (1.635) also remains between 1.5 and 2.5 suggesting the values of the residuals are independent (Saunders et al., 2003). This model is also free from multicollinearity as the lowest VIF is 1.031 and the highest is 1.308 (Myers, 1990; Greene, 2008).

Table 7.9 shows regression results of process characteristics and particular group of SMA usage.

Table 7.9: OLS regression results of process characteristics and specific group of SMA usage

Variable	Expected sign	Costing-based SMA Usage		Competitor focused SMA usage		Customer focused SMA usage		Other SMA usage‡	
		Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
PROCESSCOM	+	.038	.458	-.043	-.429	-.014	-.234	-.036	-.440
TASKUNCER	+	.132*	1.762	.072	.782	.068	1.231	.130*	1.754
INTERDEPEND	+	-.013	-.147	.578***	5.143	.084	1.236	.130	1.430
SIZE	?	.129	.853	-.122	-.655	.150	1.341	.129	.858
INDUSTRY	?	.240	1.241	-.955***	-4.028	-.405***	-2.829	-.632***	-3.304
PQUALITY	+	.330***	3.167	.423***	3.308	.228***	2.954	.317***	3.076
Constant	?	.002	.003	1.709*	1.775	.708	1.218	2.095**	2.696*
Observations			83		83		83		83
$R^2$			.257		.422		.209		.234
Adjusted $R^2$			.198		.376		.147		.174
$F$			4.378***		9.242***		3.355***		3.871***
Durbin-Watson			1.820		1.180		2.277		1.760

‡ Other SMA usage includes benchmarking, brand valuation, BSC, and strategic pricing.

\*\*\* Significance at the 1% level.

\*\* Significance at the 5% level.

\* Significance at the 10% level.

The effect of process characteristics on majority of SMA techniques is negative and insignificant as depicted in Table 7.8 except for costing-based technique which exhibits an insignificant positive association. A significant positive effect of task uncertainty on SMA usage is true only for costing-based and other (planning and performance) SMA techniques. Nevertheless, the effects on competitor and customer oriented techniques are positive. More importantly, a greater SMA usage in a highly interdependent situation is true only for competitor-focused SMA techniques. While the nature of such relationship is positive for customer and other planning and performance techniques, the relationship is negative for costing-based SMA techniques. These results signify a greater variability in the effect of process characteristics on a particular group of SMA techniques.



### 7.3.1.5 Market orientation, advanced technology, accountants' participation in strategic decision, and CMA and SMA usage

Table 7.10 exhibits the effects of several other organizational variables on SMA usage. The coefficient of the use of advanced technology ( $\beta=0.135$ ,  $p<0.05$ ) is positive and statistically significant, which indicates greater SMA usage in companies that use advanced technology in their operations. Therefore, the hypothesis (*H5a*) that SMA usage rates are higher in companies with advanced operating technology is confirmed. Ittner and Larcker (1995, 1997), Sim and Killough (1998) and Abdel-Kader and Luther (2008) also supported this result and documented a greater usage of broad scope and strategic oriented MAS in advanced technology environment.

The coefficient of market orientation ( $\beta=-0.060$ ,  $p>0.10$ ) is negative and statistically insignificant, which indicates a weak contingent effect of market orientation on SMA usage.

Table 7.10: OLS regression results of market orientation and advanced technology and SMA usage

Variable	Expected sign	Dependent variable= SMA Usage			VIF
		Coefficient	t-stat	Significance	
ADVTECHNO	+	.135**	2.019	.047	1.448
MARKETORI	+	-0.060	-1.184	.240	1.486
ACCTPART	+	.120	1.513	.153	1.470
CMA	+	-.057***	3.872	.000	1.502
SIZE	?	.176*	1.740	.086	1.148
INDUSTRY	?	-.081	-.646	.520	1.315
PQUALITY	+	.206***	2.874	.006	1.397
Constant	?	1.000	1.904*	.061	
Observations			83		
$R^2$			.462		
Adjusted $R^2$			.412		
$F$			9.217***		
Durbin-Watson			1.364		

\*\*\* Significance at the 1% level.

\*\* Significance at the 5% level.

\* Significance at the 10% level.

Accordingly, the hypothesis (*H5b*) that SMA adoption rates are higher in market-oriented companies than in product-oriented companies is not confirmed. More importantly, the nature of relationship displayed is negative which goes against the findings of Cadez and Guilding (2008) who documented an insignificant positive association between the variables. Therefore, it can be held that the orientation of a company (either product or market) does not play a strong contingent role in the decision to adopt and use of SMA techniques.

With respect to the effect of accountants' participation in strategic decision making process, the regression results show an insignificant positive effect on SMA usage, which signifies a weak effect of this variable on SMA usage. Accordingly, the hypothesis (*H5c*) that SMA usage rates are higher in companies with greater accountant participation in strategic decision making is not confirmed. This result seems to go against the arguments that participation of accountant's in strategic decision process is likely to enhance the use of strategic-oriented MA techniques (Coad, 1996; Otley, 1999; Abernethy and Bouwens, 2005). This is particularly true in firms where the accountants believe that the existing MAPs failed to support firm's strategic decision making process. This finding is also contradictory with the findings of Cadez and Guilding (2008) who reported a significant positive impact of accountants' contribution to strategic decision on SMA usage in the Slovenian companies.

*H5d* assumes that SMA usage rates are higher in companies with greater number of certified cost and management accountants (CMA). Unfortunately, the coefficient of CMA is negative and significant ( $\beta = -0.057$ ,  $p < 0.01$ ), implying that an increase in the number of CMA does not increase the level of SMA usage. A possible explanation of this result may be attributed to the several facts. First, do CMAs have the autonomy to adopt a particular MCS such as SMA technique, specifically where the introduction of an MCS affects the costs and requires substantial investment in IT.? Second, do CMAs perform cost management functions or traditional financial management and financial reporting tasks? And finally, would the

existing accounting staffs and IT have the capability to support a new and strategic oriented MCS if introduced by the CMAs? Therefore, if CMAs do not have the freedom to introduce a new MCS and if they are assigned with the role of financial manager or reporting functions, their mere presence would not enhance the usage of SMA techniques in an organization. Rather, their abundant presence in an organization will provide inverse results as depicted in this study.

The regression model presented in Table 7.10 also explains significant explanatory variations in SMA usage as the value of Adjusted  $R^2$  of the model is 0.412. The F value is also positive and significant at the 1% level ( $F= 9.217$ ). This model is also free from multicollinearity as the lowest VIF is 1.148 and the highest is 1.502 (Myers, 1990; Greene, 2008).

Table 7.11 presents the effects of other organizational factors on the specific group of SMA techniques. Identical to the results presented in Table 7.10, the effects of market orientation are negative for all groups of SMA techniques. This result goes against the findings of Guilding and McManus (2002) who suggested a significant positive association between market orientation and customer oriented SMA usage in the top 300 Australian listed companies.

While the nature of effects of the use of advanced technology in operation on all groups of SMA techniques are positive, they are, however, significant only for costing and customer-focused SMA techniques. Surprisingly, accountants' participation in strategic decision process has significant positive effect on planning and performance measurement SMA techniques. The effects of presence of CMA on SMA usage remain negative and significant for all groups of SMA techniques.

Table 7.11: OLS regression results of market orientation and advanced technology and specific group of SMA usage

Variable	Expected sign	Costing-based SMA Usage		Competitor focused SMA usage		Customer focused SMA usage		Other SMA usage‡	
		Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
MARKETORI	+	-.028	-.375	-.082	-.860	-.074	-1.372	-.089	-1.206
ADVTECHNO	+	.171*	1.746	.166	1.323	.182**	2.568	.012	.119
ACCTPART	+	.039	.334	.226	1.518	.040	.470	.242**	2.093
CMA	+	-.049**	2.236	-.108***	-3.877	-.034**	-2.144	-.052***	-2.413
SIZE	?	.224	1.500	.018	.096	.197*	1.831	.197	1.328
INDUSTRY	?	.518***	2.820	-.748***	-3.190	-.295**	-2.227	-.467**	-2.562
PQUALITY	+	.210*	1.975	.227*	1.671	.153*	1.986	.222**	2.107
Constant	?	-.481	-.622	3.237***	3.281	.630	1.130	2.191***	2.858
Observations			83		83		83		83
$R^2$			.339		.445		.335		.318
Adjusted $R^2$			.278		.393		.273		.254
$F$			5.502***		8.591***		5.394***		4.997***
Durbin-Watson			1.728		1.443		2.080		1.490

‡ Other SMA usage includes benchmarking, brand valuation, BSC, and strategic pricing.

\*\*\* Significance at the 1% level.

\*\* Significance at the 5% level.

\* Significance at the 10% level.

### 7.3.2 External/environmental variables

#### 7.3.2.1 Perceived environmental uncertainty and SMA usage

Table 7.12 presents regression results of perceived environmental uncertainty (PEU) and SMA usage. The coefficient of PEU ( $\beta = .195$ ,  $p < 0.05$ ) is positive and statistically significant in Model 1 of Table 7.12, implying a greater SMA usage in companies facing greater environmental uncertainty. Accordingly, the hypothesis ( $H6$ ) that SMA usage rates are higher in companies perceiving a higher degree of environmental uncertainty than in companies perceiving a lower degree of environmental uncertainty is confirmed.

Table 7.12: OLS regression results of environmental uncertainty and SMA usage

Variable	Expected sign	Dependent variable= SMA Usage						VIF
		Model 1			Model 2			
		Coefficient	t-stat	Significance	Coefficient	t-stat	Significance	
PEU	+	.195**	2.357	.021				1.045
UNPREDICT	+				-.053	-.520	.605	3.010
FLUCTUATE	+				.247*	1.818	.073	4.941
AMBIGUITY	+				.093	.677	.500	4.362
LACKINFO	+				-.123	-1.314	.193	1.772
UNCEROUT	+				-.040	-.460	.647	1.470
SIZE	?	.105	.937	.352	.085	.768	.445	1.082
INDUSTRY	?	-.212	-1.568	.121	-.217	-1.594	.115	1.247
PQUALITY	+	.321***	4.240	.000	.331***	4.385	.000	1.216
Constant	?	1.188**	2.244	.028	1.309**	2.465	.016	
Observations			83			83		
$R^2$			.260			.336		
Adjusted $R^2$			.223			.264		
$F$			6.868***			4.682***		
Durbin-Watson			1.646			1.771		

\*\*\* Significance at the 1% level.

\*\* Significance at the 5% level.

\* Significance at the 10% level.

This result suggests the usefulness of strategic-oriented MAS in dealing with organizational external environmental uncertainties. Moreover, this result is consistent with the findings of majority (e.g., Gordon and Narayanan, 1984; Chenhall and Morris, 1986; Gul and Chia, 1994; Chong and Chong, 1997; Abdel-Kader and Luther, 2008) of the prior studies which documented a positive relationship between PEU and broad scope MAS information or sophistication of MAS. For example, Gordon and Narayanan (1984) reported a positive association between PEU and the use of externally oriented and non-financial information. Gul and Chia (1994) also found positive relationship between PEU and sophistication of

MAS. Abdel-Kader and Luther (2008) also reported a significant positive influence of PEU on sophistication of MAS in the British food and drink industry.

Among the five factors of PEU, only the effect of fluctuation in the environment appears to have a significant (at 10% level of significance) positive effect on SMA usage ( $\beta=0.247$ ,  $p<0.10$ ) as displayed in Model 2 of the Table 7.12. Accordingly, only *H6b* that SMA usage rates are higher in companies perceiving a higher degree of fluctuation in the external environment than in companies perceiving a lower degree of fluctuation in the external environment is confirmed. Prior studies did not deal with each of these five variables separately which make it difficult to compare the findings of the present study with that of other studies. Unfortunately, the coefficients of rest of the components of PEU do not exhibit any significant association with SMA usage. Accordingly, *H6a* (SMA usage rates are higher in companies perceiving a higher degree of unpredictability of the environment), *H6c* (SMA usage rates are higher in companies perceiving a higher degree of ambiguousness of environmental information), *H6d* (SMA usage rates are higher in companies perceiving a higher degree of lack of information on environmental factors), and *H6e* (SMA usage rates are higher in companies perceiving a higher degree of uncertainty about the outcomes of decisions) are not confirmed. More surprisingly, while ambiguity (*H6c*) in the environment is positively related, the nature of association is negative for unpredictability (*H6a*), lack of information (*H6d*) and uncertainty of outcome (*H6e*).

The regression models presented in Table 7.12 explain significant explanatory variations in SMA usage as the value of Adjusted  $R^2$  of the models are 0.223 (Model 1) and 0.264 (Model 2). The F values are also positive and significant at the 1% level (F= 6.868 in Model 1 and 4.682 in Model 2). The value of Durbin-Watson statistic (1.646 in Model 1 and 1.771 in Model 2) also remains between 1.5 and 2.5 suggesting the values of the residuals are

independent (Saunders et al., 2003). These models are also free from multicollinearity as the lowest VIF is 1.045 and the highest is 4.941 (Myers, 1990; Greene, 2008).

Table 7.13 exhibits the effects of PEU and each of its components on specific group of SMA techniques.

Table 7.13: OLS regression results of environmental uncertainty and specific group of SMA usage

Variable	Expected sign	Costing-based SMA Usage		Competitor focused SMA usage		Customer focused SMA usage		Other SMA usage‡	
		Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
PEU	+	.193*	1.744	.177	1.134	.111	1.339	.276**	2.547
UNPREDICT	+	-.057	-.414	-.130	-.679	.056	.531	-.069	-.512
FLUCTUATE	+	.337*	1.834	.339	1.323	.048	.344	.169	.936
AMBIGUITY	+	.000	-.002	.132	.511	.077	.544	.238	1.308
LACKINFO	-	-.010	-.079	-.367**	-2.079	-.089	-.917	-.164	-1.313
UNCEROUT	-	-.168	-1.442	.130	.798	-.028	-.318	.050	.438
SIZE	?	.120	.807	-.175	-.844	.160	1.399	.160	1.095
INDUSTRY	?	.375**	2.038	-.998***	-3.892	-.362**	-2.563	-.559***	-3.090
PQUALITY	+	.320***	3.134	.473***	3.327	.240***	3.059	.312***	3.106
Constant	?	-.055	-.076	3.895***	3.892	.869	1.577	2.087***	2.956
Observations			83		83		83		83
$R^2$			.310		.310		.217		.301
Adjusted $R^2$			.236		.236		.132		.226
$F$			4.158***		4.162***		2.564**		3.991***
Durbin-Watson			1.977		1.368		2.193		1.798

‡ Other SMA usage includes benchmarking, brand valuation, BSC, and strategic pricing.

\*\*\* Significance at the 1% level.

\*\* Significance at the 5% level.

\* Significance at the 10% level.

As can be seen in the Table, the significant positive influence of PEU on SMA usage is true only for costing and other (planning and performance) techniques. However, the nature of effects on competitor and customer-focused SMA techniques are positive (though not significant statistically).

With respect to the effects of each of the components of PEU on specific group of SMA techniques, fluctuations in the environment appear to have significant positive effect on costing-based techniques. Surprisingly, lack of information on environmental factors seems to have a significant negative effect on competitor-based SMA usage. The effects of other components of PEU on specific group of SMA techniques are found to be statistically insignificant which are identical to the results presented in the Table 7.12.

### **7.3.2.2 Environmental hostility or intensity of competition and SMA usage**

Table 7.14 shows the regression results of environmental hostility/intensity of competition and SMA usage. Model 1 shows a significant positive coefficient of intensity of competition ( $\beta = 0.185$ ,  $p < 0.05$ ), implying a positive relationship between the level of environmental hostility and SMA usage. More specifically, the results suggest that the higher the intensity of competition the greater the use of SMA techniques. Accordingly, the hypothesis (*H7*) that SMA usage rates are higher in companies perceiving a higher degree of environmental hostility than in companies perceiving a lower degree of environmental hostility is confirmed. This result supports the arguments and findings of several MA studies (Khandwalla, 1972; Bromwich, 1990; Mia and Clarke, 1999; O'Connor et al., 2011) which suggested sophistication of MAS to deal with increased market competition intensity. For instance, Khandwalla (1972) suggested the application of sophisticated accounting, production and statistical controls in facing hostility from intense competition. Bromwich (1990) suggested the use of external and market oriented (benchmarking and monitoring) information in meeting an organization's challenges resulting from competition in its market. Mia and Clarke (1999) demonstrated the usefulness of MAS information in dealing with the intensity of market competition. O'Connor et al. (2011) show a positive association between the threat of foreign entrants and greater reliance on broad scope MCS.



Table 7.14: OLS regression results of environmental hostility and SMA usage

Variable	Expected sign	Dependent variable= SMA Usage						VIF
		Model 1			Model 2			
		Coefficient	t-stat	Significance	Coefficient	t-stat	Significance	
INTENCOMP		.185**	2.231	.029			1.081	
STRESSFUL	+				.091*	1.756	.083	1.258
DOMINATE	+				.165***	3.087	.003	1.441
RESTRICT	+				-.089*	-1.948	.055	1.103
SIZE	?	.065	.582	.562	.220**	2.014	.048	1.192
INDUSTRY	?	-.198	-1.448	.151	-.200	-1.537	.129	1.270
PQUALITY	+	.294***	3.752	.000	.192**	2.513	.014	1.392
Constant	?	1.160	2.128	.036	1.194**	2.365	.021	
Observations			83			83		
$R^2$			.390			.255		
Adjusted $R^2$			.342			.217		
$F$			8.089***			6.686***		
Durbin-Watson			1.488			1.564		

\*\*\* Significance at the 1% level.

\*\* Significance at the 5% level.

\* Significance at the 10% level.

Regarding the effects of individual component of intensity of competition, Model 2 of Table 7.14 exhibits a significant positive association ( $\beta = 0.091$ ,  $p < 0.10$ ) between the extent of stressfulness of competition and SMA usage. Accordingly, the hypothesis ( $H7a$ ) that SMA usage rates are higher in companies facing stressful competition is confirmed. This result suggests a greater SMA usage in companies that are facing stressful competition from its rivals. The inclusion of external and market oriented information by majority of the SMA techniques appears to be the underlying reasons for their adoption by companies facing stressful competition from its market.

The coefficient of domination ( $\beta = 0.165$ ,  $p < 0.01$ ) suggests more strong relationship with SMA usage, implying a greater SMA usage in companies that are operating in an industry where few companies dominate the market. Therefore, the hypothesis (*H7b*) that SMA usage rates are higher in companies operating in an industry dominated by few companies is confirmed. As SMA tools accumulate and analyze competitors' data, companies operating in a dominating environment may find them useful to identify areas of competitive advantage.

Surprisingly, the regression result presented in Table 7.14 shows a (weak, at the 10% level of significance) significant negative coefficient ( $\beta = -0.089$ ,  $p < 0.10$ ) of entry restriction. Therefore, the hypothesis that (*H7c*) SMA usage rates are higher in companies operating in an industry where entry restriction is high is not confirmed. The underlying cause for this finding may be allied to the fact that companies operating in an industry where entry restriction is high face fewer competitions due to the presence of fewer rivals. This, in turn, may stimulate them not to adopt externally oriented SMA techniques to avoid additional costs associated with the accumulation and analysis of market and external environmental data.

The regression models presented in Table 7.14 also explain significant explanatory variations in SMA usage as the value of Adjusted  $R^2$  of the models are 0.342 (Model 1) and 0.217 (Model 2). The F values are also positive and significant at the 1% level (F= 8.089 in Model 1 and 6.686 in Model 2). The value of Durbin-Watson statistic (1.488 in Model 1 and 1.564 in Model 2) also remains around the acceptable range (1.5 and 2.5) suggesting the values of the residuals are independent (Saunders et al., 2003). These models are also free from multicollinearity as the lowest VIF is 1.081 and the highest is 1.441 (Myers, 1990; Greene, 2008). Table 7.15 displays regression results of environmental hostility and specific group of SMA techniques.

Table 7.15: OLS regression results of environmental hostility and specific group of SMA usage

Variable	Expected sign	Costing-based SMA Usage		Competitor focused SMA usage		Customer focused SMA usage		Other SMA usage‡	
		Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
STRESSFUL	+	-.022	-.300	.269***	2.721	.093*	1.699	.155**	2.201
DOMINATE	+	.195**	2.618	.173*	1.711	.078	1.392	.169**	2.344
RESTRICT	?	-.122*	-1.902	-.088	-1.020	-.032	-.674	-.075	-1.209
SIZE	?	.297*	1.944	-.020	-.097	.213*	1.844	.271*	1.831
INDUSTRY	?	.312*	1.715	-.879***	-3.565	-.322**	-2.352	-.492***	-2.801
PQUALITY	+	.201*	1.883	.262*	1.802	.150*	1.858	.155	1.502
Constant	?	.192	.272	3.088***	3.221	.660	1.238	1.926***	2.820
Observations			83		83		83		83
$R^2$			.322		.356		.255		.335
Adjusted $R^2$			.269		.305		.196		.282
$F$			6.028***		7.000***		4.327***		6.370***
Durbin-Watson			1.794		1.286		2.085		1.557

‡ Other SMA usage includes benchmarking, brand valuation, BSC, and strategic pricing.

\*\*\* Significance at the 1% level.

\*\* Significance at the 5% level.

\* Significance at the 10% level.

As can be seen in the Table, companies facing stressful competition make greater usage of competitor, customer and other (planning and performance) SMA techniques. Surprisingly, the relationship between stressfulness of competition and costing-based SMA usage is negative (though not significant statistically). In contrast, the effect of market domination by few companies on costing-based SMA usage is significant and positive. However, a significant positive influence of market domination on customer and other SMA usage is also evident. Moreover, the significant negative association between SMA usage and entry restriction is true only for costing-based SMA techniques.

### 7.3.2.3 External environment and SMA usage

Table 7.16 presents the effects of all the external environmental factors (considered in this study) including environmental complexity, diversity and ecology on SMA usage.

Table 7.16: OLS regression results of external environmental and SMA usage

Variable	Expected sign	Dependent variable= SMA Usage			VIF
		Coefficient	t-stat	Significance	
UNPREDICT	+	-.093	-1.031	.306	3.138
FLUCTUATE	+	.318**	2.645	.010	5.161
AMBIGUITY	+	.012	.094	.925	4.707
LACKINFO	-	-.155*	-1.863	.067	1.874
UNCEROUT	+	-.124	-1.617	.111	1.548
STRESSFUL	+	.093*	1.835	.071	1.432
DOMINATE	+	.139***	2.704	.009	1.614
RESTRICT	?	-.112**	-2.542	.013	1.226
ENVCOMPLEX	+	.040	.700	.486	1.346
ENVDIVERSE	+	.096*	1.879	.065	1.307
ENVECO	+	.000	.003	.998	1.308
SIZE	?	.201*	1.900	.062	1.338
INDUSTRY	?	-.106	-.824	.413	1.485
PQUALITY	+	.181**	2.428	.018	1.589
Constant	?	.881 *	1.678	.098	
Observations			83		
$R^2$			.543		
Adjusted $R^2$			.449		
$F$			5.780***		
Durbin-Watson			1.581		

\*\*\* Significance at the 1% level.

\*\* Significance at the 5% level.

\* Significance at the 10% level.

The coefficient of environmental complexity ( $\beta = 0.040$ ,  $p > 0.10$ ) is positive (though not significant statistically), indicating an insignificant positive relationship between the variables. Therefore, the hypothesis ( $H8a$ ) that SMA usage rates are higher in companies perceiving higher environmental complexity than companies perceiving lower environmental

complexity is not confirmed. In contrast, the coefficient of environmental diversity ( $\beta = 0.096$ ,  $p < 0.10$ ) shows a significant positive relationship with SMA usage. Accordingly, the hypothesis (*H8b*) that SMA usage rates are higher in companies perceiving higher environmental diversity than companies perceiving lower environmental diversity is confirmed. This result suggests a greater SMA usage in companies experiencing a higher diversity in the environmental factors such as input, customers and output. Surprisingly, environmental ecology shows very insignificant relationship with SMA usage.

Therefore, the hypothesis (*H8c*) that SMA usage rates are higher in companies perceiving higher ecological pressures than companies perceiving lower ecological pressures is not confirmed. These results suggest that ecological pressures exerted by the environmental regulators play a weak role on the adoption decision of SMA techniques. The underlying reason for such finding may be attributed to the voluntary nature of disclosure of environmental costs in the corporate reporting practice in Bangladesh.

The regression models presented in Table 7.16 also explain significant explanatory variations in SMA usage as the value of Adjusted  $R^2$  of the models is 0.449. The F value is also positive and significant at the 1% level ( $F = 5.780$ ). The value of Durbin-Watson statistic (1.581) also remains within the acceptable range (1.5 and 2.5) suggesting the values of the residuals are independent (Saunders et al., 2003). These models are also free from multicollinearity as the lowest VIF is 1.226 and the highest is 5.161 (Myers, 1990; Greene, 2008).

Table 7.17 presents regression results of external environment and specific group of SMA techniques. The significant positive relationship between environmental diversity and SMA usage is true only for costing-based SMA techniques. However, the coefficients of other SMA techniques also display a positive association with environmental diversity though not significant statistically.

Table 7.17: OLS regression results of external environmental and specific group of SMA usage

Variable	Expected sign	Costing-based SMA Usage		Competitor focused SMA usage		Customer focused SMA usage		Other SMA usage‡	
		Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
UNPREDICT	+	-.111	-.882	-.151	-.846	.040	.391	-.118	-.903
FLUCTUATE	+	.404**	2.412	.460*	1.934	.068	.501	.247	1.419
AMBIGUITY	+	-.056	-.327	-.056	-.231	.074	.530	.134	.752
LACKINFO	-	-.011	-.093	-.452***	-2.738	-.131	-1.382	-.204*	-1.690
UNCEROUT	+	-.246**	-2.305	.003	.018	-.093	-1.074	-.027	-.246
STRESSFUL	+	-.046	-.643	.335***	3.331	.094	1.629	.154**	2.095
DOMINATE	+	.169**	2.354	.159	1.553	.052	.879	.139*	1.858
RESTRICT	+	-.151**	-2.462	-.136	-1.563	-.044	-.871	-.076	-1.196
ENVCOMPLEX	+	.119	1.507	-.138	-1.230	.108	1.669	-.017	-.207
ENV DIVERSE	+	.171**	2.399	.023	.222	.080	1.375	.032	.436
ENVECO	+	-.046	-.598	.044	.407	-.053	-.843	.087	1.096
SIZE	?	.283*	1.914	-.031	-.150	.217*	1.804	.221	1.443
INDUSTRY	?	.463**	2.584	-.868***	-3.414	-.201	-1.380	-.457**	-2.458
PQUALITY	+	.163	1.561	.292*	1.976	.158*	1.866	.148	1.370
Constant	?	-.356	-.486	3.393***	3.263	.180	.302	1.685**	2.219
Observations			83		83		83		83
$R^2$			.497		.476		.353		.431
Adjusted $R^2$			.393		.368		.220		.314
$F$			4.791***		4.408***		2.648***		3.676***
Durbin-Watson			1.825		1.453		2.122		1.733

‡ Other SMA usage includes benchmarking, brand valuation, BSC, and strategic pricing.

\*\*\* Significance at the 1% level.

\*\* Significance at the 5% level.

\* Significance at the 10% level.

Moreover, while nature of association between environmental complexity and SMA usage is positive for costing and customer-focused techniques, they are essentially negative for competitor and planning techniques. On the contrary, akin to the results depicted in Table 7.16, the coefficients of ecological pressures exhibit insignificant negative relationships with all sorts of SMA techniques.

### 7.3.2.4 Institutional pressure and SMA usage

Table 7.18 displays the regression results of institutional pressures and SMA usage. The coefficient of coercive pressure ( $\beta=0.151$ ,  $p<0.01$ ) is positive and statistically significant, implying a strong contingent role of coercive pressures exerted by regulators and controlling originations on the adoption of SMA techniques of dependent organizations.

Table 7.18: OLS regression results of institutional pressure and SMA usage

Variable	Expected sign	Dependent variable= SMA Usage			VIF
		Coefficient	t-stat	Significance	
COERCIVE	+	.151***	2.768	.007	1.402
MIMETIC	+	.145**	2.121	.037	1.184
NORMATIVE	+	-.070	-.693	.490	1.061
SIZE	?	-0.23	-.198	.844	1.174
INDUSTRY	?	-.300**	-2.191	.031	1.252
PQUALITY	+	.220**	2.638	.010	1.465
Constant	?	1.622***	3.660	.000	
Observations			83		
$R^2$			.311		
Adjusted $R^2$			.257		
$F$			5.721***		
Durbin-Watson			1.882		

\*\*\* Significance at the 1% level.

\*\* Significance at the 5% level.

Therefore, the hypothesis ( $H9a$ ) that SMA usage rates are higher in companies perceiving higher pressures from regulators and controlling organizations is confirmed. More specifically, the sample companies feel substantial pressures from regulators (e.g., BSEC, Bangladesh bank) and controlling organization such as parent and donors to adopt cost management tools. Identical to the coercive pressure, the coefficient of mimetic pressure is also positive and statistically significant ( $\beta=0.145$ ,  $p<0.05$ ), implying a greater SMA usage in companies that faces mimetic pressures owing to the adoption of sophisticated and innovative MCS tools by rivals in the industry.

Therefore, the hypothesis (*H9b*) that SMA usage rates are higher in companies perceiving higher mimetic pressures than companies perceiving lower mimetic pressures is confirmed. This imitation of structures and procedures such as SMA tools seems to be more important to survive (Ribeiro and Scapens, 2006) and to achieve legitimacy rather than to improve performance (DiMaggio and Powel, 1983).

However, the coefficient of normative pressure ( $\beta = -0.070$ ,  $p > 0.10$ ) signifies an insignificant negative relationship between normative pressures and SMA usage. Accordingly, the hypothesis (*H9c*) that SMA usage rates are higher in companies perceiving higher normative pressures than companies perceiving lower normative pressures is not confirmed. The possible explanation for this result can be attributed to the fact that compliance with the standards and guidance issued by cost and management accountants' body across the world are mostly voluntary in nature. Corporations, specifically, in the developing countries are not keen to incur additional costs associated with the accumulation and analysis of additional external and internal information embodied with majority of the SMA techniques. Consequently, the effects of professional network, media, and culture appear to be insignificant in the voluntary adoption decision of SMA techniques.

The regression models presented in Table 7.18 also explain significant explanatory variations in SMA usage as the value of Adjusted  $R^2$  of the models is 0.209. The F value is also positive and significant at the 1% level ( $F = 4.621$ ). The value of Durbin-Watson statistic (1.662) also remains within the acceptable range (1.5 and 2.5) suggesting the values of the residuals are independent (Saunders et al., 2003). These models are also free from multicollinearity as the lowest VIF is 1.153 and the highest is 1.647 (Myers, 1990; Greene, 2008).

Table 7.19 exhibits regression results of institutional pressures and specific group of SMA usage.



Table 7.19: OLS regression results of institutional pressure and specific group of SMA usage

Variable	Expected sign	Costing-based SMA Usage		Competitor focused SMA usage		Customer focused SMA usage		Other SMA usage‡	
		Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
COERCIVE	+	.146*	1.965	.220**	2.273	.045	.798	.186**	2.637
MIMETIC	+	.004	.038	.470***	3.879	.006	.086	.253***	2.855
NORMATIVE	+	-.107	-.780	-.021	-.120	.034	.322	-.117	-.902
SIZE	?	.062	.395	-.384*	-1.878	.105	.880	.003	.020
INDUSTRY	?	.252	1.343	-1.036***	-4.264	-.417***	-2.930	-.627***	-3.535
PQUALITY	+	.275**	2.408	.197	1.336	.208**	2.401	.150	1.388
Constant	?	.877	1.446	3.211***	4.085	.842*	1.830	2.318***	4.041
Observations			83		83		83		83
$R^2$			.269		.366		.186		.313
Adjusted $R^2$			.211		.316		.121		.259
$F$			4.651***		7.307***		2.889**		5.770***
Durbin-Watson			1.906		1.588		2.244		1.908

‡ Other SMA usage includes benchmarking, brand valuation, BSC, and strategic pricing.

\*\*\* Significance at the 1% level.

\*\* Significance at the 5% level.

\* Significance at the 10% level.

Identical to the results presented in Table 7.18, a significant positive effect of coercive pressure on costing, competitor and other SMA techniques is displayed. However, the relationship is somewhat stronger for competitor and other SMA techniques as compared to costing oriented SMA techniques.

Surprisingly, the significant positive effect of mimetic pressures on costing and customer oriented SMA usage disappears. However, identical to the overall SMA usage, the significant positive influence remains valid for competitor, and planning and performance-based techniques. Additionally, the effects of normative pressures on costing, competitor, and planning and performance-based SMA techniques are negative, while they are positive for customer-oriented SMA techniques.

### 7.3.3 SMA usage and firm performance

#### 7.3.3.1 SMA usage and perceived firm performance

Table 7.20 presents regression results of SMA usage and perceived firm performance. Perceived firm performance is measured using the Hoque and James (2000) five dimensions (return on investment, margin on sales, capacity utilization, customer satisfaction, and product quality) of performance.

Table 7.20: OLS regression results of SMA usage and firm (perceived) performance

Variable	Expected sign	Dependent variable= Perceived firm performance				
		Model 1	Model 2	Model 3	Model 4	Model 5
SMAUSE	+	.365** (2.202)				
COSTING	+		.195* (1.687)			
COMPETITOR	+			.143 (1.642)		
CUSTOMER	+				.109 (.666)	
OTHER‡	+					.182 (1.481)
SPATTERN	?	.199* (1.683)	.237** (2.025)	.239** (2.047)	.256** (2.139)	.226* (1.884)
SPOSITION	?	.113 (1.008)	.094 (.824)	.142 (1.223)	.101 (.881)	.101 (.883)
SIZE	?	.026 (.178)	.056 (.383)	.057 (.387)	.036 (.235)	.031 (.211)
DECENTRA	?	.142 (1.534)	.123 (1.251)	.189** (2.035)	.188* (1.966)	.167* (1.786)
STRESSFUL	?	-.010 (-.141)	.042 (.579)	-.022 (-.291)	.011 (.139)	-.011 (-.140)
MARKETORI	+	-.008 (-.115)	-.013 (-.182)	-.022 (-.301)	-.014 (-.183)	-.006 (-.088)
ADVTECHNO	+	.094 (.869)	.126 (1.159)	.099 (.893)	.110 (.937)	.136 (1.254)
ACCTPART	+	-.010 (-.083)	.022 (.182)	-.012 (-.101)	.021 (.173)	-.010 (-.077)
Constant	?	1.222* (1.748)	1.225* (1.714)	1.425** (2.036)	1.527** (2.139)	1.336* (1.887)
Observations		83	83	83	83	83
$R^2$		.423	.408	.407	.388	.403
Adjusted $R^2$		.352	.335	.334	.313	.329
$F$		5.949***	5.587***	5.560***	5.153***	5.469***
Durbin-Watson		1.691	1.783	1.690	1.718	1.625

‡ Other SMA usage includes benchmarking, brand valuation, BSC, and strategic pricing.

\*\*\* Significance at the 1% level.

\*\* Significance at the 5% level.

\* Significance at the 10% level.

Respondents were asked to indicate their company's performance relative to their competitors for each of these five dimensions using a five-point Likert scale ranging from "1" (below average) to "5" (above average). The coefficient of SMA usage ( $\beta = 0.365$ ,  $p < 0.05$ ) in Model 1 is significant and positive, signifying that SMA usage has a positive effect on firm performance. Accordingly, the hypothesis (*H 10*) that there is a positive association between SMA usage and firm performance is confirmed for perceived firm performance.

This result is consistent with the findings of Cadez and Guilding (2008) and Amanollah Nejad Kalkhouran et al. (2017) who documented that SMA usage has a significant and positive effect on perceived firm performance. This result supports the notion that better information, specifically in uncertain conditions, can facilitate improved resource allocation (Baines and Langfield-Smith, 2003) which, in turn, enhance the likelihood of positive outcome (Christensen and Feltham, 2003; Cadez and Guilding, 2008).

As the key function of an organization's information system (including MAS and SMA) is to supply necessary information to facilitate managerial decision-making and control (Abernethy and Bouwens, 2005), the failure of such system to provide adequate strategic information leads to flawed or late decision which will result in suboptimal performance (Gupta, 1987). Consequently, the adoption of strategic oriented MA tools (e.g., SMA) which includes the provision of external and long-term oriented information can be of particular use to achieve favorable firm performance.

Among the control variables, only the effect of strategic pattern appears to be positive and significant. This result indicates that firms adopting prospector strategy performs better than their counterparts. The regression models explain significant explanatory variations in firm performance as the value of Adjusted  $R^2$  of the models is 0.352. The F value is also positive and significant at the 1% level ( $F = 4.949$ ). The value of Durbin-Watson statistic (1.691) also

remains within the acceptable range (1.5 and 2.5) suggesting the values of the residuals are independent (Saunders et al., 2003).

With respect to the effects of specific group of SMA techniques, the coefficient of costing-based techniques ( $\beta = 0.195$ ,  $p < 0.10$ ) displays a significant positive influence on firm performance. Despite the positive nature of relationship, the remaining groups of SMA techniques do not exhibit any significant influence on perceived firm performance. The rest of the models also explain significant explanatory variations in firm performance as the value of Adjusted  $R^2$  of the models are 0.335 (Model 2), 0.334 (Model 3), 0.313 (Model 4), and 0.329 (Model 5) and the F values are positive (5.587, 5.560, 5.153 and 5.469 respectively) and significant at the 1% level of significance. The values of Durbin-Watson statistic also remain within the acceptable range (1.5 and 2.5) suggesting the values of the residuals are independent (Saunders et al., 2003).

### 7.3.3.2 SMA usage and observed firm performance

Table 7.21 presents regression results of SMA usage and observed firm performance. Initially, this study attempts to examine the effects of SMA usage on both accounting/book-based performance (ROA, ROE) and market-based performance (TOBINQ, MTB ratio).

Table 7.21: OLS regression results of SMA usage and firm (market-based) performance

Variable	Expected sign	Dep. Variable= TOBINQ		Dep. Variable= MTB ratio	
		Coefficient	t-stat	Coefficient	t-stat
SMAUSE	+	.539**	2.176	2.219***	2.836
MARKETORI	+	.017	.134	-.207	-.529
SIZE	+	-.426	-1.581	-1.636*	-1.919
INDUSTRY	?	.770**	2.469	1.647*	1.673
Constant	?	-.063	-.048	-1.120	-.272
Observations			83		83
$R^2$			.147		.151
Adjusted $R^2$			.104		.107
F			3.372**		3.461**
Durbin-Watson			1.812		2.050

\*\*\* Significance at the 1% level.

\*\* Significance at the 5% level.

\* Significance at the 10% level.

However, the use of ROA and ROE (accounting-based performance measures) gives absurd results in the sense that the value of adjusted  $R^2$  are found negative and insignificant. This motivates the present study to show the effect of SMA usage only on the market-based firm performance. Nevertheless, as the perceived firm performance (presented in the Table 7.20) includes ROI and margin on sales, the effects of their exclusion seem to be less negligible in this regard. Moreover, there are some drawbacks of using accounting profits as performance measurers. For example, it does not reflect all of the agency costs (Wiwattanakantang, 2001) and therefore can be very high even in the presence of huge agency costs (Nicholson and Kiel, 2007). They are also subject to the manipulation by management through the choice of a particular accounting method and judgments (Chow et al., 1997; Deegan, 2005).

As can be seen in the regression Table, the coefficient of SMA usage ( $\beta = 0.539$ ,  $p < 0.05$ ) is positive and statistically significant. Accordingly, the hypothesis ( $H_{10}$ ) that there is a positive association between SMA usage and firm performance is confirmed for TOBINQ ratio. This result signifies a favorable effect of using SMA techniques on market-based firm performance like TOBINQ. As TOBINQ ratio takes into account the market value of equity in relation to the book value of assets, the favorable effect of the adoption of SMA techniques on TOBINQ ratio signifies the usefulness these techniques to achieve better market-based firm performance. Despite the absence of prior studies which focused on the effect of SMA usage on market-based performance, there exists evidence (e.g., Cadez and Guilding, 2008; Amanollah Nejad Kalkhouran et al., 2017) that showed a favorable impact of SMA adoption on perceived performance.

Regarding the effects of control variables on TOBINQ ratio, the results show a significant positive influence of industry variable on performance. Consequently, there exists significant difference in the effect on performance between industries. The value of Adjusted  $R^2$  of the model is 0.104 and the F value is 3.372 (significant at the 5% level of significance) which

signify the acceptability of the model. The value of Durbin-Watson statistic (1.812) also remains within the acceptable range (1.5 and 2.5) suggesting the values of the residuals are independent (Saunders et al., 2003).

The significant positive association between SMA usage and observed performance is more robust for market-to-book (MTB) ratio ( $\beta=2.219$ ,  $p<0.01$ ) as depicted in the second model of the regression Table. Therefore, the hypothesis (*H 10*) that there is a positive association between SMA usage and firm performance is confirmed for MTB ratio. Based on this result, it can be held that the market value of equity is greater than the book of equity in companies that make greater usage of SMA techniques. While it is difficult to establish a direct effect of SMA adoption on market-based company performance as they are not reflected in the published financial statements, the provision of inclusion of external and long-term oriented information (as SMA techniques do) and their timely supply to the top management team can improve resource allocation (Baines and Langfield-Smith, 2003) which, in turn, can improve the likelihood of positive outcome (Christensen and Feltham, 2003; Cadez and Guilding, 2008). The MTB ratio model also explains significant explanatory variations in firm performance as the value of Adjusted  $R^2$  of the model is 0.107 and the F value is 3.461 (significant at the 5% level of significance) which signify the acceptability of the model. The value of Durbin-Watson statistic (2.050) also remains within the acceptable range (1.5 and 2.5) suggesting the values of the residuals are independent (Saunders et al., 2003).

#### **7.4 Validity and reliability analysis**

This study tested for each of assumptions of the Ordinary Least Squares (OLS) regression to assure the reliability of results. It is well evident that when the classical linear regression assumptions are met, then OLS is an optimal estimator (Berry, 1993; Hayes and Cai, 2007; Krueger and Lewis-Beck, 2008). The six well-known assumptions of OLS regressions are

linearity, normality, homoscedasticity, multicollinearity, independence of residuals, and undue influence (Berry, 1993; Schumacker et al., 2002; Hayes and Cai, 2007; Rashid, 2020a).

**Assumption 1: The relationship between the independent variables (IVs) and dependent variable (DV) is linear.**

With respect to the first assumption that the relationship between independent variables (IVs) and dependent variable (DV) is characterized by a straight line, the results confirmed such relationship between the IVs (Organizational culture, process characteristics, environmental uncertainty, intensity of competition, and institutional pressures) and DV (SMA usage). These are well displayed in the following scatter plots.

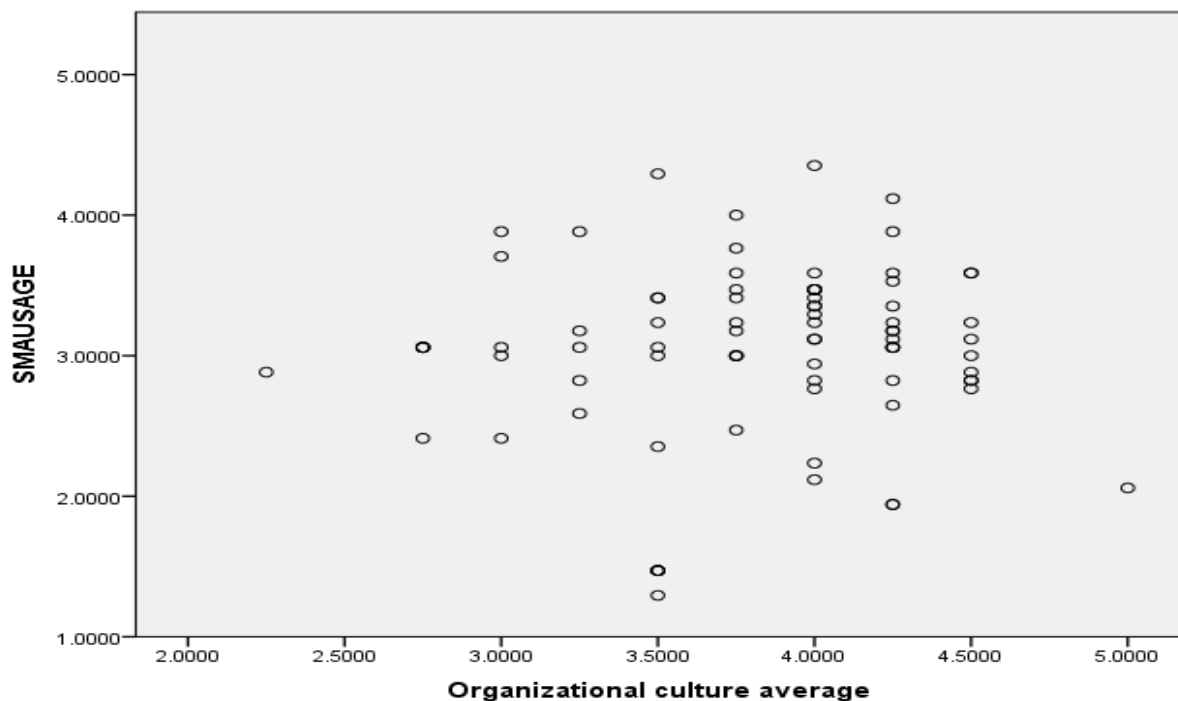


Figure 7.1: The linearity of relationship between IV (organizational culture) and DV (SMA usage)

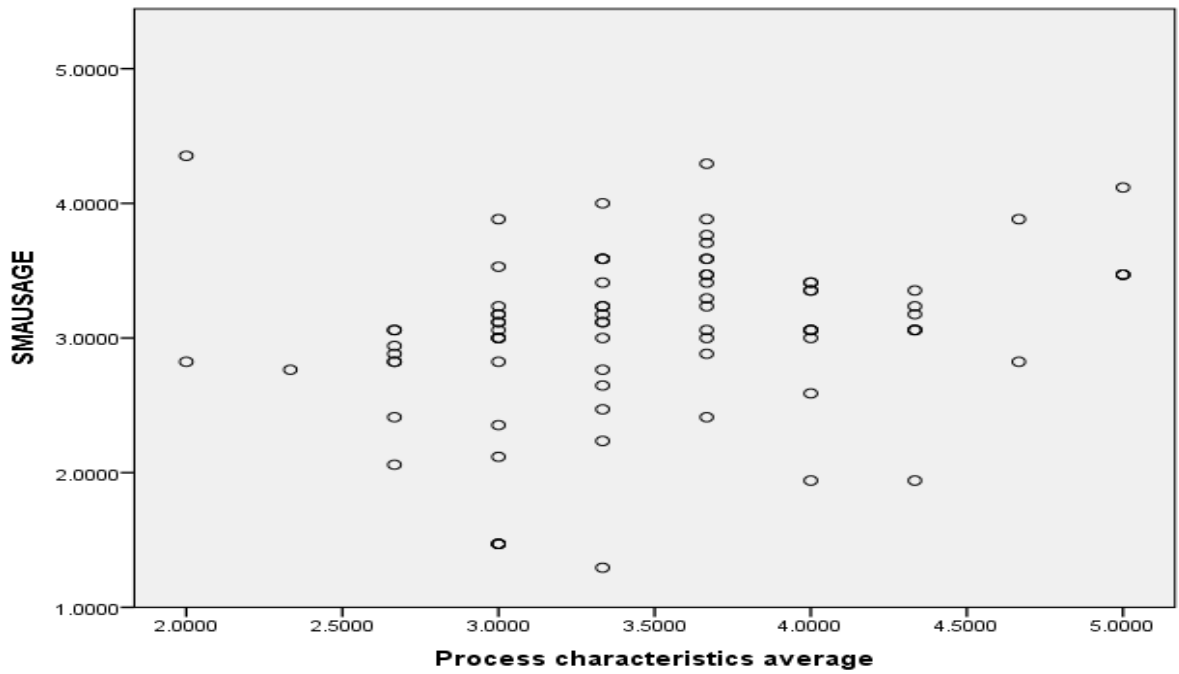


Figure 7.2: The linearity of relationship between IV (process characteristics) and DV (SMA usage)

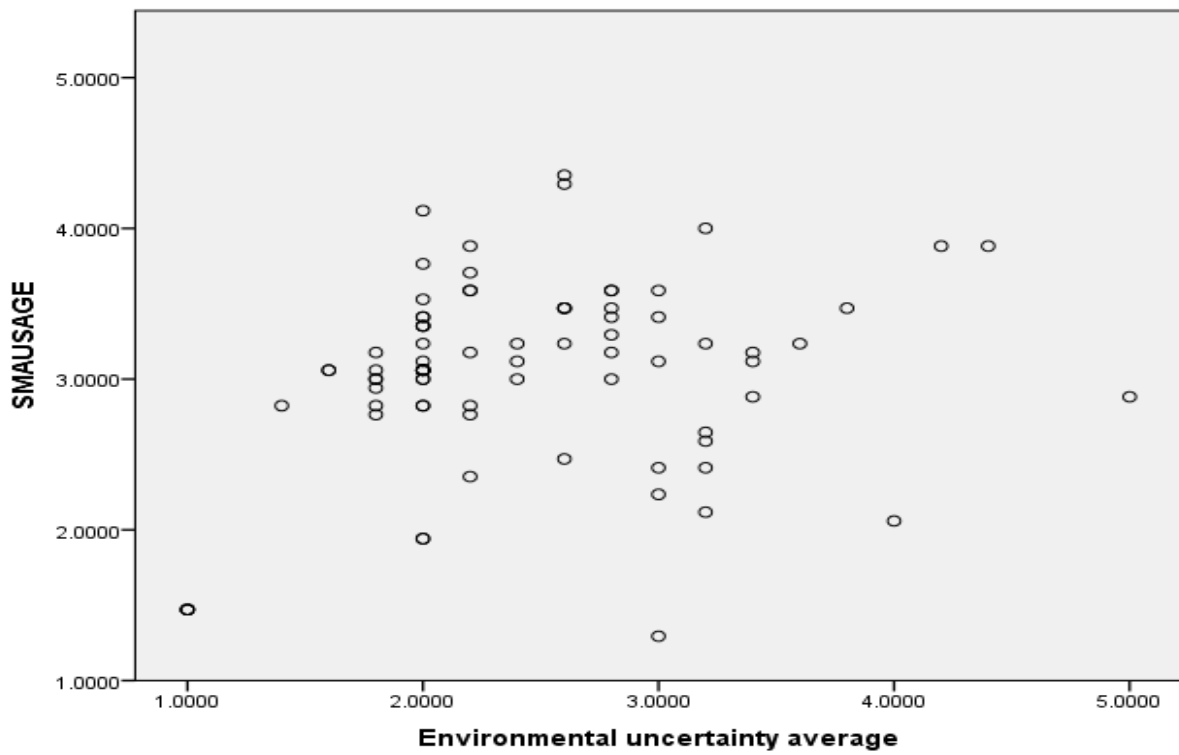


Figure 7.3: The linearity of relationship between IV (environmental uncertainty) and DV (SMA usage)



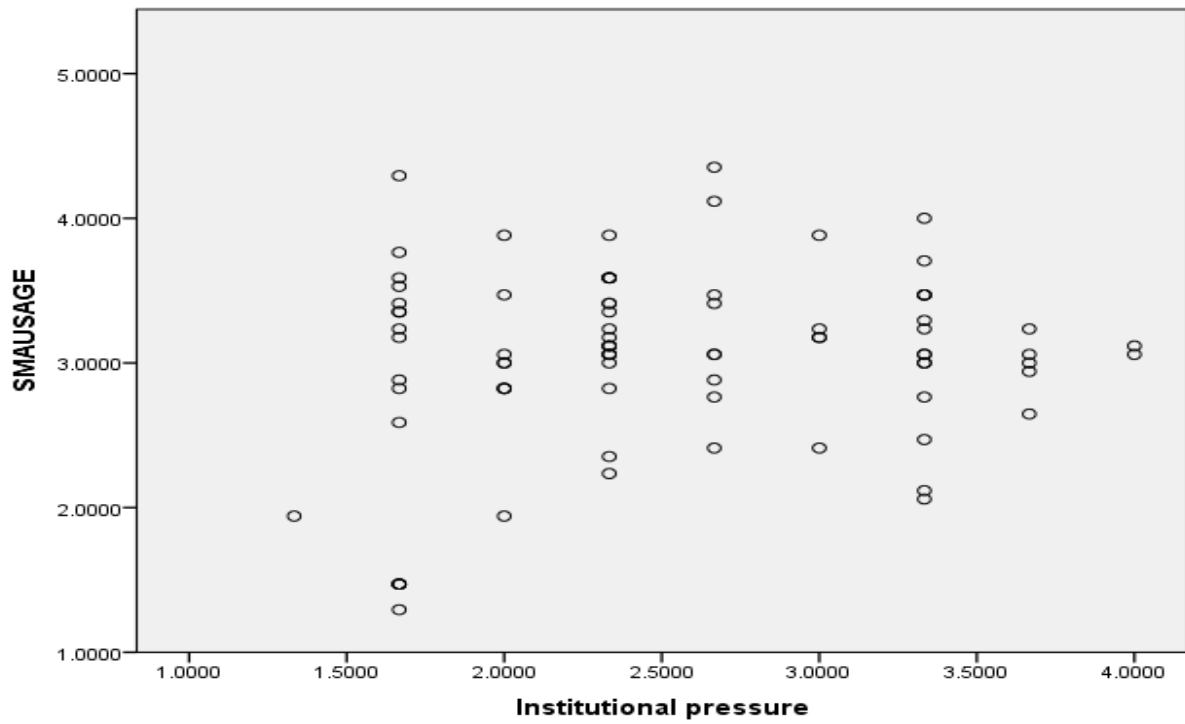


Figure 7.4: The linearity of relationship between IV (institutional pressures) and DV (SMA usage)

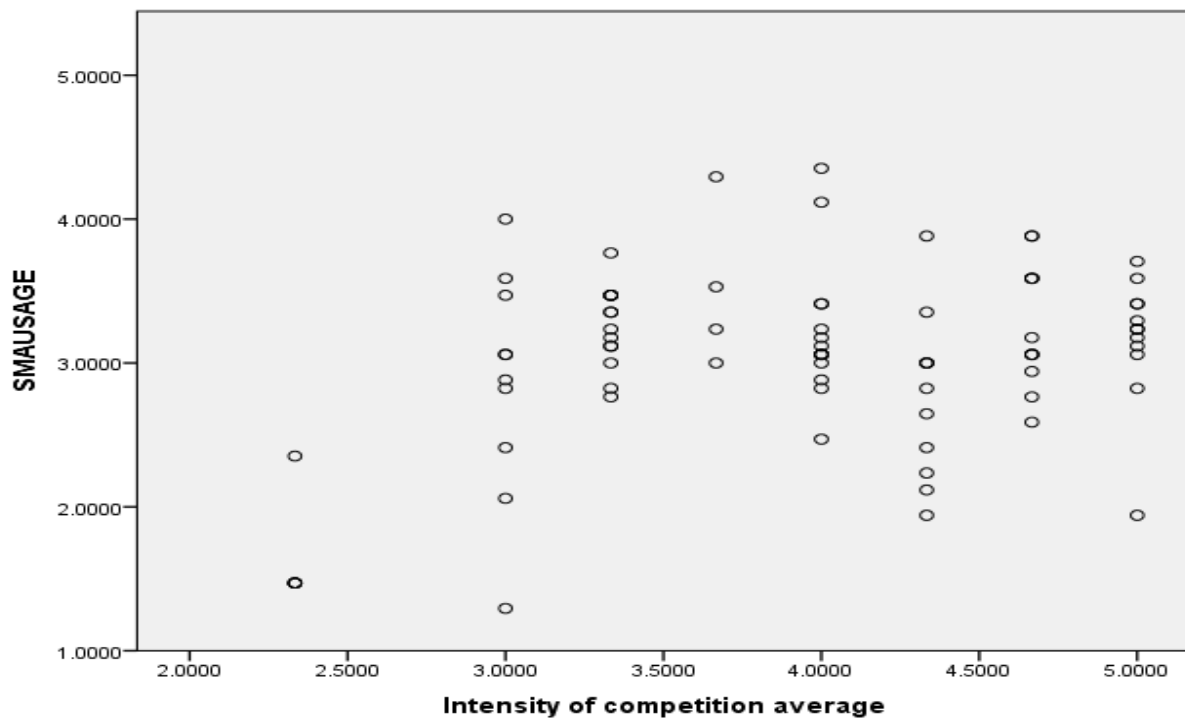


Figure 7.5: The linearity of relationship between IV (intensity of competition) and DV (SMA usage)

**Assumption 2: The values of the residuals are normally distributed.**

This assumption is tested by producing a P-P Plot for the models. If the dots are closer to the diagonal line, the residuals are taken to be normally distributed. As can be seen in the following figure, majority of the dots are closer to the diagonal line. Accordingly, it can be held the residuals of the models are normally distributed.

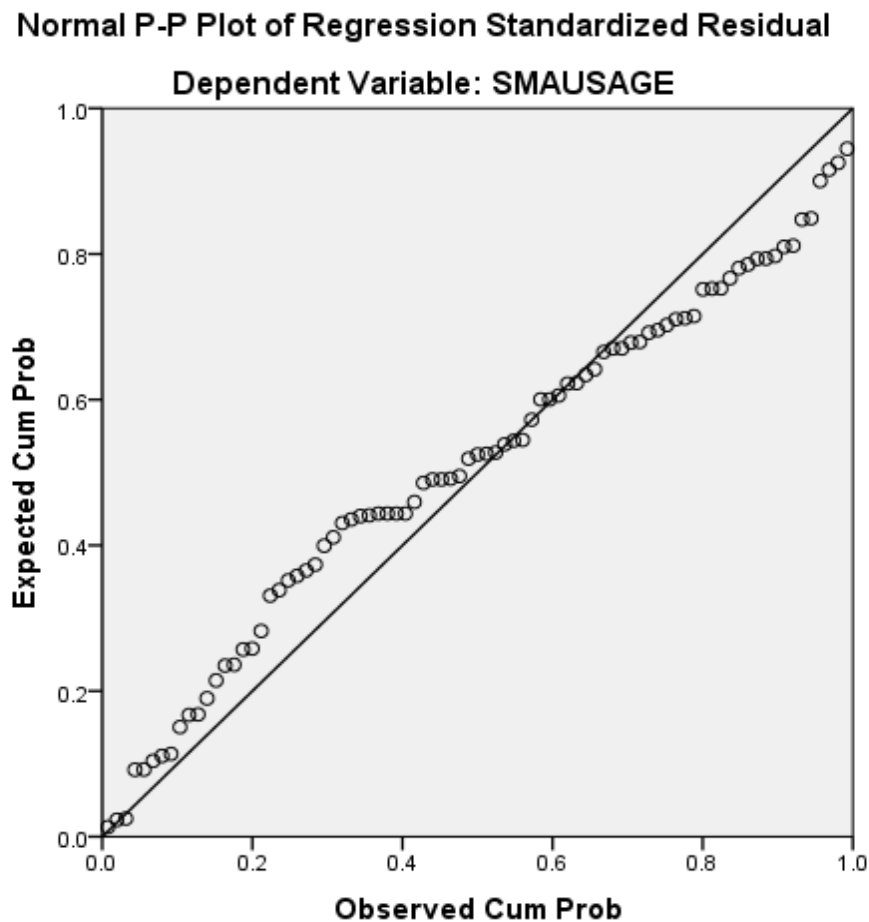


Figure 7.6: The normality of the distribution of residuals

**Assumption 3: The variance of the residuals is constant.**

To confirm that the variance of the residuals is constant, this study looks at the homoscedasticity. The variations in the residuals should be identical at each point of the model to assure homoscedasticity. If the criteria are met, the scatter plot should look like a random array of dots. However, if the resulting graph looks like a funnel shape, it can be

taken as the violation of the assumption (heteroscedasticity). As can be seen in the figure below, the scatter plot looks like more random than funneled, which implies that the assumption homoscedasticity is satisfied.

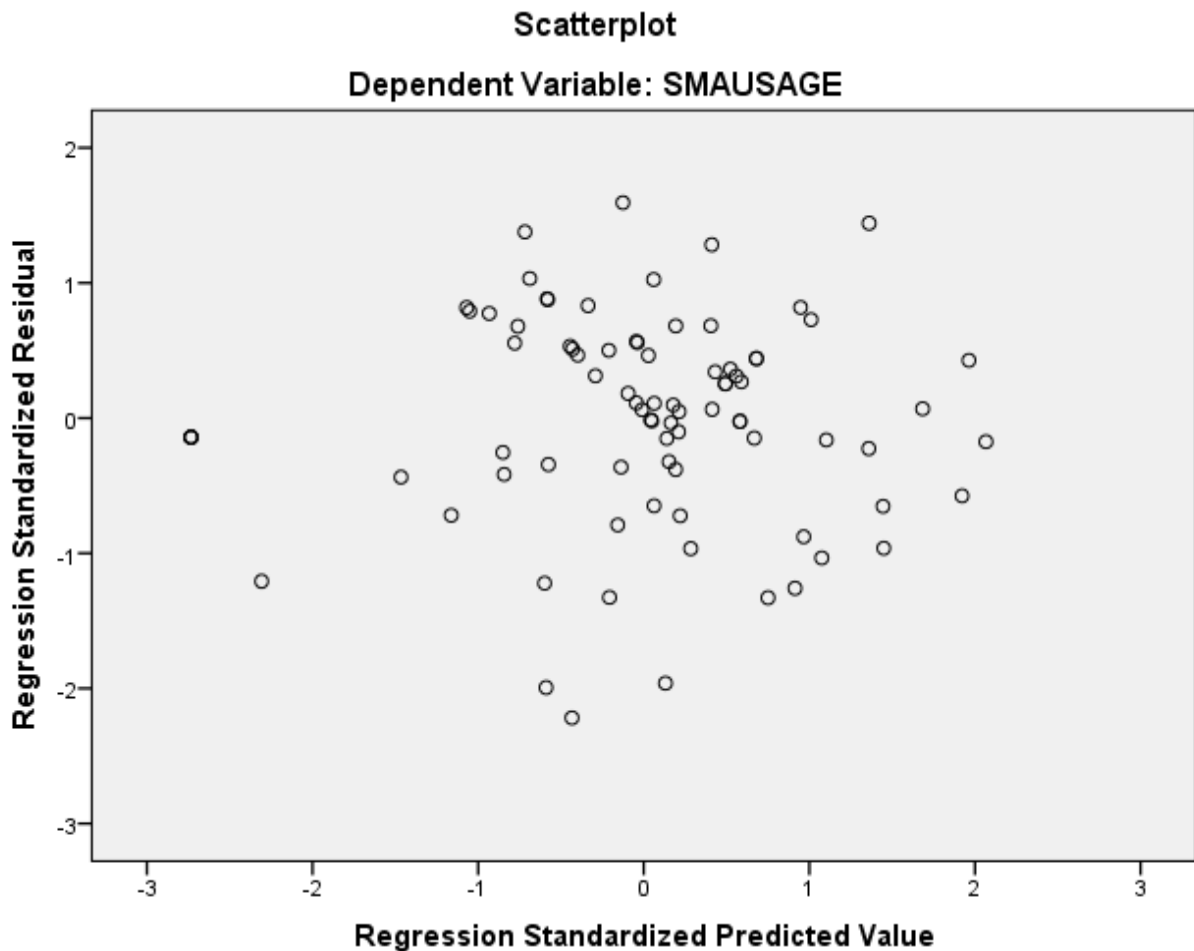


Figure 7.7: The homoscedasticity of the regression models

**Assumption 4: There are no influential cases that can bias the models.**

To examine whether there are any influential cases that can bias the models, this study calculates the Cook's distance values. Cook's distance values below 1 suggest that there are no individual cases that can unduly influence the models. The results showed that (not reported here due to space limit, but available on request) all the distance values are substantially less than 1 and majority of values are close to zero.

**Assumption 5: There is no multicollinearity in models.**

Table 7.2 to 7.18 reports variance inflation factor (VIF) of the respective models. The values between 0 and 10 indicate that the models are free from the problem of multicollinearity. In other words, if the resulting VIF remain below 10, it indicates the absence of multicollinearity in the regression models (Myers, 1990; Greene, 2008). As the values of VIFs reported in Table 7.2 to 7.18 are all substantially below 10, it can be held that the regression models are free from the problems of multicollinearity.

**Assumption 6: The values of the residuals are independent.**

Saunders et al. (2003) suggested if the value of Durbin-Watson statistic lies between 1.5 and 2.5, it indicates that the values of the residuals are independent. As the values of Durbin-Watson statistics of all the models are between 1.5 and 2.5 as depicted in the Table 7.2 to 7.18, therefore it can be held that the values of the residuals are independent and uncorrelated.

## **7.5 Chapter summary**

This chapter presents the correlation and regression results between several contingent factors and SMA usage. Additionally, this chapter shows the effect of adoption of SMA techniques on perceived and market-based firm performance. Regarding the effect of business strategy, the results show a significant positive effect of strategic pattern on SMA usage, implying a greater SMA usage in prospector type companies than in defender companies. In the firm structure category, the results exhibit a greater SMA usage in decentralized organizations. Companies with cultures of low power distance between executive positions and emphasizing greater organizational interest also demonstrate greater SMA usage.

Table 7.22: Summary of hypotheses accept/reject status

	Variables	Hypotheses	Status
Business strategy	Strategic pattern	H1a: SMA usage rates are higher in prospector type companies than in defender type companies.	Accepted
	Strategic mission	H1b: SMA usage rates are higher in companies pursuing build mission than in companies pursuing harvest mission.	Rejected
	Strategic positioning	H1c: SMA usage rates are higher in companies pursuing product differentiation strategy than in companies pursuing cost leadership strategy.	Rejected
Organizational structure	Degree of decentralization	H2a: SMA usage rates are higher in decentralized companies than in centralized companies.	Accepted
	Structuring of activities	H2b: SMA usage rates are higher in companies adopting organic structure than in companies adopting mechanistic structure.	Rejected
Organizational culture	Power distance	H3a: SMA usage rates are higher in companies with low power distance than in companies with high power distance.	Accepted
	Organizational interest	H3b: SMA usage rates are higher in companies emphasizing collectivism than in companies emphasizing individualism.	Accepted
	Uncertainty avoidance	H3c: SMA usage rates are higher in companies accepting uncertainty than in companies avoiding uncertainty.	Rejected
	Career focus	H3d: SMA usage rates are higher in companies with higher career focus than in companies with lower career focus.	Rejected
Process characteristics	Complexity	H4a: SMA usage rates are higher in companies employing complex processing system.	Rejected
	Task uncertainty	H4b: SMA usage rates are higher in companies employing process with high task uncertainty than in companies employing process with low task uncertainty.	Accepted
	Task interdependence	H4c: SMA usage rates are higher in companies employing process with high task interdependence than in companies employing process with low task interdependence.	Accepted
	Advanced technology	H5a: SMA usage rates are higher in companies with advanced operating technology.	Accepted

Other internal organizational variables	Market orientation	H5b: SMA usage rates are higher in market-oriented companies than in product-oriented companies.	Rejected
	Accountant participation in strategic decision	H5c: SMA usage rates are higher in companies with greater accountant participation in strategic decision making.	Rejected
	Presence of CMA	H5d: SMA usage rates are higher in companies with greater number of certified cost and management accountants.	Rejected
Environmental uncertainty	Perceived environmental uncertainty (PEU)	H6: SMA usage rates are higher in companies perceiving a higher degree of environmental uncertainty than in companies perceiving a lower degree of environmental uncertainty.	Accepted
	Unpredictability of the environment	H6a: SMA usage rates are higher in companies perceiving a higher degree of unpredictability of the environment than in companies perceiving a lower degree of unpredictability of unpredictability of environment.	Rejected
	Fluctuation in the external environmental factors	H6b: SMA usage rates are higher in companies perceiving a higher degree of fluctuation in the external environment than in companies perceiving a lower degree of fluctuation in the external environment.	Accepted
	Ambiguity of environment	H6c: SMA usage rates are higher in companies perceiving a higher degree of ambiguousness of environmental information than in companies perceiving a lower degree of ambiguousness of environmental information.	Rejected
	Lack of information on environmental factors	H6d: SMA usage rates are higher in companies perceiving a higher degree of lack of information on environmental factors than in companies perceiving a lower degree of lack of information on environmental factors.	Rejected
	Uncertainty of outcome of decision	H6e: SMA usage rates are higher in companies perceiving a higher degree of uncertainty about the outcomes of decisions than in companies perceiving a lower degree of uncertainty about the outcomes of decisions.	Rejected
	Environmental hostility/intensity of	H7: SMA usage rates are higher in companies perceiving a higher degree of environmental hostility	Accepted

Environmental hostility	competition	than in companies perceiving a lower degree of environmental hostility.	
	Stressful competition	H7a: SMA usage rates are higher in companies facing stressful competition.	Accepted
	Market domination	H7b: SMA usage rates are higher in companies operating in an industry dominated by few companies.	Accepted
	Entry restriction	H7c: SMA usage rates are higher in companies operating in an industry where entry restriction is high.	Rejected
Environmental complexity, diversity, ecology	Environmental complexity	H8a: SMA usage rates are higher in companies perceiving higher environmental complexity than companies perceiving lower environmental complexity.	Rejected
	Environmental diversity	H8b: SMA usage rates are higher in companies perceiving higher environmental diversity than companies perceiving lower environmental diversity.	Accepted
	Ecological pressure	H8c: SMA usage rates are higher in companies perceiving higher ecological pressures than companies perceiving lower ecological pressures.	Rejected
Institutional pressures	Coercive pressure	H9a: SMA usage rates are higher in companies perceiving higher coercive pressures than companies perceiving lower coercive pressures.	Accepted
	Mimetic pressure	H9b: SMA usage rates are higher in companies perceiving higher mimetic pressures than companies perceiving lower mimetic pressures.	Accepted
	Normative pressure	H9c: SMA usage rates are higher in companies perceiving higher normative pressures than companies perceiving lower normative pressures.	Rejected
SMA usage and firm performance		H10: There is a positive association between SMA usage and firm performance.	Accepted

Regarding the process characteristics variables, companies characterized by high task uncertainty and interdependence show greater interest on SMA usage. The use of advanced technology in operations is also significantly and positively associated with SMA usage.

With respect to the effects of external environmental factors on SMA usage, the effects of PEU, fluctuations in the environmental factors, environmental hostility, stressful competition,

market domination, and environmental diversity on SMA usage are found significant. In regard to the institutional pressures, this study found a significant positive influence of coercive and mimetic pressures on overall and specific group of SMA usage. A significant positive influence of SMA usage on perceived and market-based firm performance is also clearly evident in the regression results. Finally, this chapter shows the validity and reliability of the regression results by demonstrating how each of the assumptions of OLS has been satisfied.



# **CHAPTER EIGHT**

## **INSTITUTIONAL EXPLANATION OF MANAGEMENT ACCOUNTING CHANGE**

### **8.1 Introduction**

This chapter presents the views of the respondents with respect to the changes in management accounting system (MAS) over time. More specifically, where an organization's MAS experienced no changes over time, this section of the present study attempts to uncover who are the agents and what factors are responsible for such rigidity. In contrast, where there is a change in the existing MAS (specifically shifted from traditional MA tools to sophisticated SMA tools), then what are the institutional forces that make it happen, why and how changes take place, is the focal point of this chapter. Additionally, the nature of changes, process of changes, change initiator, implementation of new tools and resistance to changes are also addressed in this chapter. An in-depth interview of 20 CFO/CEO/Management Accountants is conducted using the premises of institutional (NIS) theory to explain the changes in the MAPs over time.

### **8.2 Management Accounting Change**

In recent years, management accounting change has become a topic of much research and debate (Burns and Scapens, 2000; Napier, 2006; Ribeiro and Scapens, 2006), covering several aspects of change including the nature of change (Quattrone and Hopper, 2001), typologies of change (Sulaiman and Mitchell, 2005), changes in the pattern of practices across organizations and organizational sectors (Lapsley and Wright, 2004) and changes within specific organization (Ribeiro and Scapens, 2006). Moreover, whether management

accounting has not changed, has changed, or should change have also received the attention of researchers (Burns and Scapens, 2000). Although several scholars (e.g., Drury et al., 1993) have claimed that the fundamental nature of management accounting system has not changed (Burns and Scapens, 2000), some others (e.g., Bromwich and Bhimani, 1994) argued to have evidence in support of changes in the use of accounting within the management process (Burns and Scapens, 2000). Additionally, the environment (e.g., information technology, organizational structures, market competitiveness and management practices) in which management accounting is practiced has also changed (Ezammel et al., 1993; Burns and Scapens, 2000). Burns and Scapens (2000) further hold that comparatively little research has focused on the process through which new management accounting system and practices have emerged or failed to emerge over time. Majority of the existing research has focused on the object of change (Busco et al., 2007) and has taken such changes in management accounting as an outcome (Covaleski et al., 1993) rather than as a process (Burns and Scapens, 2000).

However, as accounting change is now seen as context dependent practice (Busco et al. 2007), alternative management accounting research which adopted interpretive, critical and post-modern perspectives is emphasized (Arroyo, 2012) to gain deeper understanding of accounting practices and their change process (Baxter and Chua, 2003), specifically to investigate the development and change in management accounting practices (Covaleski et al., 1996).

In defining management accounting change, the present study follows a modified version of the typology of change suggested by Sulaiman and Mitchell (2005). They classified management accounting change into five categories: (1) addition, (2) replacement, (3) output modification, (4) operational modification, and (5) reduction. However, as the present study focuses on the adoption of SMA practices in Bangladesh, it exclusively concentrates only on

the first two categories of change. The underlying cause of this selection is that the later three categories of change do not constitute adoption of a new technique like SMA. The first category of change is the ‘addition’ which refers to the introduction of a new MA technique as extensions of the existing MAS without replacing the old ones (Innes and Mitchell, 1990; Sulaiman and Mitchell, 2005). However, by ‘addition’, this study refers to the adoption of a new and innovative MA technique with external and long-term focus such as SMA techniques (i.e., the introduction of any of the 17 SMA techniques considered in this study without replacing the old MAPs). The second category of MA change is the introduction of a new technique as a replacement of one or more existing MA techniques. For example, the existing costing systems may be replaced with full ABC systems (Gosselin, 1997). In this study, the adoption of one or more SMA techniques as the replacement of one or more traditional MA techniques is taken under this category.

### **8.3 Management Accounting Change in Bangladesh**

Between the two categories of change, the dominance of the first category (i.e., addition of a new SMA without replacing the old one) is apparent in the Bangladeshi listed companies. Of 20 companies, 14 (70%) companies have changed their MAS during the last 3 years. More specifically, 8 of the 20 (40%) companies introduced new SMA without replacing old MAPs. This proportion is comparatively lower than that reported by Sulaiman and Mitchell (2005) who showed that about 42 of 92 (or 45%) of the Malaysian manufacturing companies have extended their MAS by introducing new MA technique with no replacement. Lasyoud et al. (2018) also documented extensions of MA change such as the introduction of quality management system and performance measurement in terms of customer satisfaction with no replacement in the Libyan public manufacturing companies. To illustrate this nature of change, one of the AVP of a Shari’ah-based bank commented that:

*“To ensure compliance with the regulatory requirements, our core software has been upgraded to the latest version. This change also affects our MAS as we can get more real time data about our competitors, customers, and other external factors including the market forces. This change motivates us to introduce several innovative and strategic MA tools to better equip our top management team members with strategic information.” (Interviewee No.1)*

As can be learnt from this statement, improvement in the core software to an update version can facilitate accumulation of real time and detailed information. This, in turn induces management to adopt strategic oriented cost management tools to meet the information needs of top management team (TMT). This finding is consistent with the descriptive statistics presented in Chapter 6 which showed a higher SMA usage in the competitor and other SMA practices. Moreover, this statement is supportive to the findings presented in Chapter 7 which documented a positive impact of advance technology and competition intensity on the adoption of SMA practices.

The issue of cost management is more complicated in the conglomerates. One of the Managers (Finance and Accounts) of a local and country’s leading conglomerate states why they are constantly pursuing to adopt new and innovative cost management tools. She commented that:

*“Several years ago, we were employing traditional cost management techniques such as standard costing, variable costing etc. However, the entrance of substantial number of competitors and advancement in technology create the need for the use of new type of information. Specifically, top management team responsible for strategic decision making seeks for detailed information about operations, activity, competitors and customers which cannot be generated from the traditional MAS. These drive us to sophisticate MAS by adopting a number of innovative and strategic oriented cost management tools like activity-based costing (not for product pricing but for internal decision making), balanced scorecard, competitor accounting, customer accounting and benchmarking. To implement this sophistication, a cross-functional team led by CFO was formed that comprises of people from accounts and finance, marketing, IT, and business process reengineering divisions. Despite the initial panic among employees regarding their capability to cope up with the new tools, several workshop, training, and discussions allowed us to quickly grip the benefits of new techniques adopted. In fact, we constantly update our MAS for two critical reasons: first, to meet the information needs of our management which are persistently changing; and second, to attain competitive advantage. Certainly, we have been highly benefited adopting those new techniques specifically in terms of the quality and availability of information and decision.” (Interviewee No.9)*

The second category of MA change, replacement, was made by a lower proportion of companies (6 of 20 or 30%) than the addition type of change. This replacement usually involves the elimination of old MA techniques with that of modern and strategic oriented MA technique. However, this proportion is still lower than that (70%) reported by Sulaiman and Mitchell (2005) in the context of Malaysian manufacturing companies. A senior executive vice president (SEVP) of an NBFBI described why their company has replaced old MA technique with new ones. He commented that:

*“We replaced our old system with enterprise resource planning (ERP) where we add necessary cost management techniques to meet the information needs of TMT. Previously, we used a number of software for different purposes which cause the coordination problem among the activities of various segments. Also real time information was not available which cause interruption of prompt services to our clients. These motivate us to add innovative and new MA tools to our ERP. We also have the plan to add more innovative MA tools to our integrated ERP in the foreseeable future.” (Interviewee No.6)*

Consequently, the implementation of ERP software has substantial bearings on the adoption of strategic and innovative MA techniques. Specifically, the establishment of coordination between divisions and segments from a single point allows accountants access to diverse data which, in turn, stimulate them to adopt innovative MA techniques. Moreover, while ERP is established, the TMT members exhibit greater demands for strategic oriented information.

The old information system was also replaced in the manufacturing sector but for different purpose. For example, the deputy manager of a cement company noted that:

*“Previously we used a number of separate software to manage activities separately which cause interruption to control our cost and budget. These motivate us to implement ERP which contains various modules for cost control and budget control. Now, we can retrieve data from our system to employ a number of innovative and strategic oriented MA tools including activity-based costing, target costing and so on....as the replacement of old ones such as traditional costing.” (Interviewee No.7)*

The non-availability of separate MA software induces companies to instigate features of cost management tools to their integrated software. While the accounts and finance (A&F) divisions remain busy with compliance and reporting tasks in majority of the portion of the

year, they are also assumed to take the responsibility to supply strategic information demanded by the top TMT members while formulating strategies. These forced the A&F division to modify or introduce innovative SMA tools with external and long-term focus.

The Finance Director of an MNC in the pharmaceuticals industry explained why they could not adopt many of the innovative cost management tools such as SMA despite the imperativeness of such tools.

He noted that:

*“Recently, we started implementing our ERP system to provide real time information to our various stakeholders and to facilitate better decision-making. Phase 1 (financial reporting) is completed so far. Phase 2 will include manufacturing and cost control related issues. We expect to include a number of innovative and new cost management techniques such as SMA in this module. The underlying reason for such change was that our old system was not competent to meet the information needs of the changed business environment specifically to address IT related change. In my opinion, the lack of TMT awareness is the fundamental reason for the low adoption of innovative cost management techniques such as ABC, BSC, and strategic costing.” (Interviewee No.10)*

The CFO of another pharmaceutical company also recognizes lack of TMT awareness and application of such techniques in the industry as the causes of non-adoption of SMA techniques. In contrast, the CFO of one of the oldest chemical companies explicates why they feel the necessity to adopt new SMA tools and why they cannot adopt them despite the urgency for such adoption. He commented that:

*"Board wants to know the level of customer satisfaction and process improvement. These stimulate us to collect data on customers to measure the level of their satisfaction. Also, our production dept started measuring process improvement. Additionally, the AIS and MIS started working to accumulate more data on our competitor and customer.*

*Why specific SMA techniques such as ABC, BSC are not being used?*

*Our TMT/Board emphasizes the compliance issues, specifically external compliance. Accordingly, we find a very little time to concentrate on the evaluation of a new SMA or their introduction. In fact, they are not aware of the benefits of using these techniques; they just want to see more profit without or minor modification of the existing system.” (Interviewee No.11)*

The deputy manager (finance & accounts) of a large group doing business in the readymade garments (RMG) sector recognizes the non-existence of the use of SMA techniques in the industry as the leading cause for their low adoption in their company. He noted that:

*“SMA techniques like ABC, BSC are not fully used due to the non-existence of their use in the industry”. (Interviewee No.15)*

However, the deputy general manager (Accounts and Finance) of another textile company identified the non-availability of competent and professional cost and management accountant as the leading cause of non-adoption or low adoption of innovative SMA techniques. He noted that:

*“We were using separate software for accounting, logistics, and other functions. In addition to the coordination problem, the information need of the board was hardly satisfied specifically in the changed business environmental shaped by advanced IT and fierce competition. This compelled us to think about the modernization of management control system. Accordingly, we replaced our old system with ERP which includes a number of modules that facilitate the application of a number of customer and competitor and strategic costing oriented SMA techniques. It was hardly possible for us to do such analysis under our old IS. As we are doing export-oriented business, the use of external oriented information over the long-term horizon seems to be inevitable to grip the customers. However, while the implementation gets started, we face shortage of skilled manpower specifically in the cost management and IT division. This forced us to hire experienced CMA and IT people. I led the team which comprises people from accounts and finance, IT, operation and selling division. Human resource division was instructed to restructure the chain of reporting under the new system. We experienced a lot of difficulties in sanctioning going beyond the budget and time. Now, we can supply majority of the strategic cost information demanded by the TMT members. Gradually, we are experiencing the benefits of adopting innovative cost management tools. Our TMT are also motivating us to keep up the pace of change.” (Interviewee No.14)*

In state-owned enterprise (SOE), the absence of profit motive, non-existence of competition, low discretion to adopt new tools and techniques, dominance of central bargaining agent (CBA), and lack of skilled and competent manpower are recognized as the central causes of non-adoption or low adoption of SMA techniques. For example, the CFO of a Tea company commented that:

*“As a state owned enterprise, we have the lack of skilled manpower. That’s why we could not go for sophisticated and IT based IS such as ERP. Also it is very tough to get the consent of the board which is composed of government bureaucrats with little*

*knowledge in cost and management accounting or MCS. They just want to see us with full compliance with all the regulations issued by the government ministry. Accordingly, we have little time to concentrate on cost management issue. Also profit is not the ultimate goal of our enterprise. We do not sell our product to ultimate consumers. In fact, we have no competitors; we just sell our tea to particular customers through auction. These further trim down our motivation to go for any strategic and future oriented SMA techniques.” (Interviewee No.18)*

The deputy manager of a state-owned company operating in energy sector also explained why they are not adopting innovative and strategic oriented cost management tools. He noted that:

*“As a government owned enterprise, we function in line with the instruction of the concerned ministry. Our task is just to transmit gas from the gas extractor to consumers. PETROBANGLA is our mother organization. As a non-profit organization we have very little discretion to design MAS or SMA for us. Rather the government or the ministry set the tone of our activity. We just comply and report as the ministry asked to do.” (Interviewee No.19)*

Lack of discretion to adopt and implement a change in the information system seems to be the central problem in the government-owned companies. This is further advanced by the extensive focus on the compliance of departmental and regulatory rules and laws.

Finally, the general manager (accounts and finance) of another SOE operating in the steel and engineering sector also cited an identical situation. She commented that:

*“We are running year after year using our traditional MAS. We have the lack of efficient manpower. More importantly central bargaining agent (CBA) or workers union is too much powerful here who resist to radical IT change where majority of them will be incapable to work. Additionally, majority of the stakes are held by the government whose primary goal is not to earn profit which create further barrier to adopt state of the art technology and SMA techniques. We are just doing some routine work majority of which are compliance related.” (Interviewee No.20)*

To sum up, it can be held that the nature of change in the MAS during the past three years is dominated by ‘addition’ of new SMA without replacing old MAPs, followed by the ‘replacement’ of old MAPs by new SMA techniques. However, the pace of MA change is lower as compared to other parts of the globe. Advancement in technology, specifically information technology and increase in the TMT demand for more strategic information



about competitors, customer and other external factors drive changes in the MAS in several companies. Lack of awareness of TMT about the benefits of SMA techniques, inadequate supply of professional cost and management accountants, and the non-existence of MAS sophistication in the industry, inter alia, were recognized as the leading causes of non-adoption or low adoption of SMA techniques.

#### **8.4 Institutional factors**

As organizations exist in highly institutionalized environments (the cultural rules and social norms; not merely a source of task constraints or a relational network), they adopt innovations in structures and procedures that are accepted and valued in their social and cultural environment (Meyer and Rowan, 1977; DiMaggio and Powel, 1983), purposely to achieve legitimacy and secure resources essential for survival (Ribeiro and Scapens, 2006). In the earlier stage of life cycle, organizational fields exhibit considerable diversity in approach and form (DiMaggio and Powel, 1983). However, once a field becomes well established, there is a persistent push towards homogenization (DiMaggio and Powel, 1983). This process of homogenization is known as 'isomorphism' (DiMaggio and Powel, 1983), and is usually achieved through the diffusion of specific organizational forms and procedures across organizations operating in similar environments (Scott, 2008) or societal sectors (Scott and Meyer, 1992) or organizational fields (DiMaggio and Powel, 1983). DiMaggio and Powel (1983) identified three mechanisms of institutional isomorphic change: (1) coercive isomorphism that stems from political influence and the problem of legitimacy; (2) mimetic isomorphism that arises due to standard responses to uncertainty; and (3) normative isomorphism resulting from professional influence.

### 8.4.1 Coercive isomorphism

Coercive pressures assert the enforcing and regulative facets of specific institutions (Hussain and Gunasekaran, 2002), which may emerge from both formal and informal pressures exerted on a particular organization by other organizations upon which they are dependent (DiMaggio and Powel, 1983). In Bangladesh, Bangladesh Bank (BB), Registrar of Joint Stock Companies and Firms (RJSC), and Bangladesh Securities and Exchange Commission (BSEC) have noticeable influence on the activities of listed companies. Unfortunately, these regulators have negligible influence on the adoption of SMA techniques or changes in MAS. More surprisingly, the standard setters namely the Institute of Chartered Accountants of Bangladesh (ICAB), the Institute of Cost and Management Accountants of Bangladesh (ICMAB), and Financial Reporting Council (FRC) do not exert any pressure to adopt particular SMA technique or changes in MAS in the sample companies.

However, stakeholders particularly shareholders exert considerable pressures to adopt strategic oriented and innovative cost management tools. Several companies noticed that they are facing substantial pressures from stakeholders, specifically from foreign shareholders to adopt innovative cost management techniques. For example, the Senior Executive Vice President (SEVP) of a multinational private commercial bank commented about the pressure exerted by their foreign shareholders:

*“A significant portion (about 40%) of the bank’s shares is held by foreign investors. They are very much concerned with the adoption of innovative and advanced cost management techniques practiced at their home country. Few years back, they advised the management to adopt several aspects of balanced scorecard to evaluate performance from both financial and non-financial perspectives. The implementation team comprises of both in-house employees and foreign consultants. The marketing division was engaged to facilitate measurement of customer satisfaction, manufacturing division to measure process improvement, and human resource division (HRD) to measure learning and innovation. However, while implementing BSC, we discovered the emergence of several issues that were not considered under the original plan. This compelled us to move beyond the budget and schedule which create further difficulties to sanction the consent of TMT. During implementation, we emphasized on the alignment of strategy with this new technique of performance measurement system. Eventually, we experienced favorable impact of adopting BSC*

*on several aspects of performance. This experience stimulates us to further advance our MCS.” (Interviewee No.2)*

This finding is consistent with the arguments of Sedlak (1981), Coser et al. (1982) and DiMaggio and Powel (1983) in the sense that the depending organizations adopt rules and structures, accounting practices and performance evaluations that are compatible with the organizations controlling or influencing them in a variety of ways. Yazdifar and Tsamenyi (2005) also presented evidence in support of this argument and reported that the dependent organizations are likely to adopt certain practices due to influence from resource providers.

The deputy manager of a group of textiles companies also recognized the presence of controlling pressure from the sponsors and boards of parent company in a conglomerate while derecognized mimetic pressure from industry due to the non-existence of competition.

He noted that:

*“Our stakeholder specifically the board of parent company exerts tremendous pressure to provide detailed information on competitor, customers, operation, cost and budget. These fostered us to adopt innovative SMA techniques fundamentally those that involve analysis of customer data, competitor data and strategic data. As we are unique in the industry, in the sense that our products and customers are unique and we have no competition in this regard, we rarely found industry best practices to copy. Accordingly, we had to hire IT consultant to form a separate cell which also include insider from cost and budget, marketing, finance and HRD dedicated for the development of a portfolio of new MA techniques having strategic focus. Within a few weeks, we realized that the existing information system is not capable to supply data required to sophisticate MAS. Consequently, we shifted our focus to implement a customized ERP system and include cost related modules within the ERP to enable it to provide necessary data. Unfortunately, we had to sit for several times with the board to sanction the funds required to implement the ERP and SMA techniques. ” (Interviewee No.15)*

Coser et al. (1982) also reported similar finding and suggested that it is common for subsidiaries to adopt standardized reporting mechanisms followed in the group. This finding is also consistent with the arguments of Scott (1987) which contends that some institutional forms are sufficiently powerful to impose structural forms and/or practices on subordinate organizational units (Yazdifar and Tsamenyi, 2005). Moreover, Yazdifar and Tsamenyi

(2005) attributed the presentation of management accounts by subsidiaries (or sister concerns) in formats dictated by the parent company to the relation between subsidiary and parent.

The deputy manager of another group of textile companies expressed his dissatisfaction with the top management regarding the release of resources to implement particular SMA techniques while demand for such information from the traditional Accounts & Finance (A&F) division. He commented that:

*“Our top management constantly asks for new type of information in detail which compels us to adopt and implement strategic oriented MA techniques. Unfortunately, sponsors and board are not willing to incur additional cost of maintaining a separate cost management division. Rather they seek for such information from traditional A/F while the A/F division is busy with reporting and compliance functions throughout the year.” (Interviewee No.14)*

Unfortunately, despite the realization of importance of strategic oriented cost management information, the TMT members are still reluctant to set up and maintain a separate cost management division. This reluctance is certainly discouraging and will discourage the adoption and implementation of SMA techniques in these sectors.

Apart from these coercive pressures from controlling companies and their stakeholders, the international donor agencies (e.g., International Monetary Fund-IMF and the World Bank-WB) also exert pressures through regulators and government to adopt innovative and modern cost management tools in few state-owned enterprises (SOE) to ensure optimum allocation and uses of scarce resources. This, in turn, induced government to exert pressure on government owned companies to implement strategic-oriented and innovative cost management tools.

For example, the CFO of a SOE operating in the food sector noted that:

*“We can change our MAS on the recommendation of Stakeholders specifically the government agencies/ministries. In fact, the pressure comes from donor agencies like IMF, World Bank and the like. To a little extent, we feel pressure from the best performer in the industry. As we are non-profitable SOE, we are to go for change if*

*prescribed by the GOVT. We may propose change in the existing MAS, but our MD or board has little option to approve unless sanctioned from the government agencies.” (Interviewee No.18)*

Meyer and Rowan (1977) recognized the influence of rationalized states and other large rational organizations in bringing about homogenization in organizational rules and structures. They further showed how organizations are increasingly homogeneous within given domains and increasingly organized around rituals of conformity to wider institution. More importantly, organizations have to ignore the constraints posed by technical activities and emphasize on homogeneity (DiMaggio and Powell, 1983). In support of the above findings Sedlak (1981) documented how the US Charities homogenized their structures and methods in line with the recommendation of donor agencies to ensure continuous flow of support. Hussain and Gunasekaran (2002) also recognized the influence of IMF and WB over other institutions in shaping performance measurement systems. The identical situation is also vigilant in another SOE controlling the country’s energy supplies. The head of A&F affirmed that:

*“The Government of Bangladesh (GOB) pushes the ministry of power and energy and they push Petro Bangla (the mother organization) and they push us to adopt innovative change in the MAS. We have very limited opportunity to follow the industry leader.” (Interviewee No.19)*

Accordingly, it can be held that government owned companies are more influenced by the donor and government agencies in the adoption of innovative cost management tools in the way of achieving homogenization and to organize around rituals of conformity to wider institution.

Unfortunately, while the government and donor agencies push some SOEs to adopt innovative cost management tools, the presence of a strong central bargaining agency (CBA) can complicate the adoption. Such disappointing situation is apparent in the country’s controlling steel and engineering SOC. The manager-A&F- commented that:

*“We have two conflicting major stakeholders who shape every change here. First, the government agencies or the board member who induce us to adopt innovative and modern MAS that will provide us detailed strategic data on our internal as well as external elements. Second is the CBA or worker unions who want to see the company with minor or no change so that everyone can do his task without fear of losing job. As competition is not our prime task and we live with the funds provided by the GOB from its annual budget rather than our revenues solely, mimetic pressures are less apparent to influence our existing MAS.” (Interviewee No.20)*

The existence of conflicting agents is not very atypical in the government owned organizations. Specifically, the worker unions hold substantial (informal) power to influence change in the existing rules and structures in these organizations. Burns and Scapens (2000) recognized this confrontation as “resistance due to a lack of capability (knowledge and experience) to cope with such change”. However, this conflict has rarely been found in the extant MAS change literature.

Apart from the above mentioned pressure, regulators such as price monitoring agency may create barriers to the adoption and diffusion of SMA techniques. For example, the finance director of a pharmaceutical company stated how they faced problem during the implementation of activity-based costing (ABC). He commented that:

*“Few years back, we started implementing ABC. We formed a cross-functional team to facilitate the implementation. They gathered activity data from different divisions and established a framework for ABC. Surprisingly, while we decided to set prices for our products based on the cost figures generated by the ABC system, we discovered that the prices were substantially different from the prices generated based on traditional costing data. More importantly, these price figures were considerably different from the competitors’ prices. Consequently, we did not get the consent of price controlling authority to set prices based on ABC data. This forced us to stop implementing ABC across the divisions. Currently, we are using ABC for few products for cost control purpose.” (Interviewee No. 10)*

Accordingly, regulator’s sanctioning can be critical in the implementation of new and innovative cost management tools specifically to set up prices. This barrier creates further complications. For example, companies implementing ABC have to reconcile between the prices generated by ABC based data and actual prices sanctioned. Moreover, they have to

adjust or trade off the volume of several products manufactured within their portfolios based on such reconciliation to improve overall company profits.

To sum up the findings on coercive isomorphism, it is seen that Bangladeshi companies are facing pressures from several external stakeholders to adopt innovative and strategic oriented cost management tools like SMA. These agents include foreign shareholders, parent company, and international donors. While foreign shareholders and parent company exert pressures to adopt or imitate the best practices in the private sectors, international donors through government agencies exert pressures on the SOE to adopt innovative and best practices. These findings support the notion of NIS which contends that the enforcing and regulative facets of specific institutions (Hussain and Gunasekaran, 2002) exerted pressures on a particular organization by other organizations upon which they are dependent (DiMaggio and Powel, 1983). It also supports the belief that the depending organizations adopt rules and structures, accounting practices and performance evaluations that are compatible with the organizations controlling or influencing them (Sedlak, 1981; Coser et al., 1982; DiMaggio and Powel, 1983). Finally, the influence of rationalized states, other large rational organizations, and donor agencies such as WB, IMF in bringing about homogenization in organizational rules and structures (Meyer and Rowan, 1977) is also evident in the SOE.

#### **8.4.2 Mimetic isomorphism**

When organizations face substantial uncertainty in understanding technologies and/or goals, ambiguity of environments (DiMaggio and Powell, 1983), unable to link strategy to operational activities (Fligstein, 1985; O'Neill et al., 1998), they may model themselves on other organizations (DiMaggio and Powell, 1983). This modeling (imitating rules and structure of others) may be diffused among the borrowing organizations without the

knowledge of the modeled organization (this model organization is perceived as the successful organization in the field), sometimes by the employee transfer or turnover, or explicitly by organizations including the consulting firms and trade associations (DiMaggio and Powell, 1983). This imitation may take place to gain legitimacy for their operating environments (DiMaggio and Powell, 1983). Moreover, the borrowing organizations may be encouraged to mimetic isomorphism by either a skilled labor force or by a broad customer base (DiMaggio and Powell, 1983).

In Bangladeshi listed companies, the profound effect of mimetic pressures to adopt specific SMA techniques or to make particular changes in the existing MAS is evident. These companies are copying the best MA practices adopted by the best performers in the industry and abroad to attain legitimacy as well as efficiency. However, none of the companies reported the adoption of specific SMA techniques exported by new employees.

To illustrate how mimetic isomorphism takes place, the AVP of a listed Islamic bank noted that:

*“Definitely, the best practices in the banking sector at home and abroad induce us to upgrade our MAS. Cost oriented and customer-focused SMA techniques are basically important for us as depositors (customers) are the heart of our business. Cost oriented and customer-focused SMA techniques are basically important to serve customers best at reasonable costs. To illustrate how mimetic isomorphism takes place in the industry, I can cite an example. About a decade ago, the leading private banks started adopting core banking software having identical features of ERP to secure customers transaction related data from being theft by the hackers. This implementation eventually facilitates the introduction of several new MA techniques centered on customers and competitors’ data. To survive in the industry through achieving legitimacy of operations to the stakeholders, the follower banks (the borrowing organizations) felt tremendous pressures to sophisticate their system including MAS. Within two to three years, this organizational field almost reached maturity in relation to this operating system and MAS. However, the continuous improvement effort by the market leader in the maintenance of competitive advantage enjoyed keeps the race ongoing.” (Interviewee No.1)*

This is consistent with the arguments of (DiMaggio and Powell, 1983) who suggested an imitation of successful entity’s structures and rules by the borrowing organizations to serve a



broad customer base. Serving customers at reasonably low costs is recognized as the motivation for copying the best practices of successful organizations.

The SEVP of a multinational bank also commented on the presence of mimetic pressure that:

*“As an MNC, we persistently seek to adopt new management accounting tools adopted and practiced at home and abroad. Such adoption considerably affect both of our legitimacy and efficiency.” (Interviewee No.2)*

In this case, the imitation is motivated by the goal of attaining legitimacy and efficiency as argued by DiMaggio and Powell (1983). For the multinational companies, TMT members from abroad seem to motivate management to adopt MA techniques adopted and implemented at their home country's companies. This is also evidenced by Lasyoud et al. (2018) in Libyan public manufacturing companies where they documented that Libyan companies are adopting MAPs of their Italian joint venture companies.

The DMD of another leading bank noted on the existence of mimetic isomorphism that:

*“In our bank, the international banking practices are taken as the benchmark to copy the best practices in the banking industry. Accordingly, we seek for innovative and modern cost management tools with strategic focus to best serve our valued customers.” (Interviewee No.4)*

Meyer (1981) recognized this isomorphic fashion of emerging nations as ordinary practice. In practice, organizations may model themselves after certain kind of structural arrangements which they perceive as successful or legitimate even though such imitation may not improve efficiency (DiMaggio and Powell, 1983).

The existence of mimetic pressures is also recognized by the SAVP of another NBF. He noted that:

*“The best practices in the industry at home influence the adoption of innovative and new MAP to best serve our valued clients.” (Interviewee No.5)*

In the above case, the SAVP talked about only about the best practices seen in the industry at home. However, the MAS of multinational NBF may be shaped by the MAS of organizations they perceive successful both at home and abroad.

For example, the SEVP and Head of operations of another NBF recognized ‘efficiency’ as the core reason for adopting new SMA at home and abroad and noted that:

*“As an MNC, we constantly look for innovative and new management control tools adopted and practiced globally. In our case, we do so for enhancing efficiency of our operation rather than for achieving legitimacy to attract funds to survive.”*  
(Interviewee No.6)

Apart from the financial industry, the manufacturing companies are also facing mimetic pressure to copy the best practices in the industry at home and abroad. However, they do not receive considerable support from the top management, specifically additional resources required to implement such changes. Moreover, they are adopting innovative and modern MA tools to attain efficiency rather to attain legitimacy. For example, the deputy manager of Accounts and Finance of a leading cement company stated that:

*“We feel the necessity to adopt strategic oriented MA tools to meet the information needs of our TMT. However, at the same time they are not willing to incur additional costs required to accumulate detailed data needed for several SMA techniques such as ABC or BSC. These compel us to go within our existing resources and capabilities. To a greater extent, our MAS or SMA is influenced by the best practices in the cement industry at home and abroad. Our MD has recently completed his graduation from abroad. He always motivates us to adopt innovative and new cost management tools. We did it much to attain efficiency than to attain legitimacy.”*  
(Interviewee No.7)

In the above case, it is observed that despite the thirst for strategic cost management information by the TMT, they are not willing to incur additional cost required for the maintenance of a separate management accounting division. This contradictory position displayed by the TMT seems to act as an obstacle for the popularization of SMA techniques in the Bangladeshi listed companies. Surprisingly, these companies emphasize the attainment of efficiency over the accomplishment of legitimacy as the core basis of imitation.

Just opposite to this view, the CFO of another cement company recognized that they are copying the best practices in the industry to get the legitimacy. He commented that:

*“Copying best practices from the best performer in the industry and beyond industry motivate us to update the MAS. This change is essential to get the legitimacy from our*

*stakeholders that we are using sophisticated technology to supply them with concurrent and detailed data.” (Interviewee No.8)*

In this case, the CFO added that they seek for best practices merely not in the industry, but beyond the industry to ensure long-run sustainability. While these cement companies brought changes in the MAS either to attain efficiency or legitimacy, there are companies that search for both.

For instance, the deputy manager of A&F of a leading conglomerate noted that:

*“As a large conglomerate, we follow the global leader to copy best practices to ensure both of our efficiency and legitimacy. Moreover, we have foreign consultants who constantly suggest us to adopt new and innovative management control systems. More specifically, the state-of-the-art MAPs employed at the consulting firm’s home country has shaped our MAS several times in the past. Hence, the international consulting firm played leadership role in the implementation of new techniques. They planned required customization considering the contextual differences between their home country and ours in such customization. As we have a separate cell (Business Process Reengineering) under their supervision dedicated to search for continuous improvement, they assume the responsibility to implement new techniques and any modifications require within the existing one. This keeps us one of the market leaders in the sector.” (Interviewee No.9)*

In the above statement, an active and suggestive role of foreign consultant in addition to the influence of global best practices is evident in the country’s leading conglomerate to imitate acceptable rules and structures. This role of consulting firms in modeling (imitating rules and structure of others) the best practices by the borrowing organizations was recognized by DiMaggio and Powell (1983). They further noted that this modeling may take place even without the knowledge of the modeled organization (perceived as the successful organization in the field by the borrowing organizations).

Several other companies also faced institutional pressures from industry top performers to adopt particular SMA techniques. Furthermore, they brought such changes primarily to attain

legitimacy and secondarily to attain competitive advantage. For example, the finance director of a multinational Pharma company noted that:

*“We are listed in the London stock exchange in addition to DSE and CSE. As an MNC, we constantly look for innovative and sophisticated cost management techniques adopted and practiced by top performers in the global Pharma industry. We did so primarily to attain legitimacy to survive and secondarily to attain competitive advantage.” (Interviewee No.10)*

Despite considerable search for diversity there exists little variation in the organizational structures to be selected from (Kimberly, 1980; DiMaggio and Powell, 1983). Therefore, managers actively search for models upon which to build a legitimate structure (Kimberly, 1980; DiMaggio and Powell, 1983). The above statement added the achievement of competitive advantage as the motive for copying the global best practices. Additionally, the finance director noticed the fact of their presence in the international capital market which further induced them to imitate global structures to achieve legitimacy required to attract funds for sustainability. In fact, these attitudes make them one of the market leaders in the Pharma industry in Bangladesh.

The CFO of another local Pharma company stated the existence of a separate cell which is dedicated to look for researching and adopting the best practices adopted by the market leader. He commented that:

*“We have a planning cell that continuously seeks for the best practices in the industry at home. For cost management techniques, we have a cost and budget division that is entrusted with the task to adopt innovative techniques to best provide detailed data on our operation, customers, competitors and strategy.” (Interviewee No.11)*

Dedicating a separate cell to search for new and innovative structures and rules is not very common in the corporate culture in Bangladesh as it is rarely noticed by other respondents. Such an initiative implied a combating approach to sustain in the market in the long term period.

Apart from the Pharma industry, the CFO of a textile company also recognized the presence of mimetic imitation of MAS in his organization. He commented that:

*“We search for innovative cost management tools adopted and implemented in world leading organization. Definitely, the use of innovative tools in the neighbor company affects our mindset to practice the same to keep pace in the race.” (Interviewee No.13)*

Accordingly, it can be held that the modeling of industry best practices including the state of the art MAPs by the borrowing organizations in the endeavor to attain legitimacy, efficiency and competitive advantage is profoundly evident in the Bangladeshi listed companies. The findings presented above support the notion of NIS in many respects. For example, the borrowing organization may imitate successful entity’s structures and rules to serve a broad-based customer (DiMaggio and Powell, 1983). Moreover, the MA practices of overseas partner organizations can also shape and reshape the local company’s MAS (Lasyoud et al., 2018) to attain legitimacy and efficiency (DiMaggio and Powell, 1983). Even though efficiency is not improved, borrowing organizations may model themselves after certain kind of structural arrangements of successful or legitimate organization (DiMaggio and Powell, 1983) as isomorphic fashion specifically by the emerging nations (Meyer, 1981). Finally, an active and suggestive role of foreign consultant is evident in the country’s leading conglomerate to imitate acceptable rules and structures of successful organizations (DiMaggio and Powell, 1983). More importantly, these findings support the results presented in chapter seven which reported a positive and significant influence of mimetic pressures on the adoption of SMA practices.

### **8.4.3 Normative isomorphism**

Normative isomorphism stems primarily from professionalization (DiMaggio and Powell, 1983) which refers to a collective struggle of members of an occupation to recognize the conditions and methods of their work (Larson 1977; Collins, 1979; DiMaggio and Powell,

1983). These collective struggle aims to control the output (Larson 1977) and to set up a cognitive base and legitimation to ensure occupational autonomy (DiMaggio and Powell, 1983). Institutional isomorphism can stem from two aspects of professionalization: (1) formal education and (2) professional networks (DiMaggio and Powell, 1983). In addition to the effect of profession, media also plays important role in diffusing a particular form of structure across organizations (DiMaggio and Powell, 1983).

In practice, the impact of normative isomorphism rarely takes place in the Bangladeshi listed companies. Very few respondents recognized that they feel pressures from professional networks to adopt a particular SMA technique or to bring a particular change in the existing MAS. To the same extent, the media (specifically professional journals) spread the adoption of particular SMA techniques in the sample companies. The effect of national and corporate culture is also negligible in this respect.

For example, the CFO of an old chemical company recognized the presence of normative pressures exerted by the professional network (ICMAB) and media. He noted that:

*“Being the national councilor of ICMAB, sometime I feel pressure from my professional network to adopt innovative SMA techniques. Our professional journal induced me to adopt such techniques. At present, this pressure is specifically critical as the ICMAB is developing its own set of cost accounting standards (known as Bangladesh Cost Accounting Standard-BCAS) which includes several standards on SMA techniques including ABC, BSC, target costing, life-cycle costing, quality costing and strategic costing. Our members are interested to know how many of these standards are being currently used by companies. As a matter of influence and symbol of representation, we feel proud to announce that our companies are implementing or using such techniques. Their adoption also assists the Institute to look at the gap between theory and practice which further create the avenues to bring necessary modifications in the concerned standards. Consequently, this adoption can be, at least, partially attributed to the professional network where I am assuming a leadership role.” (Interviewee No.12)*

The fact of professional network and journal is also recognized by the CFO of a textile companies. He states:

*“Being a national councilor and assuming a key top management team role at ICMAB, I am familiar with a number of SMA techniques. It is a matter of honor (dishonor) to express that we are (not) playing the pioneer role in the implementation*

*of state-of-the-art SMA techniques in our organizations. So, as a member of standard setting board, I feel motivated to adopt strategic oriented MAPs. However, it takes a lot of pressures to customize such techniques to our settings. Also sanctioning resources required to implement those techniques is another critical barrier to their adoption. In a nutshell, Professional network and media (specifically print media like journals) influence our mindset to adopt innovative and strategic oriented SMA techniques.” (Interviewee No.13)*

Professionals of a particular institution usually share identical definition and promulgation of normative rules on organizational and professional behavior which create a pool of interchangeable individuals occupying similar position (Perrow, 1974; DiMaggio and Powell, 1983). The filtering of these professional in a particular industry around similar layer of management encourages normative isomorphism (Kanter, 1977; DiMaggio and Powell, 1983) which is clearly evident in the comments presented above. Being the members of similar professional institute (ICMAB), they have been influenced by their professional networks and media (journals) to adopt and implement the best MAPs of successful organization.

Accordingly, it can be held that the nature of institutional pressures to adopt particular SMA techniques are fundamentally coming from the controlling and fund providers organizations (coercive pressures), and industry best practices in the private sectors companies (mimetic pressures). Normative pressures emerged from professional networks and media like professional journals are also evident to a little extent in some companies. In contrast, the SOEs are not facing mimetic pressures; rather the respective governmental agencies (pressurized by the international donor agencies) set the tone of their MCS. However, in a nutshell, the nature of such institutional pressures varies from industry to industry, and even across companies in a particular industry.

#### **8.4.4 Economic pressures**

Granlund and Lukka (1998) included economic pressures as the drivers of convergence of MAPs in addition to the three core institutional pressures (i.e., coercive, mimetic and normative) suggested by DiMaggio and Powell (1983). Following their footsteps, Hussain and Gunasekaran (2002) also studied the impact of economic factors, coercive pressures, mimetic pressures and normative pressures on the non-financial management accounting measures under the umbrella of NIS. While Granlund and Lukka (1998) included global economic fluctuations, increased competition, advanced production technology, and advanced information technology under the umbrella of economic pressures, Hussain and Gunasekaran (2002) considered competition, economic conditions, organizational characteristics, and technological advancement. Moreover, these economic pressures are considered as technical and functional in the NIS theory literature (Hussain and Gunasekaran, 2002). MAPs become adaptive in their environments at varying degrees of responsiveness in response to such economic pressures (Hussain and Gunasekaran, 2002).

In fact, following Meyer (1979) and Fennell (1980), DiMaggio and Powell (1983) suggested two types of isomorphism: (1) competitive and (2) institutional. Hannan and Freeman (1977) emphasizes on market competition as the driver of organizational isomorphism. Among others Johnson and Kaplan (1987) and Shank and Govindarajan (1993) documented the need for sophistication of MAS to meet increased competition. Moreover, Fisher (1995) and Brancato (1995) recognized competitive pressure as one of the three core reasons why firms adopt/imitate MAPs implemented by others.

The impact of technology on the imitation and adoption of MAPs is also well evidenced in the extant MA (Johnson and Kaplan, 1987; Otley, 1994) and institutional theory literature (Granlund and Lukka, 1998; Hussain and Gunasekaran, 2002). The impact of economic conditions specifically uncertain economic conditions on the adoption of MAPs is also well



documented in MA literature (Chenhall and Morris, 1986; Mia and Chenhall, 1994; Modell, 1996; Chenhall, 2003). In an endeavor to trim down such uncertainty, organizations tend to copy structures and rules of successful organizations in the similar organizational fields (DiMaggio and Powell, 1983). Finally, organizational characteristics such as structures, size and nature of activities also shape MAPs (Scott, 1987; Hoque and James, 1998; Hussain and Gunasekaran, 2002).

The effect of economic pressures on the isomorphism process appears to be more frequent in the Bangladeshi listed companies. Among the four facets of economic pressures, technological advancement seems to drive imitation of rules and structure at a faster rate in majority of the companies. For example, the deputy manager of Accounts and Finance of a leading cement company stated that:

*“In the past, technological advancement brought radical changes in many aspects of our operations. We were using separate software for accounts and finance function. Our software vendor offered us to implement ERP (ORACLE) to keep up with the pace of change in IT in the industry. While evaluating their proposal, we discovered that we do not have skilled people to manage the ERP. Our TMT wanted to control the system from within the organization rather than outsourcing to third party such as the software vendor or independent IT firm. I offered one of the employees of Software Vendor Company to join our company as a full-time employee. Surprisingly, he accepted my offer and we implemented the ERP under his leadership. These changes in turn reshaped the MAS to generate new types of information demanded by TMT. Due to the insufficiency of time and funds for research, we had to search for compatible MA techniques adopted and implemented in the successful organizations in the industry. Accordingly, we included them with required modification compatible to our business.” (Interviewee No.7)*

Collaboration between researchers and practitioners is rarely found in the corporate culture in Bangladesh, specifically for the development new cost management techniques compatible to the changed environment. Accordingly, to address technological advancement companies have to rely on the best practices in the industry at home or abroad. Hussain and Gunasekaran (2002) documented a profound effect of technological advancement on the improvement of

performance measurement system. Granlund and Lukka (1998) also recognized technological advancement as a driver of convergence of MAPs in the organizational fields.

The deputy manager of A&F of a leading conglomerate also recognized the effect of technological change on the structures. She commented that:

*“We faced considerable trouble in the past while a radical change in technology took place. Majority of those changes led to a shift in the MAS. Our international consultant and business process reengineering team worked together to develop and in particular cases imitate or adopt the best practices of successful organizations.” (Interviewee No.9)*

Surprisingly, while technological change shape and reshape the MAS in the manufacturing organizations, service organizations including financial institutions recognized comparatively immaterial changes in the MAS. For example, the DMD of a leading bank noted that:

*“Technological advancement brings a lot of change in the core banking software which involves substantial cash outlay. The MAS is not much affected by such changes. Nevertheless, with the improved information system, MAS experiences improvement gradually.” (Interviewee No.4)*

Therefore, despite the immaterial impact of technological advancement on MAS immediately, the nature and structure of MAS shift to an upper level with innovative and strategic focus over time.

Identical to the effect of technological advancement, Bangladeshi listed companies recognized a profound effect of competition and organizational characteristics on the development of MAS. In essence, the intensity of competition encourages firms to improve their MCS (specifically customer and quality related SMA) to make them compatible to provide additional market and other environmental information to survive (Kaplan, 1984; Hiromoto, 1988). Granlund and Lukka (1998) and Hussain and Gunasekaran (2002) also documented considerable effect of competition on the restructuring of MAPs.

To illustrate how competition reshapes MAS, the AVP of a listed Islamic bank noted that:

*“Banking sector in Bangladesh is highly competitive. To survive in the long run, serving customers better at reasonable cost is a must in this highly regulated sector.”*

*This forces us to adopt innovative and external oriented SMA techniques that will facilitate the use of competitor, customer and other market data.” (Interviewee No.1)*

The use of external data specifically competitor data is the core feature of SMA techniques since its inception by Simmonds (1981). Highly regulated sectors such as bank and NBFIs have less discretion to diversify their information system as they have to strictly comply with the regulations of Bangladesh Bank. Accordingly, they are to use customized MAS to accumulate and analyze external environmental data in formulating competitive strategies. Their majority of the MAPs are adopted from the best performers in the industry at home and abroad, and are not very much formalized as it is in the case of core IS.

Apart from the financial industry, the manufacturing companies are also facing competitive pressures owing to the presence of a large number of manufacturers. For example, the deputy manager of Accounts and Finance of a leading cement company commented that:

*“There exist a huge number of cement manufacturers in Bangladesh who are producing high quality cement. Keeping costs within a predetermined level without sacrificing the quality is vital to compete in this industry in the long-run. The nature of highly competitive market compelled us to adopt MA tools with strategic and external focus.” (Interviewee No.7)*

Unfortunately, while recognizing the urgency of strategic oriented MA tools in combating competitions, the lack of awareness of TMT members and shareholders are identified as the hurdles of introducing such tools in the organizations. However, the scenario of large conglomerate is comparatively better in this respect. They have different cell for the development and adoption of MCS tools. For instance, the deputy manager of A&F of a leading conglomerate noted that:

*“As a large conglomerate, we are constantly competing on a number of diversified products. To analyze and interpret data about competitors and corporate customers, we had improved our MAS several times in the past and expect to continue in the foreseeable future. We have a separate cell to do this task in addition to a number of foreign consultants. Without these data, it is hardly possible to compete in the market.” (Interviewee No.9)*

Apart from this, the finance director of a multinational Pharma company explained why the use of SMA tools imperative to facilitate formulation of competitive strategy to survive in the market. The finance director noted that:

*“Despite the fact that we are leading the Pharma market, there exists considerable competition as the number of competitors is not very few. We need competitors’ data to formulate appropriate competitive strategy to maintain the market share. These induce us to adopt and in certain case develop competitor-oriented SMA techniques.”*  
(Interviewee No.10)

Organizational characteristics have comparatively infrequent and immaterial effect on the imitation of MAPs in the Bangladeshi listed companies. This finding goes against the result reported by Hussain and Gunasekaran (2002) which documented a profound effect of a number of organizational characteristics on the usage of non-financial performance measures.

For example, the CFO of a local Pharma company commented that:

*“Organizational characteristics such as size, structure have trivial effect on the imitation of MAPs. However, when we experience a material change in the policy, size, and structure, our MAS also experience a material change. Specifically, changes in the level of decentralization reshape the MAS. To explain how restructuring affect MAS, I can cite an example. Few years ago we launched a separate medicine division ‘Unani’. This creates several problems in cost allocation and other decisions making process. Consequently, TMT decided to isolate it from the mainstream product line. In the meantime, some other competitors also launched ‘Unani’ division. This stimulates us to maintain separate competitor accounting for core product and Unani product.”*  
(Interviewee No.11)

While changes in the organizational characteristics are recognized as the forces deriving a shift or improvement in the MAS, decentralization seems to have the biggest effect on the improvement of this system. This theme is also consistent with the result presented in chapter seven which reported a significant positive impact of the degree of decentralization on the adoption of SMA practices. This is also supported by the extant literature of MA which documented sophistication of MAS in the highly decentralized organizations ((Bruns and Waterhouse, 1975; Merchant, 1981; Chenhall and Morris, 1986; Abdel-Kader and Luther, 2008).

The CFO of a textile company also recognized the insignificant effect of organizational characteristics on the imitation of MAS of other organization perceived performing better in the industry. He commented that:

*“In our routine operation, we feel the need to change MAS rarely unless and until there is a radical change in our size, operation or structure. When the operation or size or structure is materially changed, the MAS are also restructured radically. In that case, if time permits, we develop new MAS compatible to the changed structural arrangement; otherwise modify the adopted MAS implemented by others in the industry at home.” (Interviewee No.13)*

While economic conditions are found to have considerable effect on the improvement of MAS in the developed countries (Chenhall and Morris, 1986; Mia and Chenhall, 1994; Modell, 1996; Chenhall, 2003), Bangladeshi listed companies showed less concern with respect to the effect of economic conditions on the imitation/improvement of MAS except for uncertainty. When companies presume uncertainty in the external environment caused by the national or international political violation or natural catastrophe, they introduce innovative cost management models either by copying from others or developing them to deal with such uncertainty.

For instance, the SEVP of a multinational bank commented that:

*“Environmental uncertainty forced us to accumulate and analyze additional data concerning the facets of environment that are going to be affected most. Traditional and internally focused MAC tools are less effective in dealing with such situations. Innovative MCS tools characterized by external and long-term orientation seem to be more appropriate in formulating suitable strategies to deal with such uncertainty. MCS tools used by successful organizations globally are taken as the model to customize appropriate MCS tools.” (Interviewee No.2)*

The effect of uncertain economic condition seems to be more vigilant in the manufacturing companies. For example, the deputy manager of Accounts and Finance of a leading cement company stated that:

*“We feel huge pressure while the economy is confronted with substantial uncertainty. We are to reschedule production activities, reset production volume, adjust the usage of labor forces, materials, and so on. MA tools containing the features of using*

*external environmental information are usually imitated from the successful organization with minor modification.” (Interviewee No.7)*

Rescheduling the level of production appears to be the most challenging task for manufacturing companies in the event of economic uncertainty. Formulating an appropriate strategy demands the use of both internal and external information affecting the factors of production. As there is limited scope for developing compatible MCS tools using the internal resources due to the unawareness of owners and TMT members, they are bound to imitate or adopt the best practices available in the industry at home or overseas to trim down the adverse effect of such uncertainty.

The deputy manager of A&F of a leading conglomerate also recognized the effect of uncertainty in economic conditions. She commented that:

*“Dealing with uncertainty in economic conditions is more complicated for a conglomerate like us. Our foreign consultants and business process reengineering team adopted the best available MAPs across the globe to deal with such uncertainty. In most cases, we are to modify the adopted practices to make it more compatible to our unique operating and processing characteristics.” (Interviewee No.9)*

The effect of uncertainty in the national and international economy has more profound effect in the textile sectors as they rely on the export income for their survival. Accordingly, they need more strategic and innovative MCS tools to deal with the resulting uncertainty. Unfortunately, the TMT of majority of these companies are reluctant to maintain a separate management accounting division as reported in the earlier part of this section (mimetic pressure). Consequently, the finance and accounts division, which remain busy with traditional task of reporting and compliance, has very little opportunity to develop a customized set of MCS tools compatible to their operating environment. This fostered them to imitate the MAPs of the best performers in the industry at home and abroad. For instance, the CFO of a textile company commented that:

*“The importance of maintaining a separate management accounting division to deal with uncertainty is less comprehensible to the sponsors and directors as they are not*

*familiar with MCS tools. Sanctioning their consent to instigate a new SMA tool is hardly possible specifically if it requires investment in IT and other resources including management accountant. Accordingly, we are to rely on the MAPs of other specifically which one we perceive successful in our field.” (Interviewee No.13)*

These findings also support the result presented in the earlier chapter (7) which documented a significant and positive impact of environmental uncertainty on SMA usage. To sum up the impact of the nature of economic pressures, it is observed that technological advancement, competition intensity, and economic uncertainty have much bearing on the usage of sophisticated SMA practices. However, the impact of organizational characteristics is considerable only when there is a radical change in the structure or level of decentralization. These findings seem to be consistent with the notion of NIS in several respects and also with the findings of several prior studies employing NIS theory.

## **8.5 Discussion**

Change has become a prominent feature of contemporary management accounting practice (MAP) (Quattrone and Hopper, 2001; Sulaiman and Mitchell, 2005), and a topic of much debate in management accounting (MA) in recent years (Burns and Scapens, 2000; Lasyoud et al., 2018). This popularity of MAC change literature can be attributed to the quest for understanding real world MAP (Sulaiman and Mitchell, 2005). Despite this enhanced popularity, there is no consensus yet as to what does MA change mean (Sulaiman and Mitchell, 2005; Lasyoud et al., 2018). While a considerable portion of MA change literature did not define what do they mean by the term ‘change’, and what sort of MA change they are addressing in their studies (Quattrone and Hopper, 2001), others follow a variety of definition of change. This includes technical change ranging from the replacement of MA techniques to their modification and extension (Innes and Mitchell, 1990), supplementation of information in the existing techniques (Vaivio, 1999), operational modification of ongoing technique

(Granlund, 2001) and abandonment of existing MA technique (Wallander, 1999). Most probably, the more acceptable typologies of MAC change have been proposed by Sulaiman and Mitchell (2005) which categorized the technical change in MAC into five segments: adoption, replacement, output modification, operational modification, and reduction. The justification of this categorization, as claimed by Sulaiman and Mitchell (2005), is that they are based on the observations of researchers and therefore consistent with the different types of MA change addressed in the existing literature (Sulaiman and Mitchell, 2005). As this study focused on the usage of SMA techniques in Bangladeshi listed companies, management accounting change is therefore represented by the introduction of a new SMA technique (i.e., addition) with no replacement, and the replacement of an old/conventional MAP by a new SMA technique.

The foregoing sections demonstrate the domination of 'addition' type of change over the 'replacement' type of MA change in the sample companies. However, the extent of both the categories of change appears to be considerably lower than that reported by Sulaiman and Mitchell (2005) in the context of Malaysian manufacturing companies. Several causes of non-adoption or low adoption of SMA practices have been recognized by the respondents including lack of TMT awareness about the benefits of SMA usage, unwillingness to release/sanction resources required in the maintenance of a separate management accounting division, non-existence of sophisticated SMA usage in several industries, and the non-availability of professional cost and management accountants.

With respect to the impact of institutional forces on the adoption of SMA practices, a profound role of coercive and mimetic isomorphism is well evident. In the case of coercive isomorphism, the role of foreign shareholders and parent company is found critical in the private sector companies, while the influence of international donors through government agencies is noticeable in the SOE. The underlying reasons for the imitation/adoption of the



best practices (hereby MAPs) in the private sectors are, inter alia, the attainment of legitimacy, efficiency and competitive advantage. However, in the public sector enterprise, the ultimate goal of imitation is the attainment of legitimacy. These findings support the notion of NIS which contends that the enforcing and regulative facets of specific institutions (Hussain and Gunasekaran, 2002) exerted pressures on a particular organization by the controlling organizations upon which they are dependent (DiMaggio and Powell, 1983). It also supports the belief that the depending organizations adopt rules and structures, and accounting practices compatible with the organizations controlling or influencing them (Sedlak, 1981; Coser et al., 1982; DiMaggio and Powel, 1983). Moreover, the influence of rationalized states, other large rational organizations, and donor agencies such as WB, IMF is also evident in the SOE in bringing about homogenization in organizational rules and structures (Meyer and Rowan, 1977).

In case of mimetic isomorphism, the modeling of industry best practices by the borrowing organizations arises from benchmarking in an attempt to attain legitimacy, efficiency and competitive advantage is apparent in the Bangladeshi listed companies. These findings are also supported by the notion of NIS in many respects. For example, the borrowing organization may imitate successful entity's structures and rules to serve a broad-based customer (DiMaggio and Powell, 1983). Additionally, the impact of MAPs of overseas partner organizations on the MAPs of local company is exhibited (Lasyoud et al., 2018) in the attainment of legitimacy and thereby to secure the flow of resources (DiMaggio and Powell, 1983). Even though efficiency is not improved, several companies model themselves after certain kind of structural arrangements of successful or legitimate organization (DiMaggio and Powell, 1983) to ensure legitimacy which appears to be a isomorphic fashion in the emerging nation companies (Meyer, 1981). Moreover, the influence of foreign consultant to imitate acceptable rules and structures of successful organizations at home and

abroad is vigilant in the Bangladeshi companies, and this is consistent with the notion of NIS theory (DiMaggio and Powell, 1983). Apart from this theoretical agreement, these findings support the results presented in chapter seven which reported a significant positive influence of mimetic pressures on the adoption of SMA practices.

Normative pressures seem to have trivial impact on the adoption of SMA practices in the sample companies with few exceptions. The impact of professional network and media is evident in only those companies where TMT members hold influential position in the corresponding professional body. Professionals of a particular institution usually share identical definition and promulgation of normative rules on organizational and professional behavior which create a pool of interchangeable individuals occupying similar position (Perrow, 1974; DiMaggio and Powell, 1983). The filtering of these professional in a particular industry around similar layer of management may encourage normative isomorphism (Kanter, 1977; DiMaggio and Powell, 1983). Being the members of similar professional institute (ICMAB), they have been influenced by their professional networks and media (journals) to adopt and implement the best MAPs of successful organization.

In the economic pressure category, the impact of technological advancement, competition intensity, and economic uncertainty appears to have much bearing on the usage of SMA techniques. In contrast, the impact of organizational characteristics is considerable only when there is a radical change in the structure specifically the level of decentralization. These findings seem to be consistent with the notion of NIS in several respects and also with the findings of several prior studies employing NIS theory. For example, the impact of advancement in technology on the imitation and adoption of the best MAPs is well evident in the institutional theory literature (Granlund and Lukka, 1998; Hussain and Gunasekaran, 2002). The impact of economic conditions specifically uncertain economic conditions on the adoption of MAPs is also well documented in MA literature (Chenhall and Morris, 1986; Mia

and Chenhall, 1994; Modell, 1996; Chenhall, 2003). In an endeavor to trim down such uncertainty, organizations tend to copy structures and rules of successful organizations in the comparable organizational fields (DiMaggio and Powell, 1983). Finally, organizational characteristics such as structures, size and nature of activities also shape MAPs (Scott, 1987; Hoque and James, 1998; Hussain and Gunasekaran, 2002). Apart from this agreement with prior literature and theoretical premise, these findings also support the result presented in chapter seven which documented a significant positive impact of environmental uncertainty, competition intensity, advancement of technology, and the degree of decentralization on the adoption of SMA practices.

## **8.6 Chapter summary**

This chapter focused on the interview findings of why and how management accounting changes using the ground of NIS theory. The findings suggested that Bangladeshi companies have experienced management accounting changes during the past 3 years. This change is dominated by the 'addition' of new SMA practices in the existing MAS with no replacement. With respect to the impact of institutional pressures, coercive and mimetic pressures appear to have considerable influence on the imitation/adoption of new SMA. Parent companies and controlling shareholders (coercive isomorphism) seem to have considerable influence on the imitation of the best MAPs available in the subsidiaries in the private sectors; while the influence of international donors via the governmental agencies (coercive isomorphism) is apparent in the government-owned companies to attain legitimacy. In the mimetic isomorphism category, the use of sophisticated and innovative MAPs in the neighbor (model organization which is perceived as performing best) company in industry encourage (borrowing) organizations to imitate the best practices to attain legitimacy, efficiency and competitive advantage. The effect of normative pressures specifically professional network

and professional media is also vigilant in few organizations where the TMT members hold influential position in the professional body. In the economic pressure category, degree of decentralization, advancement in technology, economic uncertainty, and competition intensity appears to have substantial impact on the imitation/adoption of SMA practices.

## **CHAPTER NINE**

### **DISCUSSION AND CONCLUSION**

#### **9.1 Introduction**

The main aim of this study was to provide a better understanding of the strategic management accounting (SMA) practices in the listed public limited companies in Bangladesh. Accordingly, this study formulates the following five specific objectives:

1. To explore the current state of adoption of SMA techniques in the listed public limited companies in Bangladesh and the extent of benefits derived from their use.
2. To identify the contingent factors influencing the adoption decision of SMA techniques in the Bangladeshi listed companies.
3. To examine the effect of the use of SMA techniques on several aspects of firm performance (both perceived and observed performance);
4. To provide an explanation of changes in Management Accounting System (MAS) over time.

To meet the above objectives, a comprehensive review of the extant literature was presented in Chapter Two and Three. To contribute to the debate what really constitute strategic management accounting techniques (Objective-5), Chapter Two presents an extensive discussion on the core features of SMA techniques that isolated them from traditional Management Accounting (MA) techniques. Additionally, this chapter also presents an overview on each of 17 SMA techniques studied. To provide a better understanding of the state of SMA practices across the Globe, Chapter Three presents a compressive review of the extant literature focusing on the extent of adoption, benefits derived from usage, factors

influencing the decision to adopt, and effect of usage on performance separately for the context of both developing and developed economies. Using the grounds of contingency theory (Chapter Four), this study also presents a theoretical framework to identify factors that can have an effect on the adoption of SMA techniques. In addition to this, the ground of institutional theory is used to explain changes in the MAS over time. A face-to-face questionnaire survey was conducted to gather data on the SMA usage status in the sample companies. Descriptive statistics on the current state of the use of selected SMA techniques and perceived benefits derived from their use (Objective 1) are presented in Chapter Six. The effects of internal and external contingent factors on the adoption of SMA techniques (Objective-2) and the effects of adoption on firm performance (Objective-3) are presented in Chapter Seven. The institutional explanation of changes in MAS over time (Objective-4) is presented in Chapter Eight using the data gathered through interview survey.

A summary of findings on descriptive statistics, factors affecting the adoption decision, and changes in the MAS over time is presented in the next section. This is followed by the major contributions (empirical, theoretical, and methodological) of this research in the field of SMA. Major limitations, areas of future research opportunities in the field of SMA and concluding remarks are also presented at the end of this chapter.

## **9.2 Discussion**

This section presents the summary of findings on descriptive statistics, factors influencing the adoption decisions and institutional explanation of why and how changes take place in the MAS which are discussed in detailed in Chapter Six, Seven and Eight respectively.

### **9.2.1 Findings on the current status of adoption of SMA practices in Bangladesh**

The first objective of this research was to explore the current state of adoption of SMA techniques in the listed public limited companies in Bangladesh and the extent of benefits derived from their use. With respect to this research objective, the study has yielded the following results:

- The overall SMA usage rate in Bangladeshi listed companies shows a slightly below average score (3.0403) indicating the awareness of the sample companies with respect to the innovation in the field of management accounting (Table 6.4).
- Regarding the relative emphasis on particular group of SMA techniques, the results showed the superiority of competitor-focused techniques (4.1847) over other group of techniques namely planning and other techniques (3.6445), costing-based techniques (2.6454), and customer-oriented techniques (2.0120).
- With respect to the usage of specific SMA techniques, strategic costing appears to be the most popular (mean value 4.5301 in the scale 1-5) technique in the Bangladeshi listed companies followed by competitive position monitoring (mean 4.4819) and strategic pricing (4.4698). On the contrary, attribute costing (1.5542), life-time customer profitability analysis (1.0602) and life-cycle costing (1.8313) seem to be the least used SMA techniques.
- The SMA usage rate of Bangladeshi listed companies is identical to the usage rate revealed in many countries of the Globe, while differ substantially for several specific techniques. For example, Guilding et al. (2000) reported the popularity of competitive position monitoring (CPM), competitor performance appraisal based on published financial statements (CPAFS) and strategic pricing in the US, UK, and New Zealand which is identical to the scenario of the findings of the present study. Moreover, Cravens and Guilding (2001) also documented higher usage of CPM and strategic

pricing in the US, while Cadez and Guilding (2007) documented higher usage of CPM, CPAFS and benchmarking in the Australian and Slovenian firms. In contrast, Cinquini and Tenucci (2007) documented attribute costing and customer profitability analysis (CPA) as the highly used SMA techniques in the Italian manufacturing firms. Surprisingly, more recently Cescon et al. (2019) demonstrated lower usage of attribute costing in the Italian firms (Table 6.5). more recently, Hadid and Al-Sayed (2021) also documented higher usage of CPA, BSC, CPM, target costing and strategic pricing which appears to be supportive to the findings of the present study.

- In terms of the industry difference, the average score exhibits a little bit higher score of SMA usage in the service organizations (3.0808) as compared the manufacturing organization (3.0149). This result is supportive to the arguments presented by many scholars (e.g., Bromwich and Bhimani, 1994; Hussain and Gunasekaran, 2002) who suggest an equivalent importance of SMA practices in the service organizations. However, the average score for costing-based SMA techniques is higher in the manufacturing companies (2.8515) as compared to the service organizations (2.3169). For competitor, customer, performance measurement and planning oriented SMA techniques, the average SMA usage rates are higher in the service organizations than in the manufacturing organizations (Table 6.6).
- Despite the similarities between the usage scores and perceived benefits scores for most of the techniques, there exist considerable shift in the ranking of top beneficial SMA techniques. In terms of ranking shift, strategic pricing (6.0361 in the scale 1-7) appears to take the first position which was held by the strategic costing (5.9759) in the usage scores. This is followed by competitive position monitoring (5.8674), BSC (5.6506), and benchmarking (5.3012). In contrast, the least used techniques (e.g., attribute costing, lifetime customer profitability analysis, valuation of customer as



assets, brand valuation and life-cycle costing) are ranked at the bottom line of the highly beneficial techniques by the Bangladeshi listed companies with few exceptions (e.g., quality costing). In a nutshell, it appears that the highly used techniques are also perceived highly beneficial by the respondents' companies and vice versa.

- The findings on 'which SMA techniques will be emphasized in the upcoming three years displayed the preeminence of strategic costing followed by strategic pricing, BSC and competitive position monitoring. This result suggests the continuous use of these SMA techniques in the upcoming years in the sample companies. This result is also identical to the usage and benefits scores except for the BSC. Despite the fact that BSC could not find a place in the top three usage and highly beneficial SMA techniques, the responding companies seem to allow BSC a place in the 'top three' SMA techniques group in the upcoming three years. More importantly, despite the lower usage scores secured by a number of techniques, the sample companies are contemplating their usage (e.g., ABC, value chain costing, and quality costing) in the upcoming years as displayed by their comparatively higher 'future emphasis scores' (Figure 6.5).

From the above discussion on the findings of descriptive statistics, it can be held that SMA usage rates in the Bangladeshi listed companies are at above average which implies the responsiveness of these companies to the international practices in the cost management arena. Moreover, strategic costing, strategic pricing, BSC, benchmarking, and several competitor-focused techniques are highly adopted by the sample companies. Nevertheless, some other techniques such as attribute costing, lifetime customer profitability analysis, brand valuation which are not much familiar to the respondent companies have received less attention. The apparent benefits enjoyed from the usage of highly used techniques are also higher and vice versa. More importantly, in addition to the continuance of the highly

beneficial SMA techniques, the respondent companies plan to adopt several other techniques specifically costing oriented techniques including ABC, value chain costing and quality costing.

### **9.2.2 Findings on the factors influencing the adoption of SMA techniques**

Using the grounds of contingency theory and based on the extant literature, this study has attempted to identify factors within the organization and outside the organizations that can have an influence on the usage of SMA techniques. Regarding the firm-specific factors, this study considers the effects of several dimensions of business strategies, organizational structure, culture, process characteristics, use of advanced technology in operation and market orientation on the decision to adopt SMA techniques. To address the effects of external or environmental factors, this study focuses on several aspects of environmental uncertainty, hostility (intensity of competition), complexity, diversity, ecology, and institutional pressures. Table 9.1 displays the summary of hypotheses accept/reject status. A summary of the results is presented below:

- Among the three different strategy typologies studied, only strategic pattern has a significant positive influence on the adoption of SMA techniques in the Bangladeshi listed companies. This result signifies a greater usage of innovative and sophisticated cost management tools in companies pursuing prospector type strategy than companies pursuing defender strategy. This result also supports the notion that companies which emphasize on product innovation, quick response to opportunities, aggressive market share acquisition, and sophistication of operation seek to make greater usage of innovative and modern cost management tools like SMA techniques to permit organizational flexibility and creativity. This result is also consistent with the findings of Cadez and Guilding (2008) study, which documented a greater SMA

usage in prospectors companies in the Slovenian context. In contrast, it goes against the findings of Cinquini and Tenucci (2010) which reported an insignificant association between SMA usage and prospector strategy. Unfortunately, the association between strategic mission, positioning and SMA usage are insignificant statistically, implying a weak role of these variables on the adoption decisions in the Bangladeshi listed companies.

- In regard to the effect of organizational structure, this study finds a significant and positive association between the degree of decentralization and SMA usage. Accordingly, this result supports the proposition that management accounting techniques are best suited to decentralized organizations. Put differently, decentralized organizations need more detailed information and this stimulate them to make greater usage of innovative and strategic oriented cost management techniques. This result is consistent with the findings of Chia (1995) and Abdel-Kader and Luther (2008) who reported a higher sophisticated MA usage in decentralized organizations as compared to their counterparts. Moreover, this finding is consistent with the arguments of majority of the MA scholars who argued that decentralized organization tends to make greater sophistication of MCS (Bruns and Waterhouse, 1975; Merchant, 1981; Chenhall and Morris, 1986; Abdel-Kader and Luther, 2008) which foster the use of innovative cost management tools such as ABC and BSC (Abdel-Kader and Luther, 2008). However, this study did not find any significant association between the extent of structuring of activities and SMA usage. Accordingly, the proposition that companies with organic structure make greater usage of innovative and modern cost management tools does not hold true in the Bangladeshi listed companies.

- Among the four aspects of organizational cultures, the results reported a significant negative relationship between power distance and SMA usage, signifying that companies characterized by low power distance between different layers of management or executive positions make greater usage of innovative cost management tools. Accordingly, the difference in the echelon of authority attached between two executive positions is critical in the sophistication of MCS. This result is consistent with the finding of O’Conner (1995) who suggested a positive influence of low power distance on MCS effectiveness. As expected, the results demonstrated that companies emphasizing collectivism over individualism makes greater SMA usage. Consequently, it can be held that the policies of emphasizing organizational interests by its member have considerable influence on the sophistication of MCS. This finding seems to be consistent with the findings Ueno and Wu (1993) who reported that managers focusing on individualism adopted more formal communication. Surprisingly, this study did not find any significant influence of accepting uncertainty and career focus on SMA usage. Therefore, the proposition that organizations accepting high level of uncertainty make greater usage of sophisticated and innovative MCS tools like SMA techniques are not held true in Bangladeshi listed companies.
- Of the three aspects of process characteristics, the level of complexity is found to have no significant influence on the adoption of SMA techniques. This result goes against the findings of Krumwiede (1998) who reported that process complexity is positively correlated with the decision to adopt innovative MAS such as ABC. Nevertheless, this result is consistent with Abdel-Kader and Luther (2008) who reported an insignificant association between process complexity and MAS sophistication in the British food and drink industry. The possible explanation for this result lies in the fact that the uses of automated process and modern technologies in

most of the industries in an endeavor to survive in the competitive markets leave them very close each other in terms of operational complexities. Accordingly, the use of innovative SMA techniques does not differ among companies based on the level of process complexities. However, the level of task uncertainty associated with the process has a significant positive influence on the adoption of SMA techniques. This finding indicates that organization with process characterized by higher task uncertainty adopted innovative and strategic oriented cost management tools to minimize the impact such uncertainty using additional information on internal and external factors provided by such tools. This finding is consistent with the arguments of Abernethy and Brownell (1997) and Chenhall (2003) who suggested a greater usage of broad based MCS in companies with high task uncertainty. Parallel to this effect, the results also reported a significant positive influence of task interdependence on the level of SMA usage. Consequently, the proposition that companies with process characterized by higher task interdependence make greater usage of sophisticated and innovative cost management tools to trim down the adverse effect of such interdependence appears to be true in the Bangladeshi listed companies. This finding supports the arguments and findings of several prior studies (e.g., Chenhall and Morris, 1986; Macintosh and Daft, 1987; Bouwens and Abernethy, 2000; Chenhall, 2003) who suggested a greater usage of broad scope, aggregated and integrated MCS in highly interdependent situations.

- Apart from the internal/organizational factors cited above, this study also examined the impact of the use of advanced technology in operation, market orientation, accountants' participation in strategic decision process, and presence of certified cost and management accountant (CMA) on the adoption of SMA techniques. Of these factors, only the effect of the use of advanced technology in operation on the adoption

of SMA techniques seems to be positive and statistically significant. This result supports the proposition that companies employing sophisticated operating technology make greater usage of innovative and strategic oriented MCS tools like SMA techniques to supply information required in such environment. Ittner and Larcker (1995, 1997), Sim and Killough (1998) and Abdel-Kader and Luther (2008) also supported this result and documented a greater usage of broad scope and strategic oriented MAS in advanced technology environment. On the contrary, this study does not find any significant influence of the orientation of a company, accountants' participation in strategic decision process and the presence of certified cost and management accountants on the adoption of SMA techniques.

- With respect to the effect of external environmental factors, this study finds a significant positive relationship between perceived environmental uncertainty (PEU) and the usage of SMA techniques, which indicates that organizations perceiving greater environmental uncertainty make greater usage of innovative and strategic oriented cost management tools to alleviate the adverse effect of such uncertainty. This result is consistent with the findings of majority of the prior studies (e.g., Gordon and Narayanan, 1984; Chenhall and Morris, 1986; Gul and Chia, 1994; Chong and Chong, 1997; Abdel-Kader and Luther, 2008) which documented a positive relationship between PEU and broad scope MAS information or sophistication of MAS. For example, Abdel-Kader and Luther (2008) also reported a significant positive influence of PEU on sophistication of MAS in the British food and drink industry. Of the five facets of environmental uncertainty, merely the effect of fluctuations in the environmental factors appears to be positive and statistically significant. Accordingly, it supports the assumption that organizations experiencing higher fluctuations in the environmental factors make greater usage of SMA

techniques to trim down the adverse effect of such fluctuation through enhanced usage of long-term and externally focused information provided by such techniques. Surprisingly, the effects of unpredictability and ambiguity of the environment, lack of information, and uncertainty of outcome on the adoption of SMA techniques are found to be insignificant.

- This study also finds a significant positive influence of intensity of competition (environmental hostility) on the adoption of SMA techniques, implying that companies facing fierce competition make greater usage of SMA techniques as such techniques include the provisions of using competitor and customer related information over long-term periods. This result supports the arguments and findings of several prior studies (Khandwalla, 1972; Bromwich, 1990; Mia and Clarke, 1999; O'Connor et al., 2011) which suggested sophistication of MAS to deal with increased market competition intensity. For instance, Khandwalla (1972) suggested the application of sophisticated accounting, production and statistical controls in facing hostility from intense competition. Bromwich (1990) also suggested the use of external and market oriented (benchmarking and monitoring) information in meeting an organization's challenges resulting from competition in its market. Among the three aspects of environmental hostility/intensity of competition, there is a significant positive relationship between stressful competition and the adoption of SMA techniques, suggesting that companies facing stressful competition make greater usage of SMA techniques than their counterparts. The findings also suggest that companies operating in an industry dominated by few companies make greater SMA usage as the relationship between market domination and SMA usage are positive and significant. However, the effect of entry restriction is found to be statistically insignificant.

- Among the other aspects of external environment (complexity, diversity, and ecology), this study finds a significant positive association between environmental diversity and SMA usage (Table 7.16). This result is an indication of the appropriateness of SMA techniques in a highly diversified environment. Unfortunately, the effects of environmental complexity and ecological pressure on the adoption of SMA techniques appear to be statistically insignificant, implying a weak contingent role of these factors on the adoption decision.
- Apart from the external environmental factors, the effects of institutional pressures are also examined (Table 7.18). Among the three different types to institutional pressures, the effect of coercive and mimetic pressure is found to be positive and statistically significant. This result suggests that Bangladeshi listed companies experience substantial pressures from parent company and other controlling organizations to adopt the best practices in the field of cost management practices. Moreover, sophistication of cost management system in the neighbor organizations and the presence of external consultant firms also exert pressures to copy the best practices in the industry. In contrast, the professional networks, Media, and culture have insignificant influence on the adoption of strategic oriented MAC tools.
- Apart from the effects of internal and external factors affecting SMA usage decision, this study also examined the effects of adoption on the perceived (Table 7.20) and observed firm performance (Table 7.21). As expected, the findings revealed a significant and positive effect of SMA usage on both the perceived and observed firm performance. These results suggest that the use of innovative and strategic oriented cost management tools can lead to favorable firm performance through facilitating improved and prompt decision making. This result is consistent with the findings of Cadez and Guilding (2008) and Amanollah Nejad Kalkhouran et al. (2017) who



documented that SMA usage has a significant and positive effect on perceived firm performance. This result supports the notion that better information, specifically in uncertain conditions, can facilitate improved resource allocation (Baines and Langfield-Smith, 2003) which, in turn, enhance the likelihood of positive outcome (Christensen and Feltham, 2003; Cadez and Guilding, 2008).

### **9.2.3 Findings on the Institutional Explanation of changes in the MAS**

Using the grounds of New Institutional Sociology (NIS), this study attempts to provide (Chapter Eight) a better understanding of what institutional factors foster the adoption of innovative cost management tools and how the implementation of such practices take place in the organizational set up. A modified version of Granlund and Lukka's (1998) model is used to include economic pressures (both internal and external) in addition to the three well known institutional pressures (coercive, mimetic, and normative). Started with the nature of changes took place in the management accounting system (MAS) over the years, this study concentrated on several aspects of implementation of changes including who initiate the change, participants in the change process, the implementation process, and the effects of changes on different aspects of firm performance. Twenty (20) in-depth face-to-face interviews were taken covering both financial and non-financial companies were conducted to catch up the changes took place over the years, agents participating in the change process, the stages and tasks in the change process and the effect of changes on performance. In addition to the tabulation of the responses received to display the trends, this study presents a substantial number of quotations made by the respondents ranging from deputy manager (finance and accounts) to CEO to explain the change process. A summary of the findings of the interview data is presented below:

- Management accounting change in the Bangladeshi listed companies is dominated by the ‘addition’ type of change over the ‘replacement’ type. Moreover, the extent of both the types of change appears to be considerably lower than that reported by Sulaiman and Mitchell (2005) in the context of Malaysian manufacturing companies.
- Lack of TMT awareness about the benefits of SMA usage, unwillingness to release/sanction resources required in the maintenance of a separate management accounting division, non-existence of sophisticated SMA usage in several industries, and the non-availability of professional cost and management accountants in some industries are found as the leading causes of non-adoption or low adoption of SMA practices.
- With respect to the impact of institutional forces on MA change, several forces of coercive and mimetic isomorphism are well evident in the sample companies. Normative isomorphism is rarely found in the field of MAPs.
- In the case of coercive isomorphism, the role of foreign shareholders, controlling organizations and parent company is found critical in the private sector companies, while the influence of international donors through government agencies is noticeable in the SOE. Thus, the notion of NIS that depending organizations adopt rules and structures, and accounting practices compatible with the organizations controlling or influencing them is well evident in the context of Bangladesh. This finding is consistent with the arguments of Sedlak (1981), Coser et al. (1982) and DiMaggio and Powel (1983) which suggested that the depending organizations adopt rules and structures, accounting practices and performance evaluations that are compatible with the organizations controlling or influencing them in a variety of ways. Yazdifar and Tsamenyi (2005) also presented evidence in support of this argument and reported that the dependent organizations are likely to adopt practices of resource providing

organizations. Moreover, the influence of rationalized states, other large rational organizations, and donor agencies such as WB, IMF is also evident in the SOE in bringing about homogenization in organizational rules and structures. Hussain and Gunasekaran (2002) also recognized the influence of IMF and WB over other institutions in shaping performance measurement systems.

- In case of mimetic isomorphism, the modeling of industry best practices by the borrowing organizations arises from benchmarking in an attempt to attain legitimacy, efficiency and competitive advantage is apparent in the Bangladeshi listed companies. The borrowing organizations imitate successful entity's structures and rules to serve a broad-based customer. This is consistent with the arguments of DiMaggio and Powell (1983) who suggested an imitation of successful entity's structures and rules by the borrowing organizations to serve a broad customer base. Additionally, the impact of MAPs of overseas partner organizations on the MAPs of local company is also exhibited in the attainment of legitimacy and to secure the flow of resources from fund providers. This is also evidenced by Lasyoud et al. (2018) in Libyan public manufacturing companies where they documented that Libyan companies are adopting MAPs of their Italian joint venture companies. Moreover, the influence of foreign consultants to imitate acceptable rules and structures of successful organizations at home and abroad is vigilant in the Bangladeshi companies. This role of consulting firms in modeling (imitating rules and structure of others) the best practices by the borrowing organizations was recognized by DiMaggio and Powell (1983).
- Normative pressures seem to have trifling impact on MA change in the sample companies with few exceptions. The impact of professional network and media is evident in only those companies where TMT members hold influential position in the

related professional body. More specifically, the holding of influential TMT position of professional institute drives the change of MAPs suggested in the professional discussion and media (journals). The impact of professional networks and media in diffusing a particular form of structure across organizations is also recognized in the earlier research (DiMaggio and Powell, 1983).

- In the economic pressure category, the impact of technological advancement, competition intensity, and economic uncertainty appears to have much bearing on the MA change. Hussain and Gunasekaran (2002) also documented a profound effect of technological advancement on the improvement of performance measurement system. Granlund and Lukka (1998) recognized technological advancement as a driver of convergence of MAPs in the organizational fields. However, organizational characteristics bring MA change only when there is a radical change in the structure specifically the level of decentralization. These findings seem to support the notion of NIS in several respects including the impact of advancement in technology, uncertain economic conditions, intensity of competition and changes in structures on the imitation and adoption of the best MAPs available at home and abroad.
- The underlying reasons for the imitation/adoption of the best practices (hereby MAPs) in the private sectors are, inter alia, the attainment of legitimacy, efficiency and competitive advantage. However, in the public sector enterprise, the ultimate goal of imitation is the attainment of legitimacy.

### **9.3 Contribution of this research**

The claim that management accounting (MA) information has lost its relevance in the changed business environment by Johnson and Kaplan (1987) and others opened up the avenues for the development of innovative and strategic oriented MA techniques that are

compatible to the changed business environment. In response to such criticisms, MA researchers devoted their considerable time and efforts to develop new and innovative MA tools (e.g., ABC, BSC, TC, value-chain costing, strategic costing and pricing, competitor accounting, customer accounting) that can provide the required cost management information suitable to make decision in the changed business environment. Surprisingly, empirical research on the usage/adoption, benefits, and contingencies of such new MA tools (known as SMA techniques), and the effect of their adoption on different facets of performance are not adequately covered by the extant literature, specifically in the developing and emerging economy. Accordingly, this study attempts to fill those gaps in the extant literature.

### **9.3.1 Empirical contributions**

This study provides empirical evidence on the usage of innovative and strategic-oriented management accounting practices as a package using the setting of an emerging and developing economy-Bangladesh, which, to the best of the researcher's knowledge, is the first of its kind in the field of SMA. Empirical studies conducted in the field of SMA to date have focused on the usage status of developed economies including USA (Cravens and Guilding, 2001), New Zealand (Guilding, 1999), Italy (Cescon et al., 2019), USA, UK, Australia and New Zealand (Guilding et al., 2000), Australia and Slovenia (Cadez and Guilding, 2007). Moreover, the present study shows the usage rate of specific group of SMA techniques (e.g., costing techniques, customer-focused techniques, competitor-oriented techniques) and particular SMA techniques (e.g., ABC, BSC, TC, strategic pricing) separately to provide a better understanding into the subject (Chapter Six). Considering the uniqueness of manufacturing and service industry, this study also presents the usage status of SMA as a package, specific group of SMA, and particular SMA techniques separately for the two sectors.

In addition to the usage status, perceived benefits derived from the usage of a package and specific SMA techniques are also presented. Moreover, which set of SMA techniques the sample companies are going to emphasize in the upcoming three years are also presented to provide an estimate of the future usage of these techniques. A comparative picture of present usage vs. future emphasis is also displayed at the ending part of Chapter Six to provide a better understanding on the subject.

In terms of the factors affecting the usage/adoption decision, the present study includes both internal organizational factors and external environmental factors which have rarely been addressed in developing economy context. Of the internal organizational factors, the influence of organizational culture on SMA usage has not been addressed, to the best of the researcher's knowledge, by the extant SMA literature for both the developed and developing economies. More importantly, as a response to the call for inclusion of several contingent factors (e.g., intensity of competition, environmental uncertainty, technology, structure, and organizational culture) by prominent MA researchers (Anderson and Lanen, 1999; Chenhall, 2003; Cadez and Guilding, 2008), the present study examined the effect of several aspects of environmental uncertainty, hostility/intensity of competition, diversity, complexity, and ecology on the adoption of SMA techniques. Accordingly, it is expected that this research will enrich the extant literature by supplying evidence on the effect of those factors on the usage of modern and sophisticated MA tools.

Apart from those stated above, the present research also concentrates on the effect of SMA usage on both perceived and observed firm performance which has rarely been addressed in the existing SMA literature, specifically in the emerging and developing economies.

Finally, the present study provides an institutional explanation of how and why changes in MAS take place, specifically in the listed companies in an emerging and developing economy. This aspect has rarely been addressed in the extant SMA literature.

### 9.3.2 Theoretical contributions

The present study uses contingency theory in explaining the hypothesized relationship between contingent factors and SMA adoption and institutional theory (NIS) in explaining how and why changes in the MAS have taken place over time. Despite the fact that there exist tons of studies that have used the ground of contingency theory, the present study enriches this field by inserting a number of contingencies (e.g., intensity of competition, environmental uncertainty, technology, structure, and organizational culture) which remained unexplored in the SMA literature. Additionally, as management accounting practices are not universally uniform and their proper understanding requires knowledge of the context (Hopper, 2000), the use of the context of an emerging and developing economy adds further novelty to the field of contingency theory.

An institutional explanation of management accounting change over time in the context of emerging and developing economy is also scarce, specifically in the field of SMA practices. This study extended the NIS model of Granlund and Lukka (1998) which is based on the fundamentals of DiMaggio and Powell's (1983) NIS theory. More specifically, the present study demonstrated how institutional isomorphism takes place across industries within a legal and institutional framework which is substantially different from that of developed economy. Accordingly, it is expected that this study enriches the extant literature of NIS theory by providing evidence of why and how the listed public limited companies in an emerging market transform from old MA tools to new SMA in the way of achieving legitimacy, competitive advantage and superior performance. More importantly, the triangulation of theories is seen as a vital validation technique in mixed methods research (Erzberger and Kelle, 2003; Modell, 2009), which mitigates the weakness of one by adopting another. While the contingency theory provides a better understanding of *what* factors really affect the

adoption of SMA techniques, the NIS explains *why and how* the transformation from old MA tools to new SMA tools take place.

### **9.3.3 Methodological contributions**

As this study adopted a mixed method approach, the shortcomings of cross-sectional surveys in explaining why or how changes in MAS take place over time are expected to be mitigated by the in-depth interview analysis. While adopting quantitative method is inevitable in establishing a relationship between variables and testing them through formulating hypotheses, this method cannot portray why and how changes take place in the actual practices and processes across organizational set up. Accordingly, employing multiple data sources and adopting multiple research methods can enhance the validity of research findings (Denzin, 1978), and reduce bias with complementary strengths and non-overlapping weaknesses (Modell, 2009).

Specifically, this study identified the contingencies influencing the adoption decision of SMA techniques across industries employing the quantitative method on one hand, and provides a better understanding of why and how the adoption of SMA techniques come to pass across the organizational set ups employing the qualitative method on the other hand. Triangulation of methods is not very common in the field of SMA practices, to the best of the researcher's knowledge, in the extant literature; thereby expects to provide new insights into how changes in the MAS can be achieved.

## **9.4 Implications of the study**

The findings of this study have implications from a theoretical, practical and policy perspectives. From a theoretical perspective, the findings of the hypotheses testing (presented in Chapter Seven) support the notion of contingency theory and demonstrates a significant



influence of a number of internal organizational and external environmental contingent variables on the usage of SMA techniques in the organizations. More specifically, strategic pattern pursued, organizational structure (degree of decentralization), organizational culture (power distance and emphasizing organizational interest), process characteristics (task uncertainty and interdependence), and use of advanced technology in operation have contingent role on the adoption decision. Of the external/environmental factors, perceived environmental uncertainty (as a holistic view, fluctuation in the external environmental factors), environmental hostility (intensity of competition as a holistic concept, stressful competition and market domination), environmental diversity, and institutional pressure (mimetic pressure) are found to have strong contingent roles on the adoption of SMA techniques in the Bangladeshi listed companies.

The findings of the qualitative (interview) data analysis also support the notions of institutional (NIS) theory; specifically, this study shows the dominant influence of mimetic pressures on the transition from old MA tools to new SMA techniques. In few cases, stakeholders (specifically shareholders) exert pressures (coercive isomorphism) on the adoption of innovative and strategic oriented MA tools as a replacement of old one or introduction of novel one. However, the influence of regulators appears to be flimsy in respect of the adoption of innovative MA tools or change in the MAS. Surprisingly, normative isomorphism (resulting from professional network) is found in few organizations specifically where the TMT members hold membership of professional accounting bodies (CMA). In a nutshell, the institutional explanation of MAS change in the Bangladeshi listed companies demonstrated diversified scenario across the organizational set ups with supremacy of mimetic isomorphism.

From the practitioners' view point, the findings of this study will make the top management team (TMT) members aware of the current state of MAPs in the Bangladeshi listed

companies. As the findings signify the supremacy of strategic pattern typology (prospector strategy) over others in the usage of strategic MA tools, it may assist them to articulate strategic process compatible to innovative cost management tools. Additionally, the TMT members may receive useful insights from the findings of this study with respect to the appropriate structure of the organization (degree of decentralization), preferred cultural values (optimum power distance between two executive positions and emphasizing organizational interest), process characteristics, and the nature of operating technology to facilitate the usage of strategic oriented and innovative MA tools. Additionally, they can get useful insights about the appropriateness of SMA techniques under diversified external environmental characteristics including the level of perceived environmental uncertainty, intensity of competition, and diversity. The institutional explanation of MAS change over time across industries will also equip them with necessary grounds and ways to shape and reshape their MAPs. Specifically, TMT will get answers to questions like why and how MAPs changes over time, who take parts in the implementation team and the way of solving the resulting conflicts and resistances during the implementation process, which in turn will assist them to redesign their own MCS.

From the policy perspectives, the findings reported a weak role of regulators (e.g., Bangladesh Securities and Exchange Commission-BSEC, Bangladesh Bank) and standard setters such as Professional accounting bodies (ICAB, ICMAB) in the adoption and usage of SMA techniques. This result signifies the reluctance of regulators and standard setters with respect to the cost management issues of listed companies. The underlying causes of this finding can be attributed to the fact that the regulators and standards setters are more concerned with the compliance (legal and reporting requirements) issues and have less interest to get involvement on the adoption of cost management tools. However, in the recent years the Institute of Cost and Management Accountants of Bangladesh (ICMAB) has taken

initiatives to implement cost audit in the listed companies and state-owned sugar mills as prescribed by the Commerce Ministry of the Government of Bangladesh. In this endeavor, the Institute (ICMAB) has issued a series of cost accounting standards (known as Bangladesh Cost Accounting Standards-BCAS) few years ago with continuous refinement to make them attractive and compatible across the organizations under different industries. More importantly, the significant positive effect of SMA usage on perceived and market-based firm performance urges the need for policies that would motivate Bangladeshi listed public limited companies to adopt and implement strategic oriented cost management techniques.

## **9.5 Limitations of this study**

The findings of this research must be interpreted in light of the following limitations.

- The sample of questionnaire survey conducted in collecting quantitative data in the first stage of this research contains only the listed public limited companies. Accordingly, the findings cannot be generalized for non-listed firms which also contribute to Bangladesh economy substantially. Moreover, despite the adequacy of sample size (as 20-30% representation of population is considered adequate in business research), the picture of other companies not included in the sample may be different from that reported in the findings. However, to cure this problem, companies from manufacturing and service sectors, large and small, financial and non-financial companies have been considered in the sample to make it more representative.
- Data collection through questionnaire survey is characterized by several limitations. For example, some questions may be understood, interpreted and responded by respondents from a view different from the researcher. To alleviate such limitations, about 90% of the questionnaire has been filled up by physical visit to the respondents. Again, this may create another problem- the interviewer bias (influencing respondents

to respond in a desired direction). The researcher has taken much care in this respect by asking indirect questions with respect to a specific SMA practice in order to draw a faithful picture of SMA practice.

- There is a continuous debate on who is a management accountant. This designation rarely exists in the organizational hierarchy; therefore, this study uses CFO, CEO, Head of Accounts and Finance, and Head of Cost and Budget to represent management accountants. However, care has been taken to ensure representation of management accountant through contacting executives who have reasonable knowledge on cost and management accounting practices.
- To demonstrate why and how companies transform from traditional MAC tools to modern and innovative techniques such as SMA, this study has conducted 20 in-depth interview surveys. While the researcher believed that this purpose has been accomplished to a desirable extent specifically to address issues like why companies intend to bring a change in the existing MAS, who take part in the introduction to implementation to institutionalization process, what and how the institutional isomorphism takes place across organizational set ups, and the resistance faced during implementation and ways to overcome them; the use of longitudinal case studies would provide better picture of the nature of a particular SMA practice including why and how the changes take place in the actual organizational set ups.
- In isolating SMA techniques from traditional MA techniques, this study has relied on the first era view of strategic management which emphasized the provision of external and long-term orientation of strategy (and thereby ignores the second era view-the resource-based view- of strategic management). Accordingly, the extant literature showed substantial variations with respect to the number of techniques included in the SMA package due to the non-existence of a generally accepted conceptual framework

of SMA (Tomkins and Carr, 1996; Langfield-Smith, 2008). Consequently, the list of SMA techniques included in this study is bound to be subjective.

## **9.6 Avenues of future research**

Based on the coverage and findings of this thesis, there are several research avenues which can be addressed by the researchers in the upcoming days in this emerging field of research.

- Considering the positive effect of SMA usage on several aspects of firm performance, further study can be taken to explore the status of SMA usage in the non-listed companies. A cautious comparison of SMA practices between these two types of companies can open up new avenues of research.
- The present study employs contingency theory to explore the factors affecting the adoption of SMA practices. The application of other theories such as the role theory and upper echelon theory can provide additional insights into the subject. Moreover, the use of alternative theories such as agency theory and stewardship theory can provide complementary evidence with respect to the effect of corporate governance mechanisms on the adoption of strategic oriented cost management tools in the context of developing and emerging economy.
- Changes in the MAS over time can be better explained using the longitudinal case study method. However, the extant corporate culture in Bangladesh displays a very little opportunity to do so. Additionally, the use of structuration theory can supplement the findings of this research and facilitate a better understanding of how MA practices become established and diffuse through organizational fields.
- As the nature of business process and associated technologies are changing at a faster rate, and as innovations in the field of SMA remained stagnant (Rashid et al., 2020), SMA scholars have to pay sincere attention to develop innovative techniques compatible to the changed business processes and models. Conceptual study can be more appropriate along with the observation through case study in this endeavor.

- Professional accounting bodies specifically The Institute of Cost and Management Accountants of Bangladesh (ICMAB) (The Chartered Institute of Management Accountants-CIMA, Institute of Management Accountants-IMA and the like at the international level) can play critical role in popularizing strategic and innovative MA techniques to the corporate sectors. Future research may focus on such institutional approach to diffuse SMA tools to the practitioners, and in particular the policies and approach to inform the institutional actors to popularize those techniques.
- Finally, the nature and level of SMA usage in the face of fourth industrial revolution (IR 4.0) can be of particular interest to the researchers. More specifically, case study research in exploring the nature and form of MAS in the big data environment can provide useful insights in regard to the prospective form and structure of MAS. In addition to this, the nature of MA information demanded and prevailed in the business environment characterized by blockchain, cloud-based solution and artificial intelligence can be of particular interest. The changing role management accountant from traditional counting task to business partner and in the climate change can also be addressed in the future research.

## References

- Aaken, D., Splitter, V. and Seidl, D. (2012), "Why do Corporate Actors Engage in Pro-social Behaviour? A Bourdieusian Perspective on Corporate Social Responsibility", Working Paper No. 319. UZH Business Working Paper Series, University of Zurich, Zurich.
- Abdel-Kader, M. and Luther, R. (2006), "Management accounting practices in the British food and drinks industry", *British Food Journal*, Vol. 108 No. 5, pp. 336-357.
- Abdel-Kader, M. and Luther, R. (2008), "The impact of firm characteristics on management accounting practices: A UK-based empirical analysis", *The British Accounting Review*, Vol. 40 No. 1, pp. 2-27.
- Abdul Majid, J. and Sulaiman, M. (2008), "Implementation of activity based costing in Malaysia: A case study of two companies", *Asian Review of Accounting*, Vol. 16 No. 1, pp. 39-55.
- Abdul Rahman, I.K., Abdul Rahman, A.Z., Tew, Y.H. and Omar, N. (1998), "A survey on management accounting practices in Malaysian manufacturing companies", Management Accounting Practices Paper 3, Concurrent session IC, International Management Accounting Conference, National University of Malaysia, Selangor.
- Abernethy, M.A. and Bouwens, J. (2005), "Determinants of accounting innovation implementation", *Abacus*, Vol. 41 No. 3, pp. 217-240.
- Abernethy, M. A. and Brownell, P. (1997), "Management control systems in research and development organizations: the role of accounting, behavior and personnel controls", *Accounting, Organizations and Society*, Vol. 22 No. 3/4, pp. 233-248.
- Abernethy, M.A. and Guthrie, C.H. (1994), "An empirical assessment of the "fit" between strategy and management information system design", *Accounting & Finance*, Vol. 34 No. 2, pp. 49-66.
- Ahmad, K. (2014), "The adoption of management accounting practices in Malaysian small and medium-sized enterprises", *Asian Social Science*, Vol. 10 No. 2, pp. 236-249.
- Ahrens, T.A. and Chapman, C.S. (2006), "Doing qualitative field research in management accounting: positioning data to contribute to theory", *Accounting Organizations and Society*, Vol. 31 No. 8, pp. 819-841.
- Akter, M., Hoque, M. and Chowdhury, L.A.M., A. (2016), "Perception Analysis of Financial and Non-Financial Performance Measurement for Banking Sector in Bangladesh: A Structural Equation Modeling Approach", *Special International Edition*, , pp. 93-104.

- Alamri, A.M. (2019), "Association between strategic management accounting facets and organizational performance", *Baltic Journal of Management*, Vol. 14 No. 2, pp. 212-234.
- Albu, N. and Albu, C.N. (2012), "Factors associated with the adoption and use of management accounting techniques in developing countries: The case of Romania", *Journal of International Financial Management & Accounting*, Vol. 23 No. 3, pp. 245-276.
- Alcouffe S, Berland N, Levant Y. (2008), "Actor-networks and the diffusion of management accounting innovations: A comparative study", *Management Accounting Research*, Vol. 19 No. 1, pp. 1-17
- Al Farooque, O., Van Zijl, T., Dunstan, K. and Karim, A.W. (2007). Corporate governance in Bangladesh: link between ownership and financial performance. *Corporate governance: An international review*, Vo. 15 No. 6, pp. 1453-1468.
- Al-Khadash, H.A. and Feridun, M. (2006), "Impact of strategic initiatives in management accounting on corporate financial performance: evidence from Amman Stock Exchange", *Managing global transitions*, Vol. 4 No. 4, pp. 299.
- Allen, N. and Oakland, J.S. (1988), "Quality assurance in the textile industry: part I.", *International Journal of Quality and Reliability Management*, Vol.5, No.5, p.25.
- AlMaryani, M.A.H. and Sadik, H.H. (2012), "Strategic management accounting techniques in Romanian companies: Some survey evidence", *Procedia Economics and Finance*, Vol. 3, pp. 387-396.
- Al-Omiri, M. and Drury, C. (2007), "A Survey of Factors Influencing the Choice of Product Costing Systems in UK Organizations", *Management Accounting Research*, Vol. 18, No. 4, pp. 399-424.
- Al Sawalqa, F., Holloway, D. and Alam, M. (2011), "Balanced Scorecard implementation in Jordan: An initial analysis", *International Journal of Electronic Business Management*, Vol. 9 No. 3, pp. 196-210.
- Amanollah Nejad Kalkhouran, A., Hossein Nezhad Nedaei, B. and Abdul Rasid, S.Z. (2017), "The indirect effect of strategic management accounting in the relationship between CEO characteristics and their networking activities, and company performance", *Journal of Accounting and Organizational Change*, Vol. 13 No. 4, pp. 471-491.
- Amaratunga, D., Baldry, D. and Sarshar, M. (2001), "Process improvement through performance measurement: the balanced scorecard methodology", *Work Study*, Vol. 50 No. 5, pp. 179-189.



- Anand, M., Sahay, B.S. and Saha, S. (2005), "Activity-Based Cost Management Practices in India: An Empirical Study", *Decision* (0304-0941), Vol. 32 No. 1, pp. 123-152.
- Anderson, S. W. and Lanen, W. N. (1999), "Economic transition, strategy and the evolution of management accounting practices: the case of India", *Accounting, organizations and society*, Vol. 24 No. (5-6), pp. 379-412.
- Angelakis, G., Theriou, N. and Floropoulos, I. (2010), "Adoption and benefits of management accounting practices: Evidence from Greece and Finland", *Advances in accounting*, Vol. 26 No. 1, pp. 87-96.
- Anthony, R.N. (1965), "Planning and control systems: a framework for analysis. Division of Research, Graduate School of Business Administration, Harvard University.
- Anthony, R. (1989), "Reminiscences about Management accounting", *Journal of Management Accounting Research*, Vol. 1, pp. 1-20.
- Arena, M. and Azzone, G. (2005), "ABC, Balanced Scorecard, EVA<sup>TM</sup>: An empirical study on the adoption of innovative management accounting techniques", *International Journal of Accounting, Auditing and Performance Evaluation*, Vol. 2 No. 3, pp. 206-225.
- Armitage, H.M. and Nicholson, R., 1993. Activity based costing: a survey of Canadian practice. *CMA magazine*, Vol. 67 No. 2, pp .22.
- Armitage, H.M., Webb, A. and Glynn, J. (2016), "The use of management accounting techniques by small and medium-sized enterprises: a field study of Canadian and Australian practice", *Accounting Perspectives*, Vol. 15 No. 1, pp. 31-69.
- Arunruangsirilert, T. and Chonglertham, S. (2017), "Effect of corporate governance characteristics on strategic management accounting in Thailand", *Asian Review of Accounting*, Vol. 25 No. 1, pp. 85-105.
- Armstrong, P. (1987), "*The abandonment of productive intervention in management teaching syllabi: an historical analysis*", Coventry: Warwick papers in Industrial Relations, No 15, Industrial Relations Research Unit, University of Warwick.
- Arroyo, P. (2012), "Management accounting change and sustainability: an institutional approach", *Journal of Accounting & Organizational Change*, Vol. 8 No. 3, pp. 286-309.
- Arunruangsirilert, T. and Chonglertham, S. (2017), "Effect of corporate governance characteristics on strategic management accounting in Thailand", *Asian Review of Accounting*, Vol. 25 No. 1, pp. 85-105.

- Asghar, J. (2013), "Critical paradigm: A preamble for novice researchers", *Life Science Journal*, Vol. 10 No. 4, pp. 3121-3127.
- Ashton, D., Hopper, T. and Scapens, R. (1995), "The changing nature of issues in management accounting", *Issues in Management Accounting*, Ashton, D., Hopper, T. and Scapens, R.(editors), Prentice Hall, Hertfordshire.
- Ask, U. and Ax, C. (1992), "Trends in the development of product costing practices and techniques: a survey of the Swedish manufacturing industry. Univ., Handelshögsk.
- Askarany, D. and Smith, M. (2004), "Contextual Factors and Administrative Changes", *Journal of Issues in Informing Science and Information Technology*, Vol. 1, pp. 179-188
- Askarany, D., Yazdifar, H. and Askary, S. (2010), "Supply chain management, activity-based costing and organisational factors", *International journal of production economics*, Vol. 127 No. 2, pp. 238-248.
- Assiri, A., Zairi, M. and Eid, R. (2006), "How to profit from the balanced scorecard: An implementation roadmap", *Industrial Management & Data Systems*, Vol. 106 No. 7, pp. 937-952.
- Atkinson, H. (2006), "Strategy implementation: a role for the balanced scorecard?", *Management Decision*, Vol. 44 No. 10, pp. 1441-1460.
- Atkinson, A.A., Waterhouse, J.H. and Wells, R.B. (1997), "A stakeholder approach to strategic performance measurement", *MIT Sloan Management Review*, Vol. 38 No. 3, pp.25-37.
- Atkinson, A.A., Balakrishnan, R., Booth, P. and Cote, J.M. (1997), "New directions in management accounting research", *Journal of Management Accounting Research*, Vol. 9 No. 79, pp. 79-108.
- Ax, C. and Greve, J. (2017), "Adoption of management accounting innovations: Organizational culture compatibility and perceived outcomes", *Management Accounting Research*, Vol. 34, pp. 59-74.
- Ax, C., Greve, J. and Nilsson, U. (2008), "The impact of competition and uncertainty on the adoption of target costing", *International Journal of Production Economics*, Vol. 115 No. 1, pp. 92-103.
- Aykan, E. and Aksoylu, S. (2013), "Effects of competitive strategies and strategic management accounting techniques on perceived performance of businesses", *Australian Journal of Business and Management Research*, Vol. 3 No. 7, pp. 30-39.

- Baines, A. and Langfield-Smith, K. (2003), "Antecedents to management accounting change: a structural equation approach", *Accounting, organizations and society*, Vol. 28 No. 7-8, pp. 675-698.
- Baird, K.M., Harrison, G.L. and Reeve, R.C. (2004), "Adoption of activity management practices: a note on the extent of adoption and the influence on organizational and cultural factors", *Management Accounting Research*, Vol. 15 No. 4, pp. 383-399.
- Bamford, D.R. and Land, N. (2006), "The application and use of the PAF quality costing model within a footwear company", *International Journal of Quality & Reliability Management*, Vol. 23 No. 3, pp. 265-278
- Battilana, J., Leca, B. and Boxenbaum, E. (2009), "How actors change institutions: towards a theory of institutional entrepreneurship", *The Academy of Management Annals*, Vol. 3 No. 1, pp. 65-107.
- Baumol, W.J. (1986), "Contestable markets: an uprising in the theory of industry structure", *Microtheory: applications and origins*, The MIT Press, pp.40-54.
- Barwise, P., Higson, C., Likierman, A. and Marsh, P. (1989), "Accounting for Brands", London Business School and The Institute of Chartered Accountants in England and Wales.
- Baxter J, Chua WF. (2003), "Alternative Management Accounting Research: Whence and Whither", *Accounting, Organizations and Society*, Vol. 28 No. (2-3), pp. 97-126.
- Bellis-Jones, R. (1989), "Customer profitability analysis. *Management Accounting*, Vol. 67 No. 2, pp. 26-28.
- Berger, P.L. and Luckmann, T. (1966), *The Social Construction of Reality*, Doubleday, New York, NY.
- Berger, P.D. and Nasr, N.I. (1998), "Customer lifetime value: Marketing models and applications", *Journal of interactive marketing*, Vol. 12 No. 1, pp. 17-30.
- Bernard, H. R. (2002), *Research methods in anthropology: Qualitative and quantitative approaches* (3rd ed.). Walnut Creek, CA: Alta Mira Press.
- Berry, W.D. (1993), *Understanding regression assumptions*, (Vol. 92), Sage.
- Bescos, P. L., Cauvin, E. and Gosselin, M. (2002), "Activity based costing and activity-based management: comparison of the practices in Canada and in France", *Comptabilite ´, contro ˆle et audi*, Vol. 8, pp. 229-244.
- Bhaskar, R. (1978), "A Realist Theory of Science", 2nd edition. Harvester Press, Hassocks.
- Bhaskar, R. (1979), "The Possibilities of Naturalism. A Philosophical Critique of the Contemporary Human Sciences", Harvester Press, Brighton.

- Bhimani, A. (1994), "Accounting enlightenment in the age of reason", *The European Accounting Review*, Vol. 3 No. 3, pp. 399-442.
- Bhimani, A. and Bromwich, M. (2010), "*Management accounting: retrospect and prospect*", Oxford: CIMA Publishing.
- Bhimani, A., Gosselin, M. and Ncube, M. (2005), "Strategy and activity based costing: a cross national study of process and outcome contingencies", *International Journal of Accounting, Auditing and Performance Evaluation*, Vol. 2 No. 3, pp. 187-205.
- Bhimani, A., Horngren, C., Datar, S. and Rajan, M. (2012), "Management and Cost Accounting", 5th Ed. Harlow: Pearson.
- Bisbe, J. and Otley, D. (2004), "The effects of the interactive use of management control systems on product innovation", *Accounting, Organizations and Society*, Vol. 29 No. 8, pp. 709-737.
- Bisman, J. (2010), "Postpositivism and accounting research: A (personal) primer on critical realism", *Australasian Accounting, Business and Finance Journal*, Vol. 4 No. 4, pp. 3-25.
- Bjornenak, T. (1997), "Diffusion and accounting: the case of ABC in Norway", *Management accounting research*, Vol. 8 No. 1, pp. 3-17.
- Bjornenak, T. and Mitchell, F. (2002), "The development of activity-based costing journal literature, 1987-2000", *European Accounting Review*, Vol. 11 No. 3, pp. 481-508.
- Blattberg, R.C. and Deighton, J. (1996), "Manage marketing by the customer equity test", *Harvard business review*, Vol. 74 No. 4, pp. 136-144.
- Blauw, J.N. and During, W.E. (1990), "Adoption of an organizational innovation: total quality control in industrial firms", *The International Journal of Production Research*, Vol. 28 No. 10, pp. 1831-1846.
- Blundell, B., Sayers, H. and Shanahan, Y. (2003), "The Adoption and Use of the Balanced Scorecard in New Zealand: A Survey of the Top 40 Companies", *Pacific Accounting Review*, Vol. 15 No. 1, pp. 49-74.
- Bose, S., Saha, A., Khan, H.Z. and Islam, S. (2017), "Non-financial disclosure and market-based firm performance: The initiation of financial inclusion", *Journal of Contemporary Accounting & Economics*, Vol. 13 No. 3, pp. 263-281.
- Botes, L. V. (2005), "*The Perception of the Skills Required and Displayed by Management Accountants to Meet Future Challenges*", Ph.D. Thesis retrieved from <http://uir.unisa.ac.za/handle/10500/1935>

- Bourdieu, P. (1986), “*The Forms of Capital*, in Richardson, J.E. (Ed.): *Handbook of Theory of Research for the Sociology of Education*”, Greenwood, New York, pp.241–258.
- Bouwens, J. and Abernethy, M.A. (2000), “The consequences of customization on management accounting system design”, *Accounting, Organizations and Society*, Vol. 25 No. 3, pp. 221-241.
- Boyns, T. (1998), “Budgets and budgetary control in British businesses to c. 1945”, *Accounting, Business & Financial History*, Vol. 8 No. 3, pp. 261-301.
- Boyns, T. and Edwards, J. (1997), “The construction of cost accounting systems in Britain to 1900: the case of the coal, iron and steel industries”, *Business History*, Vol. 39 No. 3, pp. 1-29.
- Boyns, T., Matthews, M. and Edwards, J. (2004), “The development of costing in the British chemical industry, c1870 – c1940”, *Accounting and Business Research*, Vol. 34 No. 1, pp. 3-24.
- Braam, G.J. and Nijssen, E.J. (2004), “Performance effects of using the balanced scorecard: a note on the Dutch experience”, *Long range planning*, Vol. 37 No. 4, pp. 335-349.
- Brancato, C. (1995), *New Corporate Performance Measures: A Research Report*. Report no.118-95-RR, New York: Conference Board.
- Braun, V. and Clarke, V. (2006), “Using thematic analysis in psychology”, *Qualitative Research in Psychology*, Vol. 3 No. 2, pp. 77-101.
- Bright, J., Davies, R.E., Downes, C.A. and Sweeting, R.C. (1992), “The deployment of costing techniques and practices: a UK study”, *Management accounting research*, Vol. 3 No. 3, pp. 201-211.
- Bromwich, M. (1988), “Managerial accounting definition and scope - from a managerial view”, *Management Accountant*, Vol. 66 No. 8, pp. 26-27.
- Bromwich, M. (1990), “The case for strategic management accounting: the role of accounting information for strategy in competitive markets”, *Accounting, Organizations and Society*, Vol. 15 No. (1-2), pp. 27-46.
- Bromwich, M. (1991), “*Accounting for strategic excellence*”, Working paper, Department of Accounting and Finance, London School of Economics and Political Science.
- Bromwich, M. (1992), “Strategic management accounting”, In: Drury, C. (Ed.), *Management Accounting Handbook*, Butterworth-Heinemann, London.
- Bromwich, M. (1996), “Strategic management accounting”, In: Drury, C. (Ed.), *Management Accounting Handbook*. Butterworth-Heinemann, Oxford.

- Bromwich, M. (2000), "Thoughts on management accounting and strategy", *Pacific Account. Rev.* Vol. 11 No. 2, pp. 41–48.
- Bromwich, M. and Bhimani, A. (1989). *Management Accounting: Evolution not Revolution*, London: CIMA.
- Bromwich, M. and Bhimani, A. (1994), "*Management Accounting Pathways to Progress*", London: CIMA publishing.
- Brown, B. and Anthony, S.D. (2011), "How P&G tripled its innovation success rate", *Harvard Business Review*, Vol. 89 No. 6, pp. 64-72.
- Brown, R. and Pierce, B. (2004), "An empirical study of activity-based systems in Ireland", *Irish Accounting Review*, Vol. 11 No. 1, pp. 33-55.
- Brown, A., Booth, P. and Giacobbe, F. (2004), "Technological and Organizational Influences on the Adoption of Activity-based Costing in Australia", *Accounting and Finance*, Vol. 44, No. 3, pp. 329-356.
- Brownell, P. (1985), "Budgetary systems and the control of functionally differentiated organizational activities", *Journal of Accounting Research*, Vol. 23 No. 2, pp. 502-512.
- Brownell, P. and Dunk, A. S. (1991), "Task uncertainty and its interaction with budgetary participation and budget emphasis; some methodological issues and empirical investigation", *Accounting, Organizations and Society*, Vol. 8, pp. 693-703.
- Brownell, P. and Merchant, K. (1990), "The budgetary and performance influences of product standardisation and manufacturing process automation", *Journal of Accounting Research*, Vol. 28 No. 2, pp. 388-397.
- Brownlie, D. (1999), "Benchmarking your marketing process", *Long Range Planning*, Vol. 31, pp. 88-95.
- Bruns Jr., W. J. and Waterhouse, J. H. (1975), "Budgetary control and organizational structure", *Journal of Accounting Research*, Autumn, pp. 177–203.
- Bryant, C. and Jary, D. (2014), "*Giddens' theory of structuration: A critical appreciation*", Routledge.
- Bryant, S.M., Stone, D. and Wier, B. (2011), "An exploration of accountants, accounting work, and creativity", *Behavioral Research in Accounting*, Vol. 23 No. 1, pp. 45-64.
- Bryman, A. and Bell, E. (2011), "*Business research methods*", Oxford: Oxford university press.

- Burkert, M., Davila, A. and Oyon, D. (2010), "Performance consequences of balanced scorecard adoptions: Claim for large-scale evidence and propositions for future research", Epstein, M.J., Manzoni, J.-F. and Davila, A. (Ed.) *Performance Measurement and Management Control: Innovative Concepts and Practices (Studies in Managerial and Financial Accounting, Vol. 20)*, Emerald Group Publishing Limited, Bingley, pp. 345-361.
- Burns, J. (2000), "The dynamics of accounting change: inter-play between new practices, routines, institutions, power and politics", *Accounting, Auditing & Accountability Journal*, Vol. 13 No. 5, pp. 566-96.
- Burns, J. and Scapens, R.W. (2000), "Conceptualizing management accounting change: an institutional framework", *Management accounting research*, Vol. 11 No. 1, pp. 3-25.
- Burns, T. and Stalker, G. (1961), *The management of innovation*, London: Tavistock.
- Busco, C., Quattrone, P. and Riccaboni, A. (2007), "Management accounting: issues in interpreting its nature and change", *Management Accounting Research*, Vol. 18 No. 2, pp.125-149.
- Cadez, S. and Guilding, C. (2007), "Benchmarking the incidence of strategic management accounting in Slovenia", *Journal of Accounting and Organizational Change*, Vol. 3 No. 2, pp. 126-146.
- Cadez, S. and Guilding, C. (2008), "An exploratory investigation of an integrated contingency model of strategic management accounting", *Accounting, organizations and society*, Vol. 33 No. (7-8), pp. 836-863.
- Cadez, S. and Guilding, C. (2012), "Strategy, strategic management accounting and performance: a configurational analysis", *Industrial Management and Data Systems*, Vol. 112 No. 3, pp. 484-501.
- Cadez, S. and Czerny, A. (2016), "Climate change mitigation strategies in carbon-intensive firms", *Journal of Cleaner Production*, Vol. 112, pp. 4132-4143.
- Cadez, S., Czerny, A. and Letmathe, P. (2019), "Stakeholder pressures and corporate climate change mitigation strategies", *Business Strategy and the Environment*, Vol. 28 No. 1, pp. 1-14.
- Cahan, S.F., De Villiers, C., Jeter, D.C., Naiker, V. and Van Staden, C.J. (2016), "Are CSR disclosures value relevant? Cross-country evidence", *European accounting review*, Vol. 25 No. 3, pp. 579-611.
- Campbell, S., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S., Bywaters, D. and Walker, K. (2020), "Purposive sampling: complex or simple? Research case

- examples”, *Journal of Research in Nursing*, Vol. 25 No. 8, pp. 652-661.
- Carroll, G.R. and Delacroix, J. (1982), “Organizational mortality in the newspaper industries of Argentina and Ireland: An ecological approach”, *Administrative science quarterly*, Vol. 27 No. 2, pp.169-198.
- Cescon, F., Costantini, A. and Grassetti, L. (2019), “Strategic choices and strategic management accounting in large manufacturing firms”, *Journal of Management and Governance*, Vol. 23 No. 3, pp. 605-636.
- Chan, A.P.C. and Chan, A.P.L. (2004), "Key performance indicators for measuring construction success", *Benchmarking: An International Journal*, Vol. 11 No. 2, pp. 203-221.
- Chatzipetrou, E. and Moschidis, O. (2016), “Quality costing: a survey in Greek supermarkets using multiple correspondence analysis”, *International Journal of Quality & Reliability Management*, pp. 1-25.
- Chen, F. (1992), "Survey of Quality in Western Michigan Firms", *International Journal of Quality & Reliability Management*, Vol. 9 NO. 4.
- Chenhall, R.H. (1997), “Reliance on manufacturing performance measures, total quality management and organizational performance”, *Management accounting research*, Vol. 8 No. 2, pp. 187-206.
- Chenhall, R.H. (2003), “Management control systems design within its organizational context: findings from contingency-based research and directions for the future”, *Accounting, organizations and society*, Vol. 28 No. 2-3, pp. 127-168.
- Chenhall, R.H. (2005), “Integrative strategic performance measurement systems, strategic alignment of manufacturing, learning and strategic outcomes: an exploratory study”, *Accounting, organizations and society*, Vol. 30 No. 5, pp. 395-422.
- Chenhall, R.H. and Langfield-Smith, K. (1998), “Adoption and benefits of management accounting practices: an Australian study”, *Management accounting research*, Vol. 9 No. 1, pp. 1-19.
- Chenhall, R. H. and Morris, D. (1986), “The impact of structure, environment and interdependencies on the perceived usefulness of management accounting systems”, *Accounting Review*, Vol. 61, pp. 16–35.
- Chenhall, R. H. and Morris, D. (1995). Organic decision and communication processes and management accounting systems in entrepreneurial and conservative business organizations. *Omega*, 23(5), 485-497.



- Chia, Y. (1995), “Decentralization, management accounting (MCS) information characteristics and their interaction effects on managerial performance: a Singapore study”, *Journal of Business Finance and Accounting*, Vol. 22 No. 6, pp. 811–830.
- Cinquini, L. and Tenucci, A. (2007), “Is the adoption of Strategic Management Accounting techniques really “strategy-driven”? Evidence from a survey”, Munich Personal RePEc Archive Paper No. 11819, available at: <https://mpra.ub.uni-muenchen.de/11819/>
- Cinquini, L. and Tenucci, A. (2010), “Strategic management accounting and business strategy: a loose coupling?”, *Journal of Accounting and Organizational Change*, Vol. 6 No. 2, pp. 228-259.
- Chong, V. and Chong, K. (1997), “Strategic choices, environmental uncertainty and SBU performance: a note on the intervening role of management accounting systems”, *Accounting and Business Research*, Vol. 27 No. 4, pp. 268–276.
- Chongruksut, W. (2002), “The adoption of activity-based costing in Thailand”, (Doctoral dissertation, Victoria University).
- Chua, W.F. (1986), “Radical developments in accounting thought”, *Accounting review*, Vol. 61 No. 4, pp.601-632.
- Chua, W.F. (1995), “Experts, networks and inscriptions in the fabrication of accounting images: A story of the representation of three public hospitals”, *Accounting, Organizations and Society* Vol. 20 No. (2-3), pp. 11-145.
- Chow, C.W., Duh, R.R. and Xiao, J.Z. (2006), “Management accounting practices in the People's Republic of China”, *Handbooks of Management Accounting Research*, Vol. 2, pp. 923-967.
- Chow, C.W., Haddad, K.M. and Williamson, J.E. (1997), “Applying the balanced scorecard to small companies”, *Strategic Finance*, Vol. 79 No. 2, pp. 21-27.
- Christensen, P. O. and Feltham, G. A. (2003), *Economics of accounting: Volume I- Information in markets*. Boston: Kluwer Academic publishers.
- Clarke, P.J. (1997), “Management accounting practices in large Irish manufacturing firms”, *Irish Journal of Management*, Vol. 18, pp. 136-152.
- Clarke, V. and Braun, V. (2014), “Thematic analysis”, In *Encyclopedia of critical psychology* (pp. 1947-1952), Springer, New York, NY.
- Claessens, S. and Djankov, S. (1999), “Ownership concentration and corporate performance in the Czech Republic”, *Journal of Comparative Economics*, Vol. 27No. 3, pp. 498-513.

- Coad, A. (1996), "Smart work and hard work: explicating a learning orientation in strategic management accounting", *Management Accounting Research*, Vol. 7 No. 4, pp. 387-408.
- Coad, A.F. and Herbert, I.P. (2009), "Back to the future: new potential for structuration theory in management accounting research?", *Management Accounting Research*, Vol. 20 No. 3, pp. 177-192.
- Coad, A., Jack, L. and Kholeif, A.O.R. (2015), "Structuration theory: reflections on its further potential for management accounting research", *Qualitative Research in Accounting & Management*, Vol. 12 No. 2, pp. 153-171.
- Coad, A., Jack, L. and Kholeif, A. (2016), "Strong structuration theory in accounting research", *Accounting, Auditing & Accountability Journal*, Vol. 29 No. 7, pp. 1138-1144.
- Cohen, S., Venieris, G. and Kaimenaki, E. (2005), "ABC: adopters, supporters, deniers and unawares", *Managerial Auditing Journal*, Vol. 20 No. 9, pp. 981-1000.
- Collier, P. and Gregory, A. (1995), "Strategic management accounting: a UK hotel sector case study", *International Journal of Contemporary Hospitality Management*, Vol. 7 No. 1, pp. 16-21.
- Collis, J. and Hussey, R. (2003), *Business Research: A Practical Guide for Undergraduate and Postgraduate Students*, 2nd edition, Palgrave Macmillan, New York.
- Collins, R. (1979), *The Credential Society*. New York: Academic Press.
- Cooper, R. (1996), "Look out, management accountants", *Management Accounting*, Vol. 74 No. 5, pp. 20-27.
- Cooper, R. and Kaplan, R.S. (1988), "Measure costs right: make the right decisions", *Harvard business review*, Vol. 66 No. 5, pp. 96-103.
- Cooper, R. and Kaplan, R.S. (1991), "Profit priorities from activity-based costing", *Harvard business review*, Vol. 69 No. 3, pp. 130-135.
- Cooper, R. and Kaplan, R.S. (1999), *The design of cost management systems*, 2<sup>nd</sup> edition, Prentice-Hall, New York, NY.
- Cooper, R. and Slagmulder, R. (1997), "Factors influencing the target costing process: lessons from Japanese practice" available at: [http://wps-feb.ugent.be/Papers/wp\\_97\\_30.pdf](http://wps-feb.ugent.be/Papers/wp_97_30.pdf) (accessed September 21, 2018)
- Cooper, R. and Yoshikawa, T. (1994), "Inter-organizational cost management systems: The case of the Tokyo-Yokohama-Kamakura supplier chain", *International Journal of Production Economics*, Vol. 37 No. 1, pp. 51-62.

- Coser, L., Kadushin, C. and Powell, W.W. (1982), "*Books: The Culture and Commerce of Publishing*", New York, Basic Books.
- Cotton, W.D., Jackman, S.M. and Brown, R.A. (2003), "Note on a New Zealand replication of the Innes et al. UK activity-based costing survey", *Management Accounting Research*, Vol. 14 No. 1, pp. 67-72.
- Covaleski, M.A., Dirsmith, M.W. and Michelman, J.E. (1993), "An institutional theory perspective on the DRG framework, case-mix accounting systems and health-care organizations", *Accounting, Organizations and Society*, Vol. 18 No. 1, pp. 65-80.
- Covaleski, M.A., Dirsmith, M.W. and Samuel, S. (1996), "Managerial accounting research: the contributions of organizational and sociological theories", *Journal of management accounting research*, Vol. 8, pp.1-36.
- Coser, L., Kadushin, C. and Powell, W.W. (1982), "*Books: The Culture and Commerce of Publishing*", New York, Basic Books.
- Crabtree, A.D. and DeBusk, G.K. (2008), "The effects of adopting the balanced scorecard on shareholder returns", *Advances in Accounting*, Vol. 24 No. 1, pp. 8-15.
- Cravens, D. W., Greenley, G., Piercy, N. F. and Slater, S. (1997), "Integrating contemporary strategic management perspectives", *Long Range Planning*, Vol. 30 No. 4, pp. 493–506.
- Cravens, K.S. and Guilding, C. (2001), "An empirical study of the application of strategic management accounting techniques", *Advances in Management Accounting*, Vol. 10, pp. 95-124.
- Creswell, J. (2003), *Research Design: Qualitative and Quantitative Approaches*, 2<sup>nd</sup> edition, Thousand Oaks, California.
- Creswell, J.W. (2012), "Educational research: planning, conducting, and evaluating quantitative and qualitative research, 4<sup>th</sup> ed. Pearson, Boston.
- Creswell, J.W. and Clark, V.L.P. (2017), "*Designing and Conducting Mixed Methods Research*", Thousand Oaks: Sage.
- Crosby, P.B. (1979), "*Quality is Free*", McGraw-Hill, New York, NY.
- Cugini, A., Carù, A. and Zerbini, F. (2007), "The cost of customer satisfaction: a framework for strategic cost management in service industries", *European Accounting Review*, Vol. 16 No. 3, pp. 499-530.
- Dacin, M.T, Goodstein, J. and Richard Scott, W. (2002), "Institutional theory and institutional change: Introduction to the special research forum", *Academy of management journal*, Vol. 45 No. 1, pp. 45-56.

- Daft, R. L. and Macintosh, N. J. (1981), "A tentative exploration into the amount and equivocality of information processing in organisational work units", *Administrative Science Quarterly*, Vol. 26 No. 2, pp. 207-244.
- Daily, C.M. and Dalton, D.R. (1992), "The relationship between governance structure and corporate performance in entrepreneurial firms", *Journal of Business Venturing*, Vol. 7 No. 5, pp. 375-386.
- Daily, C.M. and Dalton, D.R. (1993), "Board of directors leadership and structure: Control and performance implications", *Entrepreneurship theory and practice*, Vol. 17 No. 3, pp. 65-81.
- Dale, B.G. and Plunkett, J.J. (1995), "Quality Costing", 2nd ed., Chapman and Hall, London.
- Dale, B. and Wan, G. (2002), "Setting up a quality costing system: An evaluation of the key issues", *Business Process Management Journal*, Vol. 8 No. 2, pp. 104-116.
- Datta, L.E. (1994), "Paradigm wars: A basis for peaceful coexistence and beyond. *New directions for program evaluation*, Vol. 61, pp. 53-70.
- Davis, S. and Albright, T. (2004), "An investigation of the effect of balanced scorecard implementation on financial performance", *Management accounting research*, Vol. 15 No. 2, pp. 135-153.
- De Chernatony, L. and McDonald, M. (1998), "Creating Powerful Brands (2nd edn). Butterworth-Heinemann: Oxford.
- De Geuser, F., Mooraj, S. and Oyon, D. (2009), "Does the balanced scorecard add value? Empirical evidence on its effect on performance", *European Accounting Review*, Vol. 18 No. 1, pp. 93-122.
- DeBusk, G.K. and Crabtree, A.D. (2006), "Does the balanced scorecard improve performance?", *Management Accounting Quarterly*, Vol. 8 No. 1, pp. 44-48.
- Decoene, V. and Bruggeman, W. (2006), "Strategic alignment and middle-level managers' motivation in a balanced scorecard setting", *International Journal of Operations & Production Management*, Vol. 26 No. 4, pp. 429-448.
- Dean Jr., J.W. and Snell, St.A. (1996), "The strategic use of integrated manufacturing: an empirical examination", *Strategic Management Journal*, Vol. 17 No. 6, pp. 459-480.
- Deegan, C. (2005), *Australian Financial Accounting*, 4th Edition, Sydney: McGraw Hill Australia Pty Ltd.
- Dekker, H., Smidt, P. (2003), "A survey on the adoption and use in Dutch firms of target costing", *International Journal of Production Economics*, Vol. 84 No. 3, pp. 293-305.
- Denzin, N.K. (1978), "Sociological methods: A sourcebook", New York, NY: McGraw-Hill.

- Dewey, J. (2008), “*How we think*”, In J. Boydston (Ed.), *The middle works of John Dewey, 1899-1924* (Vol. 11, pp. 105-353), Carbondale: Southern Illinois University Press.
- Dey, I. (2003), “*Qualitative data analysis: A user friendly guide for social scientists*”, Routledge.
- Dhaka Stock Exchange (DSE) (2019), “Sector wise company list”, available at: [https://www.dsebd.org/by\\_industrylisting.php](https://www.dsebd.org/by_industrylisting.php) (accessed 07 April 2021).
- Dhaka Tribune. (2017), “Bangladesh will be among top 3 fastest growing economies”, available at: <http://www.dhakatribune.com/bangladesh/2017/03/23/bangladesh-will-among-top-3-fastest-growing-economies> (accessed 16.11.2019).
- DiMaggio, P. J. (1988), “Interest and agency in institutional theory”, In L. G. Zucker (Ed.), *Institutional patterns and organizations: culture and environment*. Cambridge, MA: Ballinger.
- DiMaggio, P.J. and Powell, W.W. (1983), “The iron cage revisited: institutional isomorphism and collective rationality in organizational fields”, *American Sociological Review*, Vol. 48 No. 2, pp. 147-160.
- DiMaggio, P.J. and Powell, W.W. (Eds) (1991), *The New Institutionalism in Organizational Analysis*, University of Chicago Press, Chicago, IL, pp. 1-38.
- Dixon, R. and Smith, D.R. (1993), “Strategic management accounting”, *Omega*, Vol. 21 No. 6, pp. 605-618.
- Doty, H.D., Glick, W.H. and Huber, G.P. (1993), “Fit, equifinality, and organizational effectiveness: a test of two configurational theories”, *Academy of Management Journal*, Vol. 36, pp. 1196-1250.
- Drazin, R. and Van De Ven, A. (1985), “Alternative forms of fit in contingency theory”, *Administrative Science Quarterly*, Vol. 30, pp. 514–540.
- Drury, C. (2012), “*Management and Cost Accounting*”, London: Cengage.
- Drury, C. and Tayles, M. (1994), “Product costing in UK manufacturing organizations”, *European Accounting Review*, Vol. 3 No. 3, pp. 443-470.
- Drury, C., Braund, S., Osborne, P. and Tayles, M. (1993), “A survey of management accounting practices in UK manufacturing companies”, ACCA Research Occasional Paper, London: The Chartered Association of Certified Accountants.
- Drysdale, L. and Dunn, P. (1996), “Financial management survey 1996: current state of financial management in the UK”, London: Chartered Institute of Management Accounting.

- Dugdale, D. (1994), "Theory and practice: The views of CIMA members and students", *Management Accounting*, Vol. 72 No. 8, pp. 56-61.
- Dugdale, D. and Jones, C. (2003), "Batles in the costing war: UK debates 1950-1975", *Accounting, Business & Financial Histories*, Vol. 13 No. 3, pp. 305-338.
- Dugdale, D., Jones, C. and Green, S. (2006), "*Contemporary Management Accounting Practices in UK Manufacturing*", London: CIMA.
- Duncan, R. B. (1972), "Characteristics of organizational environments and perceived environmental uncertainty", *Administrative Science Quarterly*, Vol. 17 No. 3, pp. 313-327.
- Dunk, A. S. (1992), "Reliance on budgetary control, manufacturing process automation and production sub-unit performance: a research note", *Accounting, Organizations and Society*, Vol. 17 No. 3/4, pp. 185-239.
- Dunk, A.S. (2004), "Product life cycle cost analysis: the impact of customer profiling, competitive advantage, and quality of IS information", *Management accounting research*, Vol. 15 No. 4, pp. 401-414.
- Edwards, R. S. (1937), "Some notes on the early literature and development of cost accounting in Great Britain", *The Accountant*, Vol. 97 (August-September): pp. 31-287.
- Easterby-Smith, M., Thorpe, R. and Lowe, A. (2002), *Management research*, 2<sup>nd</sup> edition, Sage Publications, London.
- Elmakis, D. and Lisnianski, A. (2006), "Life cycle cost analysis: Actual problem in industrial management", *Journal of Business Economics and Management*, Vol. 7 No. 1, pp. 5-8.
- Elnathan, D., Lin, T. W. and Young, S. (1996), "Benchmarking and management accounting: A framework for research", *Journal of Management Accounting Research*, Vol. 8, pp. 37-54.
- Environmental Protection Agency (EPA) (1995), "An introduction to environmental accounting as a business management tool: key concepts and terms", US Environmental Protection Agency, Office of Pollution Prevention and Toxics.
- Erzberger, C. and Kelle, U. (2003), "Making inferences in mixed methods: The rules of integration", *Handbook of mixed methods in social and behavioral research*, pp.457-488.

- Etikan, I., Musa, S.A. and Alkassim, R.S. (2016), "Comparison of convenience sampling and purposive sampling", *American journal of theoretical and applied statistics*, Vol. 5 No. 1, pp. 1-4.
- Ezzamel, M. (1990), "The impact of environmental uncertainty, managerial autonomy and size on budget characteristics", *Management Accounting Research*, Vol. 1 No. 3, pp. 181-197.
- Ezzamel, M., Lilley, S. and Willmott, H. (1993), "Changes in Management Practices in UK Companies", CIMA Research Report, London.
- Feigenbaum, A.V. (1956), "*Total quality control*", Harvard Business Review, p. 34.
- Fennell, M.L. (1980), "The effects of environmental characteristics on the structure of hospital clusters", *Administrative science quarterly*, Vol. 25 No. 3, pp. 485-510.
- Ferguson, T.D. and Ketchen, D.J. (1999), "Organizational configurations and performance: the role of statistical power in extant research", *Strategic Management Journal*, Vol. 20, pp. 385-395.
- Ferreira, M.A. and Matos, P. (2008), "The colors of investors' money: The role of institutional investors around the world", *Journal of Financial Economics*, Vol. 88 No.3, pp. 499-533.
- Feyerabend, P. (1990), *Farewell to Reason*, Verso, London.
- Firth, M. (1996), "The diffusion of managerial accounting procedures in the People's Republic of China and the influence of foreign partnered joint ventures", *Accounting, Organizations and Society*, Vol. 21 No. (7-8), pp. 629-654.
- Fisher, J. (1995), "Use of nonfinancial performance measures", in Young, S.M. (Ed.), *Reading in Management Accounting*, Prentice Hall, Englewood Cliffs, NJ.
- Flavel, R. and Williams, J. (1996), "*Strategic management: a practical approach*", Prentice Hall.
- Fleetwood, S. (2004), "*An ontology for organisation and management studies*", In: Fleetwood, S., Ackroyd, S. (Eds.), *Critical Realist Applications in Organisation and Management Studies*. Routledge, London.
- Fleetwood, S. (2005), "Ontology in organization and management studies: a critical realist perspective", *Organization*, Vol. 12 No. 2, pp. 197-222.
- Fleischman, R. K. and Tyson, T. N. (1998), "The Evolution of Standard Costing in the UK and US From Decision Making to Control", *Abacus*, Vol. 31 No. 1, pp. 92-119.
- Fligstein, N. (1985), "The Spread of the Multidivisional Form", *American Sociological Review*, Vol. 50, pp. 377-391.

- Foster, G. and Gupta, M. (1994), "Marketing, cost management and management accounting", *Journal of Management Accounting Research*, Vol. 6, pp. 43–77.
- Foster, G. and Gupta, M. (1997). The customer profitability implications of customer satisfaction. Available at SSRN 45941.
- Foster, G. and Swenson, D. W. (1997), "Measuring the success of activity based cost management and its determinants", *Journal of Management Accounting Research*, Vol. 9, pp. 109-142.
- Foster, G. and Young, S. M. (1997), "Frontiers of management accounting research", *Journal of Management Accounting Research*, Vol. 9, pp. 63–77.
- Francis, G. and Holloway, J. (2007), "What have we learned? Themes from the literature on best-practice benchmarking", *International Journal of Management Reviews*, Vol. 9 No. 3, pp. 171-189.
- Freeman, M. and Hobbs, J. (1991), "Capital budgeting: Theory versus practice", *Australian Accountant*, September, Vol. 6, pp. 36-41.
- Friedland, R. and Alford, R. R. (1991), "Bringing society back in: symbols, practices, and institutional contradictions", In W. W. Powell, & P. J. DiMaggio (Eds.), *The new institutionalism in organizational analysis*. Chicago: University of Chicago Press.
- Fullerton, R.R., Kennedy, F.A. and Widener, S.K. (2013), "Management accounting and control practices in a lean manufacturing environment", *Accounting, Organizations and Society*, Vol. 38 No. 1, pp. 50-71.
- Gao, T. and Gurd, B. (2015), "Meeting the challenge in performance management: the diffusion and implementation of the balanced scorecard in Chinese hospitals", *Health policy and planning*, Vol. 30 No. 2, pp. 234-241.
- Garcke, E. and Fells, J. (1887), "*Factory Accounts: Their Principles and Practice*", London: Crosby Lockwood and Son (4th edn reprinted, 1976 by Arno Press).
- Gendron, Y. and Barrett, M. (2004), "Professionalization in action: Accountants' attempt at building a network of support for the WebTrust Seal of Assurance", *Contemporary Accounting Research*, Vol. 21 No. 3, pp. 563-602.
- Ghosh, B.C. and Chan, Y. (1997), "Management accounting in Singapore - well in place?", *Managerial Auditing Journal*, Vol. 12 No. 1, pp. 16-18.
- Giddens, A. (1979), *Central Problems in Social Theory: Action, Structure and Contradiction in Social Analysis*, MacMillan, London.
- Gioia, D. and Pitre, E. (1990), "Multiparadigm perspectives on theory building", *Academy of management review*, Vol. 15 No. 4, pp. 584-602.



- Goles, T. and Hirschheim, R. (2000), "The paradigm is dead, the paradigm is dead... long live the paradigm: the legacy of Burrell and Morgan", *Omega*, Vol. 28 No. 3, pp. 249-268.
- Gordon, L. A. and Narayanan, V. K. (1984), "Management accounting systems, perceived environmental uncertainty and organization structure: an empirical investigation", *Accounting, Organizations and Society*, Vol. 1, pp. 33-47.
- Gosselin, M. (1997), "The effect of strategy and organizational structure on the adoption and implementation of activity-based costing", *Accounting, organizations and society*, Vol. 22 No. 2, pp. 105-122.
- Gosselin, M. (2006), "A review of activity-based costing: technique, implementation, and consequences", *Handbooks of management accounting research*, Vol. 2, pp. 641-671.
- Govindarajan, V. (1984), "Appropriateness of accounting data in performance evaluation: an empirical examination of environmental uncertainty as an intervening variable", *Accounting, organizations and society*, Vol. 9, pp. 125-135.
- Govindarajan, V. and Gupta, A.K. (1985), "Linking control systems to business unit strategy: impact on performance. In *Readings in accounting for management control* (pp. 646-668). Springer, Boston, MA.
- Granlund, M. (2001), "Towards explaining stability in and around management accounting systems", *Management Accounting Research*, Vol. 12 No. 2, pp. 141-166.
- Granlund, M. and Lukka, K. (1998), "It's a small world of management accounting practices", *Journal of Management Accounting Research*, Vol. 10, pp. 153-179.
- Greene, W. (2008), "*Econometric Analysis*", Upper Saddle River, New Jersey, Pearson.
- Groot, T.L.C.M. (1999), "Activity-based costing in US and Dutch food companies", *Advances in Management Accounting*, Vol. 7, pp. 47-63.
- Guba, E. (1990), "*The paradigm dialog*", Newbury Park, CA: Sage Publications.
- Guilding, C. (1992), "Should management accounting take up the brand valuation challenge", *Management Accounting*, Vol. 70 No. 6, pp. 44-45.
- Guilding, C. (1999), "Competitor-focused accounting: an exploratory note", *Accounting, Organizations and Society*, Vol. 24 No. 7, pp. 583-595.
- Guilding, C. and Godfrey, A. (1995), "An empirical investigation of the extent and nature of brand valuation activity in New Zealand", *Accounting & Finance*, Vol. 35 No. 2, pp. 119-134.
- Guilding, C. and Moorhouse, M. (1992), "The Case for Brand Value Budgeting", in C. Drury (ed.), *Management Accounting Handbook*, London: CIMA Publication.

- Guilding, C. and Pike, R. (1994), "Brand valuation: a model and empirical study of organisational implications", *Accounting and Business Research*, Vol. 24 No. 95, pp. 241-253.
- Guilding, C. and McManus, L. (2002), "The incidence, perceived merit and antecedents of customer accounting: an exploratory note", *Accounting, Organizations and Society*, Vol. 27 No. 1, pp. 45-59.
- Guilding, C., Cravens, K.S. and Tayles, M. (2000), "An international comparison of strategic management accounting practices", *Management Accounting Research*, Vol. 11 No. 1, pp. 113- 135.
- Gul, F. and Chia, Y. (1994), "The effects of management accounting systems, perceived environmental uncertainty and decentralization on managerial performance: a test of a three-way interaction", *Accounting, Organizations and Society*, Vol. 19 No. 4/5, pp. 413–426.
- Gupta, A.K. (1987), "SBU strategies, corporate-SBU relations, and SBU effectiveness in strategy implementation", *Academy of Management journal*, Vol. 30 No. 3, pp. 477-500.
- Gupta, A.K. and Govindarajan, V. (1984), "Business unit strategy, managerial characteristics, and business unit effectiveness at strategy implementation", *The Academy of Management Journal*, Vol. 27 No. 1, pp. 25-41.
- Gupta, S. and Lehmann, D. (2003), "Customers as assets", *Journal of Interactive Marketing*, Vol. 17 No. 1, pp. 9-24.
- Gupta, S., Lehmann, D.R. and Stuart, J.A. (2004), "Valuing customers", *Journal of marketing research*, Vol. 41 No. 1, pp. 7-18.
- Gupta, S. and Lehmann, D.R. (2006), "Customer lifetime value and firm valuation", *Journal of Relationship Marketing*, Vol. 5 No. (2-3), pp. 87-110.
- Gupta, S., Lehmann, D. and Stuart, J. (2004), "Valuing customers", *Journal of marketing research*, Vol. 41 No. 1, pp. 7-18.
- Hadid, W. and Al-Sayed, M. (2021), "Management accountants and strategic management accounting: The role of organizational culture and information systems", *Management Accounting Research*, 50, p.100725, available at: <https://doi.org/10.1016/j.mar.2020.100725>
- Hall, J. (2013), "Pragmatism, evidence, and mixed methods evaluation" (Special Issue: *Mixed methods and credibility of evidence in evaluation*). *New Directions for Evaluation*, 2013(138), 15- 26.

- Haldma, T. and Laats, K. (2002) “Contingencies Influencing the Management Accounting Practices of Estonian Manufacturing Companies”, *Management Accounting Research*, Vol. 13, No. 4, pp. 379-400.
- Hambrick, D.C. (2007), “Upper echelons theory: an update”, *Academy of Management Review*, Vol. 32 No. 2, pp. 334-343.
- Hambrick, D.C. and Manson, P.A. (1984), “Upper echelons: the organization as a reflection of its top managers”, *Academy of Management Review*, Vol. 9 No. 2, pp. 193-206.
- Hannan, M.T. and Freeman, J. (1977), “The population ecology of organizations”, *American journal of sociology*, Vol. 82 No. 5, pp. 929-964.
- Harrison, G.L. (1992), “The cross-cultural generalizability of the relation between participation, budget emphasis and job related attitudes”, *Accounting, Organizations and Society*, Vol. 17 No. 1, pp. 1-15.
- Hasan, M.T. and Akter, S. (2010), “Organizational Views to Implement the ABC system in Bangladesh”, *Cost and Management*, Vol. 43 No. 04, pp. 25-27.
- Hawley, A.H. (1968), “*Human ecology*”, pp. 37-328 in David L. Sills (ed.), *International Encyclopedia of the Social Sciences*, New York: McMillan.
- Hayes, D. (1977), “The Contingency Theory of Management Accounting”, *Accounting Review* (January, 1977), pp. 22-39.
- Hayes, A.F. and Cai, L. (2007), “Using heteroskedasticity-consistent standard error estimators in OLS regression: An introduction and software implementation”, *Behavior research methods*, Vol. 39 No. 4, pp. 709-722.
- Heagy, C.D. (1991), “Determining optimal quality costs by considering cost of lost sales”, *Journal of Cost Management*, Vol. 5 No. 3, pp. 64-72.
- Heinen, C. and Hoffjan, A. (2005), “The strategic relevance of competitor cost assessment: an empirical study of competitor accounting”, *Journal of Applied Management Accounting Research*, Vol. 3 No. 1, pp. 17-34
- Heinzelmann, R. (2017), "Accounting logics as a challenge for ERP system implementation: A field study of SAP ", *Journal of Accounting and Organizational Change*, Vol. 13 No. 2, pp. 162-187.
- Heinzelmann, R. (2019), “Digitalizing Management Accounting. In *Controlling–Aktuelle Entwicklungen und Herausforderungen* (pp. 207-226)”, Springer Gabler, Wiesbaden.

- Hendricks, K., Hora, M., Menor, L. and Wiedman, C. (2012), "Adoption of the balanced scorecard: A contingency variables analysis", *Canadian Journal of Administrative Sciences/Revue Canadienne des Sciences de l'Administration*, Vol. 29 No. 2, pp. 124-138.
- Hergert, M. and Morris, D. (1989), "Accounting data for value chain analysis", *Strategic Management Journal*, Vol. 10, pp. 175-188.
- Hesford, J.W. (2008), "An empirical investigation of accounting information use in competitive intelligence", *Journal of Competitive Intelligence and Management*, Vol. 4 No. 3, pp. 17-49.
- Heysford, J. (2001), "An Empirical Investigation of Accounting Information Use in Competitive Intelligence", Proceedings, American Accounting Association, Annual Meeting, Atlanta.
- Hiromoto, T. (1988), "Another hidden edge-Japanese management accounting", *Harvard Business Review*, Vol. 66 No. 4, pp. 22-26.
- Hirst, M. K. (1983), "Reliance on accounting performance measures, task uncertainty and dysfunctional behavior", *Journal of Accounting Research*, Vol. 21 No. 2, pp. 596-605.
- Hofstede, G. H. (1984), "The cultural relativity of the quality of life concept", *Academy of Management Review*, Vol. 27, pp. 389-398.
- Hopper, T. (2000), "Management Accounting in Less Developed Countries", *CIMA Research Update*, Autumn/Winter, pp. 6-7.
- Hopper, T. and Hoque, Z. (2006), "Triangulation approaches to accounting research", in Hoque, Z. (Ed.), *Methodological Issues in Accounting Research: Theories and Methods*, Spiramus, London, pp. 477-486.
- Hopper, T. and Major, M. (2007), "Extending institutional analysis through theoretical triangulation: regulation and activity-based costing in Portuguese telecommunications", *European Accounting Review*, Vol. 16 No. 1, pp. 59-97.
- Hopper, T. and Powell, A. (1985), "Making sense of research into the organizational and social aspects of management accounting: a review of its underlying assumptions", *Journal of Management Studies*, Vol. 22 No. 5, pp. 429-465.
- Hopper, T., Tsamenyi, M., Uddin, S. and Wickramasinghe, D. (2004) "The State They're In: Management Accounting in Developing Countries", *Financial Management*, CIMA, June, pp.14-19.
- Hoque, Z. (2001), *Strategic Management Accounting*, Chandos Publishing, Oxford.

- Hoque, Z. (2003), "Strategic management accounting: Concepts, Processes and Issues. (2nd ed.) London: Spiro Press.
- Hoque, Z. and James, W. (2000), "Linking balanced scorecard measures to size and market factors: impact on organizational performance", *Journal of management accounting research*, Vol. 12 No. 1, pp. 1-17.
- Hoque, Z. and Adams, C. (2011), "The rise and use of balanced scorecard measures in Australian government departments", *Financial Accountability & Management*, Vol. 27 No. 3, pp. 308-334.
- Hoque, Z. and Hopper, T. (1997), "Political and industrial relations turbulence, competition and budgeting in the nationalised jute mills of Bangladesh", *Accounting and Business Research*, Vol. 27 No. 2, pp. 125-143.
- Hoque, Z.L. and James, W. (1998), "Associating balanced scorecard performance reporting with size and market factors: Impact on organizational performance", *American Accounting Association*.
- Hoque, Z., Covaleski, M.A. and Gooneratne, T. (2013), "Theoretical triangulation and methodological pluralism in management accounting research", *Accounting, Auditing & Accountability Journal*, Vol. 26 No. 7, pp. 1170-1198.
- Horkheimer, M. (1982), "Critical Theory", New York: Seabury Press.
- Horngren, C.T. (1972), "Cost Accounting: A Managerial Emphasis", 3rd ed., Prentice Hall.
- Horngren, C. (2004), "Management Accounting: Some Comments", *Journal of Management Accounting Research*, Vol. 16, pp. 207-211.
- Hossain, D.M., Ahmad, N.N.N. and Siraj, S.A. (2017), "Power relationships in gender-related disclosures: exploring language in selected Fortune 500 companies' sustainability reports", *International Journal of Business Governance and Ethics*, Vol. 12 No. 3, pp. 262-288.
- Howieson, B., Hancock, P., Segal, N., Kavanagh, M., Tempone, I. and Kent, J. (2014), "Who should teach what? Australian perceptions of the roles of universities and practice in the education of professional accountants", *Journal of Accounting Education*, Vol. 32 No. 3, pp. 259-275.
- Huang, H.C., Lai, M.C., Kao, M.C. and Chen, Y.C. (2012), "Target costing, business model innovation, and firm performance: An empirical analysis of Chinese firms", *Canadian Journal of Administrative Sciences/Revue Canadienne des Sciences de l'Administration*, Vol. 29 No. 4, pp. 322-335.

- Hughes, A. M. (1997), "Customer retention: Integrating lifetime value into marketing strategies. *Journal of Database Marketing*, Vol. 5 No. 2, pp. 171-178.
- Huh, S., Yook, K.H. and Kim, I.W. (2008), "Relationship between organizational capabilities and performance of target costing: an empirical study of Japanese companies", *Journal of International Business Research*, Vol. 7 No. 1, pp. 91-107.
- Hussain, M. and Gunasekaran, A. (2002), "An institutional perspective of non-financial management accounting measures: a review of the financial services industry", *Managerial Auditing Journal*, Vol. 17 No. 9, pp. 518-536.
- Hussain, M. and Hoque, Z. (2002), "Understanding non-financial performance measurement practices in Japanese banks: A new institutional sociology perspective", *Accounting, Auditing & Accountability Journal*, Vol. 15 No. 2, pp. 162-183.
- Hussey, J. and Hussey, R. (1997), "*Business research. A practical guide for undergraduate and postgraduate students*", Houndsmills: Macmillan.
- Hyvonen, J. (2005), "Adoption and benefits of management accounting systems: evidence from Finland and Australia", *Advances in International Accounting*, Vol. 18, pp. 97-120.
- IFAC. (2013), "Roles and Importance of Professional Accountants in Business. Professional Accountants in Business—A Varied Profession", available at: <https://www.ifac.org/news-events/2013-10/roles-and-importance-professional-accountants-business> (accessed 27 January, 2019).
- IMF. (2008), "World Economic Outlook", available at: <https://www.imf.org/external/pubs/ft/weo/2008/02/pdf/text.pdf> (accessed 17.11.2020).
- Imoisili, O. A. (1985), "Task complexity, budget style of evaluating performance and managerial stress: an empirical investigation", Unpublished dissertation, Graduate School of Business, University of Pittsburgh.
- Innes, J. and Mitchell, F. (1990), "The process of change in management accounting: some field study evidence", *Management accounting research*, Vol. 1 No. 1, pp. 3-19.
- Innes, J. and Mitchell, F. (1995), "A survey of activity-based costing in the UK's largest companies", *Management accounting research*, Vol. 6 No. 2, pp. 137-153.
- Innes, J., Mitchell, F. and Sinclair, D. (2000), "Activity-based costing in the UK's largest companies: a comparison of 1994 and 1999 survey results", *Management accounting research*, Vol. 11 No. 3, pp. 349-362.
- International Federation of Accountants (IFAC). (1998), "International management accounting practice statement: Management Accounting Concepts", New York.

- Iotti, M. and Bonazzi, G. (2014), "The application of Life Cycle Cost (LCC) approach to quality food production: A comparative analysis in the Parma PDO ham sector", *American Journal of Applied Sciences*, Vol. 11 No. 9, pp.1492-1506.
- Isa, C.R. and Foong, S.Y. (2005), "Adoption of advanced manufacturing technology (AMT) and management accounting practices: the case of manufacturing firms in Malaysia", *World Review of Science, Technology and Sustainable Development*, Vol. 2 No. 1, pp. 35-48.
- Israelsen, P., Anderson, M., Rhode, C. and Sorensen, P. E. (1996), "Management Accounting in Denmark: Theory and Practice", In A. Bhimani (ed.), *Management Accounting: European Perspectives*, 3–53. Oxford: Oxford University Press.
- Ittner, C.D. and Larcker, D.F. (1995), "Total quality management and the choice of information and reward systems", *Journal of accounting research*, Vol. 33, pp. 1-34.
- Ittner, C. D. and Larcker, D. F. (1997), "Quality strategy, strategic control systems, and organizational performance", *Accounting, Organizations, and Society*, Vol. 22 No. (3/4), pp. 295-314.
- Ittner, C.D. and Larcker, D.F. (1998), "Are nonfinancial measures leading indicators of financial performance? An analysis of customer satisfaction", *Journal of accounting research*, Vol. 36, pp. 1-35.
- Ittner, C.D., Larcker, D.F. and Rajan, M.V. (1997), "The choice of performance measures in annual bonus contracts", *Accounting Review*, Vol. 72 No. 2, pp. 231-255.
- Ittner, C.D., Lanen, W.N. and Larcker, D.F. (2002), "The association between activity-based costing and manufacturing performance", *Journal of accounting research*, Vol. 40 No. 3, pp. 711-726.
- Jain, D. and Singh, S.S. (2002), "Customer lifetime value research in marketing: A review and future directions", *Journal of interactive marketing*, Vol. 16 No. 2, pp. 34-46.
- Jankala, S. and Silvola, H. (2012), "Lagging effects of the use of activity-based costing on the financial performance of small firms", *Journal of Small Business Management*, Vol. 50 No. 3, pp. 498-523.
- Jarvenpaa, M. (1998), "Management Accounting and strategy. Functional and Institutional perspectives; A case study", *Proceedings, Asia Pacific Interdisciplinary Research in Accounting Conference, Osaka, Japan*.
- Jaworski, B.J. and Kohli, A.K. (1993), "Market orientation: antecedents and consequences", *Journal of marketing*, Vol. 57 No. 3, pp. 53-70.

- Joh, S.W. (2003), "Corporate governance and firm profitability: evidence from Korea before the economic crisis", *Journal of Financial Economics*, Vol. 68 No. 2, pp. 287-322.
- Johannesson, P. and Perjons, E. (2014), "*An introduction to design science*". Springer, Switzerland.
- Johnson, H. T. (1992), "Relevance Regained: From Top-Down to Bottom-Up Empowerment", The Free Press.
- Johnson, H., and Kaplan, R. (1987), "Relevance Lost: *The Rise and Fall of Management Accounting*", Harvard Business School Press, Boston.
- Johnson, J.L., Daily, C.M. and Ellstrand, A.E. (1996), "Boards of directors: A review and research agenda", *Journal of management*, Vol. 22 No. 3, pp. 409-438.
- Jones, L. (1988), "Competitor cost analysis at Caterpillar", *Management Accounting (US)*, October, pp. 32-38.
- Joshi, P.L. (2001), "The international diffusion of new management accounting practices: the case of India", *Journal of International Accounting, Auditing and Taxation*, Vol. 10 No. 1, pp. 85-109.
- Joshi, P.L., Bremser, W.G., Deshmukh, A. and Kumar, R. (2011), "Diffusion of management accounting practices in gulf cooperation council countries", *Accounting Perspectives*, Vol. 10 No. 1, pp. 23-53.
- Jui, L. and Wong, J. (2013), "Roles and importance of professional accountants in business", available at: <https://www.ifac.org/about-ifac/professional-accountants-business/news-events/2013-10/roles-and-importance-professional> (accessed 27 January, 2019).
- Juran, J.M. (1951), "Quality Control Handbook", 1st ed., McGraw-Hill, New York, NY.
- Kaasa, A. and Vadi, M. (2008), "How does culture contribute to innovation? Evidence from European countries", *University Of Tartu-Faculty of Economics & Business Administration Working Paper Series*, (63).
- Kallunki, J.P. and Silvola, H. (2008), "The effect of organizational life cycle stage on the use of activity-based costing", *Management accounting research*, Vol. 19 No. 1, pp. 62-79.
- Kano, N. (1986), "Quality and economy more emphasize the role of quality on sales rather than on cost", *Quality costs: ideas and applications*, Vol. 2, pp. 331-345.
- Kanter, R.M. (1977), *Men and Women of the Corporation*. New York: Basic Books.
- Kao, M.F., Hodgkinson, L. and Jaafar, A. (2018), "Ownership structure, board of directors and firm performance: evidence from Taiwan", *Corporate Governance: The International Journal of Business in Society*. Vol. 19 No. 1, pp.189-216.



- Kapferer, J.N. (1998), “*Strategic Brand Management: Creating and Sustaining Brand Equity Long Term*”, Upper Saddle River, NJ: Prentice Hall.
- Kaplan, D. (1965), “The superorganic: science or metaphysics”, *American Anthropologist*, Vol. 67, pp. 958–976.
- Kaplan, R. S. (1983), “Measuring manufacturing performance: a new challenge for managerial accounting research. In *Readings in accounting for management control* (pp. 284-306). Springer, Boston, MA.
- Kaplan, R.S. (1984), “Yesterdays accounting undermines production”, *Harvard business review*, Vol. 62 No. 4, pp. 95-101.
- Kaplan, R. (1985), “Accounting lag: the obsolescence of cost accounting systems (chapter 5)”, In K. Clark, R. Hayes, & C. Lorenz, *The Uneasy Alliance: Managing the productivity-technology dilemma* (pp. 195-226). Boston: Harvard Business School Press.
- Kaplan, R.S. (1994), “Flexible budgeting in an activity-based costing framework”, *Accounting Horizons*, Vol. 8 No. 2, pp. 104.
- Kaplan, R. S. (1998), “Innovation action research: creating new management theory and practice”, *Journal of Management Accounting Research*, Vol. 10, pp. 89-118.
- Kaplan, R.S. (2009), “Conceptual foundations of the balanced scorecard”, *Handbooks of management accounting research*, Vol. 3, pp. 1253-1269.
- Kaplan, R.S. and Anderson, S.R. (2004), “Time-driven activity-based costing”, *Harvard Business Review*, November, pp. 1-18.
- Kaplan, R. S. and Norton, D.P. (1992), “The Balanced Scorecard: measures that drive performance”, *Harvard Business Review*, January–February, pp. 71 – 79.
- Kaplan, R.S. and Norton, D.P. (1996), “Linking the balanced scorecard to strategy”, *California management review*, Vol. 39 No. 1, pp. 53-79.
- Kaplan, R.S. and Norton, D.P. (2001), “The strategy-focused organization”, *Strategy and Leadership*, Vol. 29 No. 3, pp. 41-42.
- Karl, T. R. and Trenberth, K. E. (2003), “Modern global climate change”, *Science*, Vol. 302 No. 5651, pp. 1719-1723.
- Karlsson, B., Hersinger, A. and Kurkkio, M. (2019), “Hybrid accountants in the age of the business partner: exploring institutional drivers in a mining company”, *Journal of Management Control*, Vol. 30 No. 2, pp. 185-211.
- Kato, Y. (1993), “Target costing support systems: lessons from leading Japanese companies”, *Management accounting research*, Vol. 4, pp. 33-47.

- Kaushik, V. and Walsh, C.A. (2019), "Pragmatism as a research paradigm and its implications for social work research", *Social Sciences*, Vol. 8 No. 9, pp. 255-272. Doi:10.3390/socsci8090255
- Keller, K. L. (1998), "*Strategic Brand Management: Building, Measuring and Managing Brand Equity*", Upper Saddle River, NJ: Prentice Hall.
- Kelly, S. (2010), "Qualitative interviewing techniques and styles", In: Bourgeault I, Dingwall R and de Vries R (eds) *The Sage Handbook of Qualitative Methods in Health Research*, Thousand Oaks: Sage Publications.
- Kesner, I.F. (1987), "Directors' stock ownership and organizational performance: An investigation of Fortune 500 companies", *Journal of management*, Vol. 13 No. 3, pp. 499-508.
- Ketchen, D.J., Thomas, J.B. and Snow, C.C. (1993), "Organizational configurations and performance: a comparison of theoretical approaches", *Academy of Management Journal*, Vol. 36, pp. 1278-1313.
- Khan, H.U.Z., Halabi, A.K. and Masud, M.Z. (2010), "Empirical study of the underlying theoretical hypotheses in the balanced scorecard (bsc) model: Further evidence from Bangladesh", *Asia-Pacific Management Accounting Journal*, Vol. 5 No. 2, pp. 45-73.
- Khan, H., Halabi, A.K. and Sartorius, K. (2011), "The use of multiple performance measures and the balanced scorecard (BSC) in Bangladeshi firms: An empirical investigation", *Journal of Accounting in Emerging Economies*, Vol. 1 No. 2, pp. 160-190.
- Khandwalla, P. (1972), "The effects of different types of competition on the use of management controls", *Journal of Accounting Research*, Autumn, pp. 275–285.
- Khandwalla, P. (1977), "Design of organizations", New York: Harcourt Brace Jovanovich.
- Khanna, T. and Palepu, K. (2000), "Emerging market business groups, foreign intermediaries, and corporate governance", In *Concentrated corporate ownership* (pp. 265-294). University of Chicago Press. <available at: <https://www.nber.org/chapters/c9012.pdf>>
- Kiani, R. and Sangeladji, M. (2003), "An empirical study about the use of the ABC/ABM models by some of the Fortune 500 largest industrial corporations in the USA", *Journal of American Academy of Business*, Vol. 3, pp. 174–182.
- Kim, S.Y., Jung, T.S., Suh, E.H. and Hwang, H.S. (2006), "Customer segmentation and strategy development based on customer lifetime value: A case study", *Expert systems with applications*, Vol. 31 No. 1, pp. 101-107.

- Kimberly, J.R. (1980), "Initiation, innovation, and institutionalization in the creation process", *The organizational life cycle: Issues in the creation, transformation, and decline of organizations*, pp.18-43, San Francisco.
- Knauer, T. and Möslang, K. (2018), "The adoption and benefits of life cycle costing", *Journal of Accounting & Organizational Change*, Vol. 14 No. 2, pp. 188-215
- Kotler, P., Armstrong, G., Saunders, J. and Wong, V. (1999), "Principles of Marketing, 2nd edn, London: Prentice Hall Europe.
- Kraus, K. and Lind, J. (2010), "The impact of the corporate balanced scorecard on corporate control—A research note", *Management Accounting Research*, Vol. 21 No. 4, pp. 265-277.
- Krueger, J.S. and Lewis-Beck, M.S. (2008), "Is ols dead?", *The Political Methodologist*, Vol. 15 No. 2, pp. 2-4.
- Krumwiede, K. R. (1998), "The implementation stages of activity-based costing and the impact of contextual and organizational factors", *Journal of Management Accounting Research*, Vol. 10, pp. 240-277.
- Kumar, K., Shah, R. and Fitzroy, P.T. (1998), "A review of quality cost surveys", *Total Quality Management*, Vol. 9 No. 6, pp. 479-486.
- Lachmann, M., Knauer, T. and Trapp, R. (2013), "Strategic management accounting practices in hospitals: Empirical evidence on their dissemination under competitive market environments", *Journal of Accounting & Organizational Change*, Vol. 9 No. 3, pp. 336-369.
- Lambert, A. R. (2007), "Agency theory and Management Accounting", *Handbook of Management Accounting Research*, Vol. 1, pp. 247–267.
- Lancaster, K.J. (1966), "A new approach to consumer theory", *Journal of political economy*, Vol. 74 No. 2, pp. 132-157.
- Langfield-Smith, K. (1997), "Management control systems and strategy: a critical review", *Accounting, organizations and society*, Vol. 22 No. 2, pp. 207-232.
- Langfield-Smith, K. (2008), "Strategic management accounting: how far have we come in 25 years?", *Accounting, Auditing and Accountability Journal*, Vol. 21 No. 2, pp. 204-228.
- Lapsley, I. and Wright, E. (2004), "The diffusion of management accounting innovations in the public sector: a research agenda", *Management Accounting Research*, Vol. 15 No. 3, pp. 355-74.

- Larson, M.S. (1977), *“The rise of professionalism: A sociological analysis”*, Berkeley, University of California Press.
- Lascelles, D.M. and Dale, B.G. (1990), “The key issues of a quality improvement process”, *The International Journal of Production Research*, Vol. 28 No. 1, pp. 131-143.
- Lasyoud, A.A., Haslam, J. and Roslender, R. (2018), “Management accounting change in developing countries: evidence from Libya”, *Asian Review of Accounting*, Vol. 26 No. 3, pp. 278-313.
- Latour B. (1987), *“Science in Action: How to Follow Scientists and Engineers through Society*. Cambridge, Mass: Harvard University Press.
- Law J. (2007), “Actor Network Theory and the Material Semiotics”, available at <http://www.heterogeneties.net/publications/Law2007ANTandMaterialSemiotics.pdf>.
- Lawrence, T.B. and Suddaby, R. (2006), “Institutions and institutional work”, in Clegg, S., Hardy, C., Lawrence, T. and Nord, W.R. (Eds), *Handbook of Organization Studies*, Vol. 2, Sage, London, pp. 215-54.
- Lawrence, P. and Lorsch, J. (1967), “Organization and environment”, Homewood, Ill: Irwin.
- Leftesi, A. (2008), *“The diffusion of management accounting practices in developing countries: evidence from Libya”* (Doctoral dissertation, University of Huddersfield).
- Lemmon, M.L. and Lins, K.V. (2003), “Ownership structure, corporate governance, and firm value: Evidence from the East Asian financial crisis”, *The journal of finance*, Vol. 58 No. 4, pp. 1445-1468.
- Lin, Z. and Yu, Z. (2002) “Responsibility Cost Control System in China: a Case of Management Accounting Application”, *Management Accounting Research*, Vol. 13, No. 4, pp. 447–467.
- Lincoln, Y.S. (2010), “What a long, strange trip it’s been...”: Twenty-five years of qualitative and new paradigm research”, *Qualitative inquiry*, Vol. 16 No. 1, pp. 3-9.
- Llach, J., Bagur, L., Perramon, J. and Marimon, F. (2017), "Creating value through the balanced scorecard: how does it work?", *Management Decision*, Vol. 55 No. 10, pp. 2181-2199.
- Lord, B.R. (1996), “Strategic management accounting: the emperor's new clothes?”, *Management accounting research*, Vol. 7 No. 3, pp. 347-366.
- Lorenz, A. (2015), “Contemporary management accounting in the UK service sector” (Doctoral dissertation, University of Gloucestershire).

- Lounsbury, M. (2008), "Institutional rationality and practice variation: new directions in the institutional analysis of practice", *Accounting, Organizations and Society*, Vol. 33, pp. 349-361.
- Lowe, A. (2001), "Accounting information systems as knowledge-objects: some effects of objectualization", *Management Accounting Research*, Vol. 12 No. 1, pp. 75-100.
- Lowry, J. (1990), "Management Accounting and Service Industries: An exploratory Account of Historical and Current Economic Contexts", *ABACUS*, Vol. 26 No. 2, pp. 159-184.
- Lukka, K. and Granlund, M. (1996), "Cost accounting in Finland: current practice and trends of development", *European Accounting Review*, Vol. 5 No. 1, pp. 1-28.
- Luo, X. and Bhattacharya, C.B. (2006), "Corporate social responsibility, customer satisfaction, and market value", *Journal of marketing*, Vol. 70 No. 4, pp. 1-18.
- Luther, R. and Longden, S. (2001) "Management Accounting in Companies Adapting to Structural Change and Volatility in Transition Economies: a South African study", *Management Accounting Research*, Vol. 12, No. 3, pp. 299-320
- Ma, Y. and Tayles, M. (2009), "On the emergence of strategic management accounting: an institutional perspective", *Accounting and Business Research*, Vol. 39 No. 5, pp. 473-495.
- Macintosh, N. and Daft, R. L. (1987), "Management control systems and departmental interdependencies: an empirical study", *Accounting, Organizations and Society*, pp. 23-48.
- Macintosh, N.B. and Scapens, R.W. (1990), "Structuration theory in management accounting", *Accounting, Organizations and Society*, Vol. 15 No. 5, pp. 455-477.
- Madison, R. and Power, J. (1993), "A review of implementing activity-based cost management: moving from analysis to action", *News and Views*, Management Accounting Chapter, American Accounting Association, Spring, 9.
- Malagueno, R., Lopez-Valeiras, E. and Gomez-Conde, J. (2018), "Balanced scorecard in SMEs: effects on innovation and financial performance", *Small Business Economics*, Vol. 51 No. 1, pp. 221-244.
- Malmi, T. (1999), "Activity-based costing diffusion across organizations: an exploratory empirical analysis of Finnish firms", *Accounting, organizations and society*, Vol. 24 No. 8, pp. 649-672.
- Malmi, T. (2001), "Balanced scorecards in Finnish companies: A research note", *Management accounting research*, Vol. 12 No. 2, pp. 207-220.

- Malmi, T. and Granlund, M. (2009), "In Search of Management Accounting Theory", *European Accounting Review*, Vol. 18 No. 3, pp. 597–620.
- March, A. and Kaplan, R. (1987), "John Deere Component Works", Harvard Business School Case, pp.187-107.
- Marr, B. (2018), "The 4th Industrial Revolution Is Here - Are You Ready?", available at: <https://www.forbes.com/sites/bernardmarr/2018/08/13/the-4th-industrial-revolution-is-here-are-you-ready/#40c624cf628b> (accessed February 29, 2020).
- Marsh, J. (1989), "Process modeling for quality improvement", *Proceedings of the Second International Conference on Total Quality Management*, pp.111.
- Mason, J. (2002), *Qualitative researching*, 2nd ed. London: Sage.
- Maxcy, S. J. (2003), "Pragmatic threads in mixed methods research in the social sciences: The search for multiple modes of inquiry and the end of the philosophy of formalism", In *Handbook of Mixed Methods in Social and Behavioral Research*, Edited by Abbas Tashakkori and Charles Teddlie, Thousand Oaks: Sage, pp. 51–89.
- McNamara, C., Baxter, J. and Chua, W.F. (2004), "Making and managing organisational knowledge (s)", *Management Accounting Research*, Vol. 15 No. 1, pp. 53-76.
- Merchant, K.A. (1981), "The design of the corporate budgeting system: influences on managerial behavior and performance", *Accounting Review*, Vol. 56 No. 4, pp. 813-829.
- Merchant, K.A. (1990), "The effects of financial controls on data manipulation and management myopia", *Accounting, Organizations and Society*, Vol. 15, pp. 297-313.
- Meyer, J.W. (1979), "The Impact of the Centralization of Educational Funding and Control on State and Local Organizational Governance", Stanford, CA: Institute for Research on Educational Finance and Governance, Stanford University, Program Report No. 79-B20.
- Meyer, M. (1981), "Persistence and change in bureaucratic structures", In annual meeting of the American Sociological Association, Toronto, Canada.
- Meyer, J.W. and Rowan, B. (1977), "Institutionalized organizations: formal structure as Myth and Ceremony", *The American Journal of Sociology*, Vol. 83 No. 2, pp. 340-363.
- Meyer, J.W. and Scott, W.R. (1992), "Preface", in Meyer, J.W. and Scott, W.R. (Eds), *Organizational Environments: Ritual and Rationality*, Sage, London, pp. 7-12.
- Mia, L. (2000), "Just-in-time manufacturing, management accounting systems and profitability", *Accounting and Business Research*, Vol. 30 No. 2, pp. 137-151.

- Mia, L. and Chenhall, R. H. (1994), "The usefulness of management accounting systems, functional differentiation and managerial effectiveness", *Accounting, Organizations and Society*, Vol. 19 No. 1, pp. 1–13.
- Mia, L. and Clarke, B. (1999), "Market competition, management accounting systems and business unit performance", *Management Accounting Research*, Vol. 10 No. 2, pp. 137-158.
- Michaels, J.V. and Wood, W.P. (1989), "Design to cost", (Vol. 3), John Wiley & Sons.
- Miles, M. and Huberman, A. (1994), *An expanded sourcebook: Qualitative data analysis*, 2nd ed. Thousand Oaks: Sage Publications.
- Miles, R.E. and Snow, C.G. (1978), *Organizational Strategy, Structure, and Process*, McGraw-Hill, New York, NY.
- Miller, D. and Friesen, P.H. (1982), "Innovation in conservative and entrepreneurial firms: Two models of strategic momentum", *Strategic management journal*, Vol. 3 No. 1, pp. 1-25.
- Mintzberg, H. (1987), "The strategy concept I: Five Ps for strategy", *California Management Review*, Vol. 30, pp. 11–24.
- Mintzberg, H. and Lampel, J. (1999), "Reflecting on the strategy process", *MIT Sloan Management Review*, Vol. 40 No. 3, pp. 21–30.
- Mintzberg, H. and Quinn, J.B. (1991), *The Strategy Process: Concepts, Contexts and Cases*", second ed. Prentice-Hall, Englewood Cliffs, New Jersey.
- Mintzberg, H., Quinn, J. B. and Voyer, J. (1995), "The strategy process", Englewood Cliffs, NJ: Prentice-Hall.
- Modell, S. (1996), "Management accounting and control in services: structural and behavioural perspectives", *International Journal of Service Industry Management*, Vol. 7 No. 2, pp. 57-80.
- Modell, S. (2005), "Triangulation between case study and survey methods in management accounting research: An assessment of validity implications", *Management accounting research*, Vol. 16 No. 2, pp. 231-254.
- Modell, S. (2009), "In defence of triangulation: a critical realist approach to mixed methods research in management accounting", *Management Accounting Research*, Vol. 20 No. 3, pp. 208-221.
- Moll, J., Burns, J. and Major, M. (2006), "Institutional theory", in Hoque, Z. (Ed.), *Methodological Issues in Accounting Research: Theories, Methods and Issues*, Spiramus, London, pp. 183-205.

- Monden, Y. (1995), "*Cost Reduction Systems: Target Costing and Kaizen Costing*", Productivity Press, Oregon.
- Monden, Y. and Hamada, K. (1991), "Target costing and kaizen costing in Japanese automobile companies", *Journal of Management Accounting Research*, Vol. 3 No. 1, pp. 16-34.
- Money, R.B. and Crotts, J.C. (2003), "The effect of uncertainty avoidance on information search, planning, and purchases of international travel vacations", *Tourism Management*, Vol. 24 No. 2, pp. 191-202.
- Moon, P. and Bates, K. (1993), "Core analysis in strategic performance appraisal", *Management Accounting Research*, Vol. 4 No. 2, pp. 139-152.
- Morgan, D. L. (2014a), "Pragmatism as a paradigm for social research", *Qualitative inquiry*, Vol. 20 No. 8, pp. 1045-1053.
- Morgan, D. L. (2014b), "*Integrating Qualitative and Quantitative Methods: A Pragmatic Approach*", Thousand Oaks: Sage.
- Mouritsen, J, Larsen, H.T. and Bukh, P.N.D. (2001), "Intellectual Capital and the 'Capable Firm': Narrating, visualising and numbering for managing knowledge", *Accounting, Organizations and Society*, Vol. 26 No. 7-8, pp. 735-762.
- Mulhern, F.J. (1999), "Customer profitability analysis: Measurement, concentration, and research directions", *Journal of interactive marketing*, Vol. 13 No. 1, pp. 25-40.
- Murray, M.A., Zimmermann, R.A. and Flaherty, D.J. (1997), "Can benchmarking give you a competitive edge?", *Management Accounting (USA)*, Vol. 79 No. 2, pp. 46-50.
- Murthy, D.N.P. and Blischke, W.R. (2000), "Strategic warranty management: A life-cycle approach", *IEEE Transactions on Engineering Management*, Vol. 47 No. 1, pp. 40-54.
- Musharof, M., Ahmmed, M., Hossain, E. and Golam, M.K. (2020), "Management accounting practices by some selected manufacturing enterprises enlisted in Chittagong stock exchange, Bangladesh: an evaluation", *Journal of Asian Business Strategy*, Vol. 10 No.1, pp. 159-171.
- Meyer, J.W. (1979), "*The Impact of the Centralization of Educational Funding and Control on State and Local Organizational Governance*", Stanford, CA: Institute for Research on Educational Finance and Governance, Stanford University, Program Report No. 79-B20.
- Meyer, M. (1981), "Persistence and change in bureaucratic structures", In annual meeting of the American Sociological Association, Toronto, Canada.



- Myers, R. H. (1990), “*Classical and modern regression with applications*”, (No. 04; QA278. 2, M8, Boston, MA: Duxbury.
- Meyer, J.W. and Rowan, B. (1977), “Institutionalized organizations: formal structure as Myth and Ceremony”, *The American Journal of Sociology*, Vol. 83 No. 2, pp. 340-363.
- Meyer, J.W. and Scott, W.R. (1992), “Preface”, in Meyer, J.W. and Scott, W.R. (Eds), *Organizational Environments: Ritual and Rationality*, Sage, London, pp. 7-12.
- Nanni, a., Dixon, R. and Vollmann, T. (1992), “Integrated Performance Measurement: Management Accounting to Support the New Manufacturing Realities”, *Journal of Management Accounting Research*, Vol. 4 No. 1, pp. 1-19.
- Napier, C.J. (2006), “Accounts of change: 30 years of historical accounting research”, *Accounting, Organizations and Society*, Vol. 31Nos. 4-5, pp. 445-507.
- Narayanan, V.G. and Sarkar, R.G. (1999), “ABC at insteel industries”, Working Paper 7270 <http://www.nber.org/papers/w7270>.
- Narayanan, V.G. and Sarkar, R.G. (2002), “The Impact of Activity-Based Costing on Managerial Decisions at Insteel Industries-A Field Study”, *Journal of Economics & Management Strategy*, Vol. 11 No. 2, pp. 257-288.
- Narver, J.C. and Slater, S.F. (1990), “The effect of a market orientation on business profitability”, *Journal of marketing*, Vol. 54 No. 4, pp. 20-35.
- Nicholson, G.J. and Kiel, G.C. (2007), “Can directors impact performance? A case-based test of three theories of corporate governance”, *Corporate Governance: An International Review*, Vol. 15 No. 4, pp. 585-608.
- Nilson, T.N. (1998), “*Competitive Branding: Winning in the Market Place with Value-Added Brands*”, Chichester: Wiley.
- Niraj, R., Gupta, M. and Narasimhan, C. (2001), “Customer profitability in a supply chain”, *Journal of marketing*, Vol. 65 No. 3, pp. 1-16.
- Nisha, N. (2017), “An Empirical Study of the Balanced Scorecard Model: Evidence from Bangladesh”, *Decision Management: Concepts, Methodologies, Tools, and Applications*, edited by Information Resources Management Association, IGI Global, 2017, pp. 838-855.
- Nixon, B., Burns, J. and Jazayeri, M. (2011), “The role of management accounting in new product design and development decisions”, *CIMA Research Executive Summary Series*, Vol. 9 No. 1, pp. 1-7.
- Nixon, B. and Burns, J. (2012), “The paradox of strategic management accounting”, *Management Accounting Research*, Vol. 23 No. 4, pp. 229-244.

- Noone, B. and Griffin, P. (1999), "Managing the long-term profit yield from market segments in a hotel environment: a case study on the implementation of customer profitability analysis", *International Journal of Hospitality Management*, Vol. 18 No. 2, pp. 111-128.
- Norreklit, H. and Mitchell, F. (2007), "The balanced scorecard", In T. Hopper, D. Northcott, & R. Scapens, *Issues in management accounting*, 3rd Ed (pp. 175-198). Harlow, Essex: Pearson education.
- Norris, G.W.E.N.E.T.H. (2002), "Chalk and cheese: grounded theory case studies of the introduction and usage of activity-based information in two British banks", *The British Accounting Review*, Vol. 34 No. 3, pp. 223-255.
- Nuhu, N.A., Baird, K. and Bala Appuhamilage, A. (2017), "The adoption and success of contemporary management accounting practices in the public sector", *Asian Review of Accounting*, Vol. 25 No. 1, pp. 106-126.
- Oboh, C. S. and Ajibolade, S. O. (2017), "Strategic management accounting and decision making: A survey of the Nigerian Banks", *Future Business Journal*, Vol. 3 No. 2, pp. 119-137.
- O'Connell, B., Ciccotosto, S. and De Lange, P. (2014), "Understanding the application of Actor-Network Theory in the process of accounting change", available at: <https://researchonline.jcu.edu.au/34366/3/34366%20O%27Connell%20et%20al%20014.pdf>
- O'Connor, N.G. (1995), "The influence of organizational culture on the usefulness of budget participation by Singaporean-Chinese managers", *Accounting, Organizations and Society*, Vol. 20 No. 5, pp. 383-403.
- O'Connor, N., Chow, C. and Wu, A. (2004), "The Adoption of 'Western' Management Accounting/controls in China's State-owned Enterprises during Economic Transition", *Accounting, Organizations and Society*, Vol. 29, No. 3/4, pp. 349-375.
- O'Connor, N.G., Vera-Munoz, S.C. and Chan, F. (2011), "Competitive forces and the importance of management control systems in emerging-economy firms: The moderating effect of international market orientation", *Accounting, Organizations and Society* Vol. 36 No. 4-5, pp. 246-266.
- O'Neill, H.M., Pouders, R.W. and Buchholtz, A.K. (1998), "Patterns in the diffusion of strategies across organizations: Insights from the innovation diffusion literature", *Academy of Management Review*, Vol. 23 No. 1, pp. 98-114.

- Oliver, C. (1991), "Strategic responses to institutional processes", *Academy of Management Review*, Vol. 16 No. 1, pp. 145-179.
- Olubodun, F., Kangwa, J., Oladapo, A. and Thompson, J. (2010), "An appraisal of the level of application of life cycle costing within the construction industry in the UK", *Structural Survey*, Vol. 28 No. 4, pp. 254-265.
- Oppenheim, A. (1992), "*Questionnaire Design, Interviewing and Attitude Measurement*", Printer Publishers, New York.
- Otley, D.T. (1978), "Budget Use and Managerial Performance", *Journal of Accounting Research*, Vol. 16 No. 1, pp. 122-149.
- Otley, D. (1980), "The contingency theory of management accounting achievement and prognosis", *Accounting, organizations and society*, Vol. 5 No. 4, pp. 413-428.
- Otley, D. (1994), "Management control in contemporary organizations: towards a wider framework", *Management accounting research*, Vol. 5 Nos. (3-4), pp. 289-299.
- Otley, D. (1999), "Performance management: a framework for management control systems research", *Management accounting research*, Vol. 10 No. 4, pp. 363-382.
- Otley, D. (2016), "The contingency theory of management accounting and control: 1980-2014", *Management accounting research*, Vol. 31, pp. 45-62.
- Ouchi, W. (1979), "A conceptual framework for the design of organizational control mechanisms", *Management Science*, Vol. 25 No. 9, pp. 833-848.
- Palinkas, L.A., Horwitz, S.M., Green, C.A., Wisdom, J.P., Duan, N. and Hoagwood, K. (2015), "Purposeful sampling for qualitative data collection and analysis in mixed method implementation research", *Administration and policy in mental health and mental health services research*, Vol. 42 No. 5, pp. 533-544.
- Palmer, R. J. (1992), "Strategic goals and objectives and the design of strategic management accounting systems", *Advances in Management Accounting*, Vol. 1, pp. 179-204.
- Parker, R. (1969), "*Management Accounting, an Historical Perspective*", London: MacMillan.
- Pasch, T. (2019), "Organizational lifecycle and strategic management accounting", *Journal of Accounting & Organizational Change*, Vol. 15 No. 4, pp. 580-604.
- Pavlatos, O. and Paggios, I. (2009). A survey of factors influencing the cost system design in hotels. *International Journal of Hospitality Management*, Vol. 28 No. 2, pp. 263-271.
- Pavlatos, O. and Kostakis, X. (2018), "The impact of top management team characteristics and historical financial performance on strategic management accounting", *Journal of Accounting and Organizational Change*, Vol. 14 No. 4, pp. 455-472.

- Pere, T. (1999), "Strategian toteutumisen seuranta Suomessa sijaitsevilla suuryrityksissä. (How the execution of strategy is followed in large organizations located in Finland.) Masters Thesis, Helsinki School of Economics and Business Administration.
- Perera, S., Harrison, G. and Poole, M. (1997), "Customer focused manufacturing strategy and the use of operations based nonfinancial performance measures: a research note", *Accounting, Organizations and Society*, Vol. 22 No. 6, pp. 557-572.
- Perrow, C. (1970), "*Organizational analysis: a sociological view*", California: Wadsworth Publishing Company.
- Perrow, C. (1974), "Is business really changing?", *Organizational Dynamics* Summer: pp. 31-44.
- Pfeffer, J. (1993), "Barriers to the advance of organizational science: paradigm development as a dependent variable", *Academy of Management Review*, Vol. 18 No. 4, pp. 599-620.
- Pfeifer, P.E., Haskins, M.E. and Conroy, R.M. (2005), "Customer lifetime value, customer profitability, and the treatment of acquisition spending", *Journal of managerial issues*, Vol. 17 No. 1, pp.11-25.
- Pitcher, G.S. (2015), "*Management accounting in support of the strategic management process*", available at:  
[https://www.cimaglobal.com/Documents/Thought\\_leadership\\_docs/Management%20and%20financial%20accounting/Academic-Research-Report-Strategic-Management-Process.pdf](https://www.cimaglobal.com/Documents/Thought_leadership_docs/Management%20and%20financial%20accounting/Academic-Research-Report-Strategic-Management-Process.pdf) (accessed 29 September, 2018)
- Porter, M. (1980), *Competitive Strategy*, The Free Press, New York, NY.
- Porter, M. (1985), *Competitive Advantage*, The Free Press, New York, NY.
- Porter, M.E. (1992), "Capital disadvantage: America's failing capital investment system", *Harvard business review*, Vol. 70 No. 5, pp. 65-82.
- Porter, M. E. (1996), "What is strategy? *Harvard Business Review*, Vol. 74, pp. 61–78.
- Porter, L.J. and Rayner, P. (1992), "Quality costing for total quality management", *International Journal of Production Economics*, Vol. 27 No. 1, pp. 69-81.
- Power, M. (1990), "*Brand and Goodwill Accounting Strategies*", London, Woodhead-Faulkner.
- Prajogo, D.I., McDermott, P. and Goh, M. (2008), "Impact of value chain activities on quality and innovation", *International Journal of Operations & Production Management*, Vol. 28 No. 7, pp. 615-635

- Pugh, D., Hickson, D., Hinings, C. and Turner, C. (1968), "Dimensions of organisational structure", *Administrative Science Quarterly*, Vol. 13, pp. 65–105.
- Pugh, D., Hickson, D., Hinings, C. and Turner, C. (1969), "The context of organizational structures", *Administrative Science Quarterly*, Vol. 14, pp. 91–114.
- Quattrone, P. and Hopper, T. (2001), "What does organizational change mean? Speculations on a taken for granted category", *Management accounting research*, Vol. 12 No. 4, pp. 403-435.
- Quattrone, P. and Hopper, T. (2005), "A 'time-space odyssey': management control systems in multinational organizations", *Accounting, organizations and society*, Vol. 30 No. 7-8, pp. 735-764.
- Rashid, A. (2009), "Board composition, board leadership structure and firm performance: evidence from Bangladesh", in Proceedings of the 2009 AFAANZ Conference. *Accounting and Finance Association of Australia and New Zealand*.
- Rashid, M.M., Ali, M.M. and Hossain, D.M. (2020), "Revisiting the relevance of strategic management accounting research", *PSU Research Review*", Vol. 4 No. 2, pp. 129-148.
- Rashid, M.M., Ali, M.M. and Hossain, D.M. (2021), "Strategic management accounting practices: a literature review and opportunity for future research", *Asian Journal of Accounting Research*, Vol. 6 No. 1, pp. 109-132.
- Rashid, M.M. (2020a), "Presence of professional accountant in the top management team and financial reporting quality: Evidence from Bangladesh", *Journal of Accounting & Organizational Change*, Vol. 16 No. 2, pp. 237-257.
- Rashid, M. M. (2020b), "Ownership structure and firm performance: the mediating role of board characteristics", *Corporate Governance*, Vol. 20 No. 4, pp. 719-737.
- Rashid, M. M. (2020c), "Board characteristics and foreign equity ownership: evidence from Bangladesh", *Journal of Accounting in Emerging Economies*, Vol. 10 No. 4, pp. 545-573.
- Rattray, C.J., Lord, B.R. and Shanahan, Y.P. (2007), "Target costing in New Zealand manufacturing firms", *Pacific Accounting Review*, Vol. 19 No. 1, pp. 68-83.
- Ray, M. and Schlie, T. (1993), "Activity-based management of innovation and R&D operation", *Journal of Cost Management*, Vol. 6 No. 4, pp. 16-22.
- Reichheld, F.F. and Teal, T. (1996), "The loyalty effect: The hidden force behind growth, profits and lasting", *Harvard Business School Publications*, Boston.

- Reid, G.C. and Smith, J.A. (2000), "The impact of contingencies on management accounting system development", *Management Accounting Research*, Vol. 11 No. 4, pp. 427-450.
- Rieg, R. (2018), "Tasks, interaction and role perception of management accountants: evidence from Germany", *Journal of Management Control*, Vol. 29 No. 2, pp. 183-220.
- Ribeiro, J.A. and Scapens, R.W. (2006), "Institutional theories in management accounting change: Contributions, issues and paths for development", *Qualitative Research in Accounting & Management*, Vol. 3 No. 2, pp. 94-111.
- Rickwood, C.P., Coates, J.B. and Stacey, R.J. (1990), "Stapylton: strategic management accounting to gain competitive advantage", *Management Accounting Research*, Vol. 1 No. 1, pp. 37-49.
- Robinson, O.C. (2014), "Sampling in interview-based qualitative research: A theoretical and practical guide", *Qualitative Research in Psychology*, Vol. 11 No. 1, pp. 25-41.
- Robison, J. (1997), "Integrate quality cost concepts into team problem-solving efforts", *Quality Progress*, March, p. 25.
- Roslender, R. (1995), "Accounting for Strategic Positioning: Responding to the Crisis in Management Accounting 1", *British Journal of Management*, Vol. 6 No. 1, pp. 45-57.
- Roslender, R. and Hart, S.J. (2002), "Integrating management accounting and marketing in the pursuit of competitive advantage: the case for strategic management accounting", *Critical Perspectives on Accounting*, Vol. 13 No. 2, pp. 255-277.
- Roslender, R. and Hart, S.J. (2003), "In search of strategic management accounting: theoretical and field study perspectives", *Management Accounting Research*, Vol. 14 No. 3, pp. 255-279.
- Roslender, R. and Hart, S.J. (2010), "Strategic Management Accounting: Lots in a Name?", *Accountancy Discussion Papers, 1005*.
- Ross, D.T. (1977), "Structured analysis (SA): a language for communicating ideas", *IEEE Transactions on Software Engineering*, Vol. SE-3 No. 1, p. 16.
- Rust, R.T. and Oliver, R.L. (2000), "Should we delight the customer?", *Journal of the Academy of Marketing Science*, Vol. 28 No. 1, pp. 86-94.
- Rutherford, M. (1994), *Institutions in Economics: The Old and the New Institutionalism*, Cambridge University Press, Cambridge.
- Ryan, R., Scapens, R. and Theobald, M. (2002), "Research Method and Methodology in Finance and Accounting 2nd Ed. Padstow: Thomson Learning.

- Sainaghi, R., Phillips, P. and d'Angella, F. (2019), "The balanced scorecard of a new destination product: Implications for lodging and skiing firms", *International Journal of Hospitality Management*, Vol. 76, pp. 216-230.
- Sartorius, K., Eitzen, C. and Kamala, P. (2007), "The design and implementation of Activity Based Costing (ABC): a South African survey", *Meditari: Research Journal of the School of Accounting Sciences*, Vol. 15 No. 2, pp. 1-21.
- Saunders, M. Lewis, P. and Thornhill, A. (2003), "*Research Methods for Business Student*", Prentice Hall, Essex.
- Saunders, M., Lewis, P. and Thornhill, A. (2007), *Research Methods for Business Students*, 4th edition, Financial Times Prentice Hall, Harlow.
- Scapens, R.W. (1994), "Never mind the gap: towards an institutional perspective of management accounting practices", *Management Accounting Research*, Vol. 5 Nos. 3/4, pp. 301-21.
- Scapens, R. (2006), "Changing times: management accounting research and practice from a UK perspective", In A. Bhimani, *Contemporary Issues in Management Accounting* (pp. 329-354), Oxford: Oxford University Press.
- Scapens, R. W. and Arnold, J. (1986), "Economics and management accounting research. In M. Bromwich, & A. Hopwood, *Research and Current Issues in Management Accounting*. (pp. 78-102), London: Pitman.
- Scarborough, P., Nanni Jr, A.J. and Sakurai, M. (1991), "Japanese management accounting practices and the effects of assembly and process automation, "*Management Accounting Research*, Vol. 2 No. 1, pp. 27-46.
- Schiffauerova, A. and Thomson, V. (2006), "A review of research on cost of quality models and best practices", *International Journal of Quality and Reliability Management*, Vol. 23 No. 6, pp. 647-669.
- Schumacker, R.E., Monahan, M.P. and Mount, R.E. (2002), "A comparison of OLS and robust regression using S-PLUS", *Multiple Linear Regression Viewpoints*, Vol. 28 No. 2, pp. 10-13.
- Scott, W.R. (1987), "The adolescence of institutional theory", *Administrative science quarterly*, Vol. 32 No. 4, pp. 493-511.
- Scott, W. R. (1995), *Institutions and organizations*, Thousand Oaks, CA: Sage.

- Scott, W. R. (2005), "Institutional theory: contributing to a theoretical research program, In K. G. Smith, & M. A. Hitt (Eds.), *Great minds in management: the process of theory development*", New York: Oxford University Press.
- Scott, W.R. (2008), "Approaching adulthood: the maturing of institutional theory", *Theory and society*, Vol. 37 No. 5, pp. 427.
- Scott, W.R. and Meyer, J.W. (1992), "The organization of societal sectors", in Meyer, J.W. and Scott, W.R. (Eds), *Organizational Environments: Ritual and Rationality*, Sage, London, pp. 129-53.
- Sedlak, M.W. (1981), "Youth policy and young women, 1950-1972: the impact of private-sector programs for pregnant and wayward girls on public policy", In National Institute for Education Youth Policy Research Conference, Washington, DC.
- Sekaran U. (2003), "Research Methods for Business: A Skill Building Approach", 4th edn. John Wiley: Hoboken, NJ.
- Selznick, P. (1957), "Leadership in Administration", New York: Harper & Row.
- Seymour-Smith, C. (1986), "Macmillan dictionary of anthropology", London: Macmillan Press Lmt.
- Shapiro, B. and Matson, D. (2008), "Strategies of resistance to internal control regulation", *Accounting, Organizations and Society*, Vol. 33, pp. 199-228.
- Shander, A., Hofmann, A., Ozawa, S., Theusinger, O.M., Gombotz, H. and Spahn, D.R. (2010), "Activity-based costs of blood transfusions in surgical patients at four hospitals", *Transfusion*, Vol. 50 No. 4, pp. 753-765.
- Shane, S. (1993), "Cultural influences on national rates of innovation", *Journal of business venturing*, Vol. 8 No. 1, pp. 59-73.
- Shank, J.K. (1989), "Strategic cost management: new wine, or just new bottles", *Journal of Management Accounting Research*, Vol. 1 No.1, pp. 47-65.
- Shank, J.K. (1996), "Analyzing technology investments—from NPV to Strategic Cost Management (SCM)", *Management Accounting Research*, Vol. 7 No. 2: pp. 185–197.
- Shank, J.K. (2007), "Strategic cost management: Upsizing, downsizing and right(?) sizing", In A. Bhimani (ed.), *Contemporary Issues in Management Accounting*. Oxford: Oxford University Press, pp. 355-379.
- Shank, J.K. and Govindarajan, V. (1988), "Making strategy explicit in cost analysis: a case study", *MIT Sloan Management Review*, Vol. 29 No. 3, p. 19.
- Shank, J.K. and Govindarajan, V. (1992a), "Strategic cost management: tailoring controls to strategies", *Journal of Cost Management, Fall*, pp. 14-24.



- Shank, J.K. and Govindarajan, V. (1992b), “Strategic cost management: the value chain perspective”, *Journal of Management Accounting Research*, Fall, pp. 179-98.
- Shank, J.K. and Govindarajan, V. (1994), “Strategic Cost Management- The New Tool for Competitive Advantage”, The Free press, New York.
- Shapiro, B. P., Rangan, V. K., Moriarty, R. T. and Ross, E. B. (1987), “Manage customers for profits (not just sales)”, *Harvard Business Review*, Sept–Oct, pp. 101–108.
- Sharkar, M.Z.H., Sobhan, M. and Sultana, S. (2006), “Management accounting development and practices in Bangladesh”, *BRAC University Journal*, Vol. III, No.2, pp. 113-124
- Shields, M.D. (1995), “An empirical analysis of firms' implementation experiences with activity-based costing”, *Journal of Management Accounting Research*, Vol. 7 No. 1, pp. 148-165.
- Shields, M.D. (1997), “Research in management accounting by North Americans in the 1990s”, *Journal of management accounting research*, Vol. 9, pp. 3-62.
- Shields, M.D. and Young, S.N. (1991), “Managing product life cycle costs: an organizational model”, *Journal of Cost Management*, Vol. 5 No. 3, pp. 39-52.
- Shil, N. C. (2017). Diffusion of management accounting practices in Bangladesh: Practitioners’ satisfaction towards sophistication (Doctoral dissertation, University of Dhaka).
- Shil, N.C., Alam, M.F. and Naznin, M. (2010), “Cost and management accounting practices in Bangladesh: a survey”, *International Journal of Managerial and Financial Accounting*, Vol. 2 No. 4, pp. 364-382.
- Shil, N.C., Hoque, M. and Akter, M. (2015), “Researching the level of diffusion of selective management accounting techniques by Bangladeshi firms”, *Accounting and Management Information Systems*, Vol. 14 No. 4, pp.704-731.
- Short, J.C., Payne G.T., and Ketchen D.J. (2008), “Research on organizational configurations: past accomplishments and future challenges”, *Journal of Management*, Vol. 34, pp. 1053-1080.
- Shortell, S.M. and Zajac, E.J. (1990), “Perceptual and archival measures of Miles and Snow's strategic types: A comprehensive assessment of reliability and validity”, *Academy of management Journal*, Vol. 33(4), pp. 817-832.
- Silk, S. (1998), “Automating the balanced scorecard”, *Strategic Finance*, Vol. 79 No. 11, p. 38-42.

- Sim, K. L. and Killough, L. N. (1998), "The performance effects of complementarities between manufacturing practices and management accounting systems", *Journal of Management Accounting Research*, Vol. 10, pp. 325–346.
- Sim, K.L. and Koh, H.C. (2001), "Balanced scorecard: a rising trend in strategic performance measurement", *Measuring Business Excellence*, Vol. 5 No. 2, pp. 18-27.
- Simmonds, K. (1981), "Strategic management accounting", *Management Accounting*, Vol. 59, pp. 9-26.
- Simmonds, K. (1982), "Strategic management accounting for pricing: a case example", *Accounting and Business Research*, Vol. 12 No. 47, pp. 206-214.
- Simmonds, K. (1986), "The accounting assessment of competitive position", *European Journal of Marketing*, Vol. 20 No. 1, pp. 16-32.
- Smith, M. and Dikolli, S. (1995), "Customer profitability analysis: an activity-based approach", *Managerial Auditing Journal*, Vol. 10 No. 7, pp. 3–7.
- Sohal, A.S., Abed, M.H. and Kelier, A.Z. (1990), "Quality assurance: status, structure and activities in manufacturing sectors in the United Kingdom", *Quality Forum*, Vol. 16, pp. 38-49.
- Sohal, A.S., Ramsay, L. and Samson, D. (1992), "Quality management practices in Australian industry", *Total Quality Management*, Vol. 3 No. 3, pp. 283-300.
- Solomons, D. (1952), "Studies in Costing", London: Sweet & Maxwell, Ltd
- Speckbacher, G., Bischof, J. and Pfeiffer, T. and (2003), "A descriptive analysis on the implementation of balanced scorecards in German-speaking countries", *Management accounting research*, Vol. 14 No. 4, pp. 361-388.
- Stahl, H.K., Matzler, K. and Hinterhuber, H.H. (2003), "Linking customer lifetime value with shareholder value", *Industrial Marketing Management*, Vol. 32 No. 4, pp. 267-279.
- Staubus, G.J. (1971), "The Dark Ages of Cost Accounting", Boston, Irwin.
- Stones, R. (2005), "Structuration theory", Palgrave Macmillan, Basingstoke.
- Sulaiman, M., Nik Ahmad, N.N., Alwi, N. (2002), "Management accounting practices in Malaysia: a survey of the industrial and consumer products sectors", unpublished research report, International Islamic University, Kuala Lumpur, Malaysia.
- Sulaiman, M.b., Nazli Nik Ahmad, N. and Alwi, N. (2004), "Management accounting practices in selected Asian countries: A review of the literature", *Managerial Auditing Journal*, Vol. 19 No. 4, pp. 493-508.

- Sulaiman, S. and Mitchell, F. (2005), "Utilising a typology of management accounting change: An empirical analysis", *Management Accounting Research*, Vol. 16 No. 4, pp. 422-437.
- Sun, H. (2009), "A meta-analysis on the influence of national culture on innovation capability", *International Journal of Entrepreneurship and Innovation Management*, Vol. 10 No. 3-4, pp. 353-360.
- Szendi, J.Z. and Shum, C. (1999), "Strategic management accounting practices in Latin America", *Journal of Accounting and Finance Research*, Vol. 7 No. 1, pp.1-13.
- Tani, T. (1995). Interactive control in target cost management. *Management Accounting Research*, Vol. 6 No. 4, pp. 399-414.
- Tani, T., Okano, H., Shimizu, N., Iwabuchi, Y., Fukuda, J. and Cooray, S. (1994), "Target cost management in Japanese companies: current state of the art", *Management Accounting Research*, Vol. 5 No. 1, pp. 67-81.
- Tashakkori, A., Teddlie, C. and Teddlie, C.B., 1998. *Mixed methodology: Combining qualitative and quantitative approaches* (Vol. 46). London, Sage.
- Tayles, M. (2011), "Strategic management accounting", In *Review of management accounting research* (pp. 22-52). Palgrave Macmillan, London.
- Thornton, A.C., Donnelly, S. and Ertan, B. (2000), "More than just robust design: Why product development organizations still contend with variation and its impact on quality", *Research in Engineering Design*, Vol. 12 No. 3, pp. 127-143.
- The Guardian, (2012), "New-wave Economies Going for Growth", available at : <http://www.theguardian.com/world/2012/dec/18/booming-economies-beyond-brics#startof-Comments>, (accessed 07 April 2021).
- The Telegraph (2016), "Deloitte overtakes PwC as world's biggest accountant", available at: <http://www.telegraph.co.uk/business/2016/10/04/deloitte-overtakes-pwc-as-worlds-biggest-accountant/> (accessed 17.11.2019).
- Tho, L.M., Md. Isa, C.R. and Ng, K.T. (1998), "Manufacturing environment, cost structures and management accounting practices: some Malaysian evidence", *Akauntan Nasional*, August.
- Tiessen, P. and Waterhouse. J.H. (1983), "Towards a descriptive theory of management accounting", *Accounting, Organizations and Society*, Vol. 8, pp. 251–267.
- Tillmann, K. and Goddard, A. (2008), "Strategic management accounting and sense-making in a multinational company", *Management accounting research*, Vol. 19 No. 1, pp. 80-102.

- Tolbert, P.S. and Zucker, L.G. (1996), "The institutionalization of institutional theory", in Clegg, S.R., Hardy, C. and Nord, W.R. (Eds), *Handbook of Organization Studies*, Sage, London, pp. 175-90.
- Tomkins, C. and Carr, C. (1996), "Reflections on the papers in this issue and a commentary on the state of strategic management accounting", *Management accounting research*, Vol. 7 No. 2, pp. 271-280.
- Townley, B. (1997), "The institutional logic of performance appraisal", *Organization studies*, Vol. 18 No. 2, pp. 261-285.
- Tricker, R.I. (1989), "The management accountant as strategist", *Management Accounting (CIMA)*, December, pp. 26 – 28 .
- Tuanmat, T. Z. and Smith, M. (2011). The effects of changes in competition, technology and strategy on organizational performance in small and medium manufacturing companies. *Asian Review of Accounting*, Vol. 19 No. 3, pp. 208-220.
- Turner, M. J., Way, S. A., Hodari, D. and Witteman, W. (2017), "Hotel property performance: The role of strategic management accounting", *International Journal of Hospitality Management*, Vol. 63, pp. 33-43.
- Tymond Jr., W. G., Stout, D. E. and Shaw, K. N. (1998), "Critical analysis and recommendations regarding the role of perceived environmental uncertainty in behavioural accounting research", *Behavioural Research in Accounting*, Vol. 10, pp. 23-46.
- Ueno, S. and Wu, F. (1993), "The comparative influence of culture on budget control practices in the United States and Japan", *The international journal of accounting education and research*, Vol. 28 No. 1, pp. 17-39.
- Vaivio, J. (1999), "Exploring a 'non-financial' management accounting change", *Management Accounting Research*, Vol. 10 No. 4, pp. 409-437.
- Van Raaij, E.M. (2005), "The strategic value of customer profitability analysis", *Marketing Intelligence & Planning*, Vol. 23 No. 4, pp. 372-381.
- Van Raaij, E. M., Vernooij, M. J., and van Triest, S. (2003). The implementation of customer profitability analysis: A case study. *Industrial marketing management*, Vol. 32 No. 7, pp. 573-583.
- Van Triest, S. and Elshahat, M. (2007) "The Use of Costing Information in Egypt: A Research Note", *Journal of Accounting and Organizational Change*, Vol. 3 No. 3, pp. 329-343

- Vance, C. M., McClaine, S. R., Boje, D. M. and Stage, D. (1992), “An examination of the transferability of traditional performance appraisal principles across cultural boundaries”, *Management International Review*, Vol. 32, pp. 313-326.
- Walker, O. C., Boyd, H. W. and Larreche, J. (1998), *Marketing strategy: Planning and implementation* (3rd ed.). Boston: Irwin/McGraw-Hill.
- Wallander, J. (1999), “Budgeting—an unnecessary evil”, *Scandinavian Journal of Management* Vol. 15, pp. 405–421.
- Wanderley, C. and Cullen, J. (2012), “Management Accounting Research: Mainstream versus Alternative Approaches”, *Contabilidade Vista & Revista*, Vol. 22 No. 4, pp. 15-44.
- Ward, K. (1992), “Accounting for marketing strategies”, In C. Drury (Ed.), *Management Accounting Handbook* (pp. 154-172), Oxford: Butterworth-Heinemann.
- Waterhouse, J.H. and Tiessen, P. (1978), “A contingency framework for management accounting systems research”, *Accounting, Organizations and Society*, Vol. 3 No. 1, pp. 65-76.
- Weitz, K.A., Smith, J.K. and Warren, J.L. (1994), “Developing a decision support tool for life-cycle cost assessments”, *Environmental Quality Management*, Vol. 4 No. 1, pp. 23-36.
- Weick, K.E. (1995), “What theory is not”, *Administrative Science Quarterly*, Vol. 40 No. 3, pp. 385-390.
- Westney, D.E. and Piekari, R. (2020), “Reversing the translation flow: Moving organizational practices from Japan to the US”, *Journal of Management Studies*, Vol. 57 No. 1, pp. 57-86.
- Wijewardena, H. and De Zoysa, A. (1999), “A comparative analysis of management accounting practices in Australia and Japan: an empirical investigation”, *The International Journal of Accounting*, Vol. 34 No. 1, pp. 49-70.
- Wilson, R. M. (1994). *Competitor analysis. MANAGEMENT ACCOUNTING-LONDON-*, Vol. 72, pp. 24-24.
- Wilson, R. M. S. (1991). *Strategic Management Accounting*. In D. Ashton, Hopper, T. and Scapens, R. W (Ed.), *Issues in Management Accounting* (pp. 82-105): Prentice Hall International.
- Wisker, G. (2008), “*The postgraduate research handbook: Succeed with your MA, MPhil, EdD and PhD*”, Houndsmills: Palgrave Macmillan.
- Wiwattanakantang, Y. (2001), “Controlling shareholders and corporate value: Evidence from Thailand”, *Pacific-Basin Finance Journal*, Vol. 9 No. 4, pp. 323-362.

- Woodward, J. (1965), *“Industrial organization: theory and practice”*, London: Oxford University Press.
- World Bank (2020a), “GDP growth (annual %) – Bangladesh”, available at: <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=BD> (accessed 26 April 2021)
- World Bank (2020b), “Market capitalization of listed domestic companies (% of GDP)- Bangladesh”, available at: <https://data.worldbank.org/indicator/CM.MKT.LCAP.GD.ZS?locations=BD> (accessed 07 April 2021).
- Wu, J., Boateng, A. and Drury, C. (2007), “An analysis of the adoption, perceived benefits, and expected future emphasis of western management accounting practices in Chinese SOEs and JVs”, *The International Journal of Accounting*, Vol. 42 No. 2, pp. 171-185.
- Xu, X. and Wang, Y. (1999), “Ownership structure and corporate governance in Chinese stock companies”, *China economic review*, Vol. 10 No. 1, pp. 75-98.
- Yazdifar, H. (2004), *“Insight into the dynamics of management accounting systems implementation in group (dependent) organizations: an institutional perspective (Doctoral dissertation, Manchester)”*.
- Yazdifar, H. and Tsamenyi, M. (2005), "Management accounting change and the changing roles of management accountants: a comparative analysis between dependent and independent organizations", *Journal of Accounting & Organizational Change*, Vol. 1 No. 2, pp. 180-198.
- Yazdifar, H. and Askarany, D. (2012), “A comparative study of the adoption and implementation of target costing in the UK, Australia and New Zealand”, *International Journal of Production Economics*, Vol. 135 No. 1, pp. 382-392.
- Yeh, C.M. (2019), “Ownership structure and firm performance of listed tourism firms”, *International Journal of Tourism Research*, Vol. 21 No. 2, pp. 165-179.
- Yeshmin, F. (2015), “A Study on Cost and Management Accounting Mechanism as Practiced in Manufacturing Industry of Bangladesh”, *Journal of Business*, Vol. 36 No. 2, pp. 103-113.
- Yeshmin, F. and Fowzia, R. (2010), “Management Accounting Practices: A Comparative Analysis of Manufacturing and Service Industries”, *ASA University Review*, Vol. 4 No. 1, pp. 131-141.

- Yeshmin, F. and Hossan, M.A. (2011) "Significance of management accounting techniques in decision-making: an empirical study on manufacturing organizations in Bangladesh", *World Journal of Social Sciences*, Vol. 1 No. 1, pp. 148-164.
- Young, S. M. and Selto, F. H. (1991), "New manufacturing practices and cost management: a review of the literature and directions for future research", *Journal of Accounting Literature*, Vol. 10, pp. 265-298.
- Zainun Tuanmat, T. and Smith, M. (2011), "Changes in management accounting practices in Malaysia", *Asian Review of Accounting*, Vol. 19 No. 3, pp. 221-242.
- Zajac, E.J. and Bazerman, M.H. (1991), "Blind spots in industry and competitor analysis: Implications of interfirm (mis) perceptions for strategic decisions", *Academy of management review*, Vol. 16 No. 1, pp. 37-56.
- Zeff, S.A. (1989), "Recent trends in accounting education and research in the USA: some implications for UK academics", *The British Accounting Review*, Vol. 21 No. 2, pp. 159-176.
- Zimmerman, J. L. (2001), "Conjectures regarding empirical managerial accounting research", *Journal of accounting and economics*, Vol. 32 No. (1-3), pp. 411-427.
- Zokaei, A. and Simons, D.W. (2006), "Value chain analysis in consumer focus improvement: A case study of the UK red meat industry", *The International Journal of Logistics Management*, Vol. 17 No. 2, pp. 141-162.
- Zoubi, A.A. (2011), "The processes of management accounting change in Libyan privatized companies: an institutional perspective", PhD thesis, Durham Business School, Durham University, Durham.

**Appendix 1: Effect of SMA usage on performance** [Source: Modified from Rashid et al., 2021]

<b>Study</b>	<b>Country (Sample size)</b>	<b>Theory applied</b>	<b>SMA techniques considered</b>	<b>Performance measures employed</b>	<b>Findings</b>
<b>Developed economies</b>					
Cadez and Guilding (2008)	Slovenia (193 largest companies, in terms of total revenue)	Contingency theory	16 SMA techniques under 5 categories (costing, competitor, customer, strategic-decision making, planning, control and performance measurement).	Perception of respondent (1-7 scale) on: ROI, margin on sales, capacity utilization, customer satisfaction, product quality, development of new product, and market share.	SMA usage is significantly and positively correlated with firm performance.
Cadez and Guilding (2012)	Slovenia (109 largest manufacturing companies)	Configurational theory	16 SMA techniques identical to Cadez and Guilding (2008) above.	Perception of respondent (1-7 scale) on: Return on investment, development of new product, and market share	Configurational proposition that internally consistent strategy and SMA system configurations are associated with higher firm's performance is supported to a limited extent.  Different strategic and structural alternatives are found to be associated with similar performance levels which are consistent with the equifinality proposition.
Aykan and Aksoylu (2013)	Turkey (229 medium and large size business)	Strategic management	16 SMA techniques based on Cadez and Guilding (2008).	Perceived qualitative and quantitative performance.	A significant positive relationship between competitors and customer oriented SMA techniques and perceived qualitative performance is evident.
Turner et al. (2017)	USA (95 hotel properties)	Contingency theory	9 SMA techniques (CPA, benchmarking, CCA, strategic pricing, VCC, IPM, CPAPFS, attribute costing, strategic costing).	Hotel property customer performance and financial performance.	The mediating effect of hotel property SMA usage is reported in the relationship between hotel property market orientation business strategy and hotel property financial performance.



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**Developing economies**

Amanollah Nejad Kalkhouran et al. (2017)	Malaysia (121 SMEs)	Contingency theory and Upper Echelons theory	16 SMA techniques of Cadez and Guilding (2008) plus value stream costing and customer segment profitability analysis.	Respondents' perception (1-5 scale) on productivity, cost, quality, delivery schedule, market share, sales growth rate, operating profit, cash flow from operation, ROI, new product development, R&D activity, and personnel development.	SMA usage displays an indirect positive influence on firm performance in relation of CEO education and involvement in networks.
Alamri (2019)	Saudi Arabia (435 accounting managers from 124 listed companies)	Contingency theory	Five facets of SMA practices	Financial performance (market share, sales growth, profit growth, return on equity, cash-flow and return on assets); Non-financial performance (customer satisfaction, adaptive ability to a changing environment, innovative performance, employee satisfaction, product quality and new product/service offers)	SMA facets have significant and positive effect on both financial and non-financial performance.

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## Appendix 2: Survey Questionnaire

“Adoption of Strategic Management Accounting Techniques in Bangladesh: An Exploratory Study”

### Section 1: Introduction

The purpose of this survey is to explore what strategic management accounting techniques are practiced by the listed public limited companies in Bangladesh, and what are the benefits of using such techniques including their effect on performance and strategic management process. You will be benefited by participating in this survey since you will be provided with useful data (results of survey and analysis) on the current use of strategic oriented management accounting tools including their effects on company’s performance. This might help you to improve the performance of your company by adopting those SMA techniques that you are not using at present.

All data collected in this survey will be kept secured and used anonymously. The research is carried out in accordance with the ethical guidelines of the University of Dhaka.

Respondent’s profile (demographic):

Age	
Gender	
Years of experience	
Educational background	
Organizational designation	

### Section 2

#### Organizational data: Part 1

1. Name of company:	
2. Size of company (Number of employee):	
3. Number of staff worked under Management accounting division:	
4. Number of professional accountants (CA/CMA/ACCA/CGMA/CPA):	
5. Nature of business (Main business):	

## Part 2

Dimension of strategy	Strategy followed			
<p><b>Strategic pattern</b> (Level of aggressiveness in pursuing market share)</p>	<p><b>Prospector</b> (New product development, offensive marketing, quickly response to market opportunity with little research, price skimming)</p>	<p><b>Defender</b> (Stable market through better quality or low cost with few offerings, revenue from repeat purchase)</p>	<p><b>Analyzer</b> (Between the two extremes; expand through existing core competency; balanced portfolio of product; incremental improvement in product)</p>	<p><b>Reactor</b> (don't respond unless forced by macro economic factors, organization strategy is not communicated clearly, prefer to maintain current strategy-structure relationship)</p>
<p><b>Strategic mission</b> (plan/choice)</p>	<p><b>Build</b> (Create new brand, new target with uncertainty about their success)</p>	<p><b>Hold</b> (Innovation and adjustment in product to maintain market share; market share is growing)</p>	<p><b>Harvest</b> (Improving or renewing the product to make more money; end of product life cycle)</p>	<p><b>Divest</b></p>
<p><b>Strategic position</b> (To attain competitive advantage)</p>	<p><b>Differentiator</b> (Unique product or brand, image ...difficult to copy, customers are not price-sensitive)</p>	<p><b>Cost leader</b> (Price-sensitive or cost-conscious customers, maintain lowest possible price and costs)</p>	<p><b>Focus</b> (Segmentation or niche strategy focus on the needs of specialized target market or customers; whether differentiation or low cost depends on the needs of target markets)</p>	

		<b>Very high</b>	<b>High</b>	<b>Moderate</b>	<b>Low</b>	<b>Very low</b>
Firm structure- degree of decentralization [level of authority (power) delegated by top management among managers to decide about large investment, new product, pricing, budgeting, and hiring and firing employees]						
Environmental uncertainty/ turbulence (unpredictability, fluctuating, ambiguous; lack of information on environmental factors; uncertainty about outcomes of decision)						
Environmental hostility (stressful, dominating, restrictive)						
Environmental complexity (rapidly developing technology)						
Environmental diversity (variety in products, inputs, customers)						
Social pressure on environmental ecology and Employee's and society well being						
Organizational culture (compliance attitude, fair treatment by superior, sharing of ideas, knowledge, technology, information)						
(Market) Orientation of company						
Use of advanced technology in operation (computer aided design, inspection and process planning, robotics, automated material handling, integration of manufacturing process using computers, flexible manufacturing system, manufacturing resource planning)						
Complexity of system/ process (diversity in product line, product design, batch size)						

Intensity of competition (competition faced by your company in the industry)					
Accountant's participation in strategic management decision					

### Section 3

#### Adoption status of SMA techniques

Strategic management accounting techniques	Not at all	To a little extent	Slightly below moderate	Moderate	Slightly above moderate	Above moderate	To a great extent
1. Activity based costing/management							
2. Attribute costing							
3. Life cycle costing							
4. Quality costing							
5. Strategic costing							
6. Target costing							
7. Value chain costing							
8. Competitor cost assessment							
9. Competitive position monitoring							
10. Competitor performance appraisal based on financial statements							
11. Customer profitability analysis							
12. Lifetime customer value							
13. Valuation of customers as assets							
14. Benchmarking							
15. Brand valuation							
16. Integrated							

performance measurement/ Balanced scorecard							
17. Strategic pricing							

**Benefits derived from adoption of SMA techniques (past 3 years)**

<b>Strategic management accounting techniques</b>	<b>High benefit</b>	<b>Above average</b>	<b>Average</b>	<b>Below average</b>	<b>Low benefit</b>	<b>Very low</b>	<b>No benefit</b>
1. Activity based costing/management							
2. Attribute costing							
3. Life cycle costing							
4. Quality costing							
5. Strategic costing							
6. Target costing							
7. Value chain costing							
8. Competitor cost assessment							
9. Competitive position monitoring							
10. Competitor performance appraisal based on financial statements							
11. Customer profitability analysis							
12. Lifetime customer value							
13. Valuation of customers as assets							
14. Benchmarking							
15. Brand valuation							
16. Integrated performance measurement/ Balanced scorecard							
17. Strategic pricing							

**Future emphasis of SMA techniques (upcoming 3 years)**

<b>Strategic management accounting techniques</b>	<b>High emphasis</b>	<b>Above average</b>	<b>Average</b>	<b>Below average</b>	<b>Low emphasis</b>	<b>Very low</b>	<b>No emphasis</b>
1. Activity based costing/management							
2. Attribute costing							
3. Life cycle costing							
4. Quality costing							
5. Strategic costing							
6. Target costing							
7. Value chain costing							
8. Competitor cost assessment							
9. Competitive position monitoring							
10. Competitor performance appraisal based on financial statements							
11. Customer profitability analysis							
12. Lifetime customer value							
13. Valuation of customers as assets							
14. Benchmarking							
15. Brand valuation							
16. Integrated performance measurement/ Balanced scorecard							
17. Strategic pricing							

## **Glossary of Strategic Management Accounting Techniques**

- 1. Activity based costing:** ABC uses sophisticated approach by identifying and allocating factory and other overheads first to activities and then to products/ services that cause the consumption of indirect resources.
- 2. Attribute costing:** Whereas ABC believes activities as the ultimate cost drivers, attribute costing considers benefits as the ultimate cost drivers. Products are seen as a package of objective attributes or characteristics that actually appeal to consumers.
- 3. Life cycle costing:** LCC considers the total costs of a product throughout its life cycle - from the design to decline, through introduction, growth and maturity.
- 4. Quality costing:** Quality costs are divided into three to four categories: prevention costs, appraisal costs and failure costs; failure costs being broken down to internal failure and external failure costs to achieve competitive advantage through their precise computation and control.
- 5. Target costing:** It is defined as systematic process of managing costs of products by establishing target market prices and profit margins during the design phase of a new product.
- 6. Value chain costing:** The sequence of business activities- from the design of product to shipment to customers- that are linked in the value chain are analyzed in detail in the light of cost and efficiency, significant cost drivers are identified and analyzed, and finally the competitive advantages are identified and emphasized to compete in the market.
- 7. Strategic costing:** focuses on using cost data to develop superior strategies in the way of achieving competitive advantage. It provides costing information for strategic decisions and to formulate and communicate strategies and provides tactics to implement those strategies and assists in developing and implementing controls in monitoring success at achieving strategic objectives.
- 8. Competitor cost assessment:** the provision of including competitors cost information in strategic decision making process. It concentrates uniquely on cost structures of competitors.
- 9. Competitive position monitoring:** competitive position is the power of a firm 'relative to its direct competitors' and depends on a number of dimensions. In addition to market share , measurement of competitive position must involve other indicators including sales revenue, profit and return on sales, volume and unit cost, unit price, cash flows, liquidity, resource availability, size and pattern of future demand.
- 10. Competitor performance appraisal based on published financial statements:** 'CORE' analysis of financial statements where context (C), overview (O), ratio (R), and evaluation



(E) are sequentially analyzed and can be used to appraise the strategic performance of competitor.

**11. Customer profitability analysis:** This technique “involves calculating profit earned from a specific customer” and such profit calculation is based on identifiable costs and sales data related to a particular customer.

**12. Lifetime customer profitability analysis:** This SMA technique includes future years in analyzing customer profitability in addition to current year, and ‘focuses on all anticipated future revenue streams and costs’ associated with providing services to a specific customer.

**13. Valuation of customers as assets:** Firms are increasingly adopting ‘customer-centric approach’ where customers are treated as ‘assets’, and firms formulate strategies to attain and retain customers in the way of achieving sustained competitive advantage.

**14. Benchmarking:** Benchmarking involves comparing the performance (both financial and operating) of company against its competitors (external focus), and even it entails the practices of comparing the performance of a division against the best performing division within a company.

**15. Brand valuation:** the financial valuation of a brand through the assessment of brand strength factors such as: leadership, stability, market, internationality, trend, support, and protection combined with historical brand profits.

**16. Balanced scorecard:** “Balanced Scorecard (BSC)”- a tool of strategic management accounting for measuring business performance from both financial and non-financial perspectives (internal process, customer and innovation).

**17. Strategic pricing:** Competitors’ reaction of a firm’s pricing decision may affect the competitive position of the firm; even it may shape the profitability of the entire industry. In this approach, price is seen as a key element in strategic positioning in the industry.

### Appendix 3: Interview Questionnaire

“Adoption of Strategic Management Accounting (SMA) Techniques in Bangladesh: An Exploratory Study”

<b>Section 1</b>	<b>Part 1</b>
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**Q1. Does existing Management Accounting System (MAS) provide information required to make decision?**

<b>If yes, who and how the information is processed and used</b>	<b>If no, how the deficiency is overcome?</b>

**Q2. Have there been any changes in the MAS in your organization over the last few years?**

Introduction of new SMA		Other changes
Without replacement of old one	As a replacement of old MAS	

**Please tell the historical background or reason for such changes?**

What was/were the previously used technique(s)?	What was/were the new SMA techniques replaced them?
<p><b>Why specific SMA techniques (e.g., ABC, Attribute costing, and target costing) are not being used?</b></p> <ol style="list-style-type: none"> <li><b>Economic (Structure/technology):</b> Company's internal structure, technology, processes does not support or require the use of a specific SMA technique.</li> <li><b>Institutional (Mimetic):</b> The technique is not being used by any of the benchmark companies in the industry.</li> </ol>	

**Q3. What were the motivators that foster the need for change? (e.g., market competition, technological advancement)**


**Q4. What were the catalysts that urge the need for change (e.g., deterioration in the financial performance?)**


**Q5. What were the facilitators that motivate the change initiative? (e.g., availability of competent accounting staffs)?**


**Q6. Who is/are the actor (s) propose/initiate the change process?**

--

**Q7. Who approve the introduction of a new MAS (SMA) or modification of the existing MAS?**

--

**Q8. Who take part in the implementation of a new SMA or modification of existing SMA?**

<b>Leadership role:</b>
<b>Technical role:</b>
<b>Put into Action:</b>

**Q9. How the implementation takes place/ what is the implementation process?**

<b>Planning (resources, actors, actions)</b>	<b>Who and how</b>
<b>Design/development of new SMA</b>	<b>Who and how</b>
<b>Structuring/restructuring of existing chain/relation</b>	<b>Who and how</b>
<b>Communication</b>	<b>Who and how</b>
<b>Institutionalization</b>	<b>Who and how</b>

**Q10. What were the consequences of such changes?**

<b>Effect on decisionquality</b>	<b>Effect on employee</b>	<b>Effect on firm performance</b>

## Section 2

**Q11. What institutional pressures your organization was/is facing to adopt SMA practices (similar to those adopted by others) and how?**

<b>Coercive</b>	<b>Mimetic</b>	<b>Normative</b>
<ul style="list-style-type: none"> <li>➤ Regulators (BSEC, RJSC, BB, Government law and regulation)</li> <li>➤ Standard setters (FRC, IASB, ICAB, ICMAB)</li> <li>➤ Stakeholders' pressures (socio-economic political pressure)</li> <li>➤ International Donors (UN, IMF, WTO, ISO)</li> </ul>	<ul style="list-style-type: none"> <li>➤ Copying best practices from others (mostly from successful organization) in the industry to gain legitimacy</li> <li>➤ Exporting by new employees</li> </ul>	<ul style="list-style-type: none"> <li>➤ Professional networks (prominent source of isomorphism)</li> <li>➤ Media effect (spreading new SMA from one organization to another)</li> <li>➤ Culture (national and corporate)</li> </ul>
<b><u>Others:</u></b>	<b><u>Others:</u></b>	<b><u>Others:</u></b>

**Q12. What (and how) other internal organizational factors influence the design and use of MAS (introduction of new SMA or modification of existing MAS)?**

<b>Organizational structure</b>	<b>Size</b>	<b>Policies</b>	<b>Operational technology</b>	<b>Firm performance</b>
What	What	What	What	What
How	How	How	How	How

**Q13. What (and how) other external environmental factors influence the design and use of MAS (introduction of new SMA or modification of existing MAS)?**

Intensity of competition	Economic conditions of the country	Customers' dissatisfaction	Advancement in operating technology	Advancement of IT
What	What	What	What	What
How	How	How	How	How

**Q14. What sort of resistance your organization faced during the introduction of a new SMA? How did you deal with them?**

1	
2	
3	
4	

**Q15. What sort of resistance your organization faced during the implementation of a new SMA?How did you deal with them?**

1	
2	
3	
4	

**Q16. Was there a need for agent (e.g., finance staff or outside people) to convince the top management and to get their support?**

--

**Q17. Was the change process led by outside consultant? Who and how?**

--

**Q18. What conflicts (with existing rules and routines) your organization faced in implementing new SMA? How did you solve it?**


**Q19. Did the change assist your organization to achieve the desired outcome?**

If yes, how:
If no, why or in what respects?

**Appendix 4: Profiles of the Interviewee**

<b>Interview No.</b>	<b>Type of Company</b>	<b>Position of the respondent</b>	<b>Education</b>	<b>Year of experience</b>	<b>Duration of interview</b>
1.	Bank	Assistant Vice President	Masters (MBA)	12	40 Minutes
2.	Bank	Senior Executive Vice President	FCMA, MBA	16	45 Minutes
3.	Bank	Senior Assistant Vice President	FCMA, MBA	17	42 Minutes
4.	Bank	Deputy Managing Director	FCMA, MBA, CSRA	26	48 Minutes
5.	NBFI	Senior Assistant Vice President	Masters	16	44 Minutes
6.	NBFI	SEVP & Head of Operations	FCMA, MBA	20	50 Minutes
7.	Cement	Deputy Manager	ACMA, MBA	13	41 Minutes
8.	Cement	Chief Financial Officer	FCMA, MBA	25	50 Minutes
9.	Pharmaceuticals and Chemicals	Deputy Manager	ACMA, MBA	14	47 Minutes
10.	Pharmaceuticals	Finance Director	FCMA, MBA	30	50 Minutes
11.	Pharmaceuticals	Chief Financial Officer	FCA, MBA	18	46 Minutes
12.	Chemicals	Chief Financial Officer	FCMA, MBA	35	60 Minutes
13.	Textile	Chief Financial Officer	FCMA, MBA	32	55 Minutes
14.	Textile	Deputy Manager	ACMA, MBA	14	42 Minutes
15.	Textile	Deputy Manager	ACMA, MBA	13	45 Minutes
16.	Lubricant	Finance Manager	CGMA, ACA, MBA	14	40 Minutes
17.	CNG	Deputy Manager	ACMA, MBA	14	45 Minutes
18.	Tea	Chief Financial Officer	ACMA, MBA	15	50 Minutes
19.	Gas	Deputy Manager	ACMA, MBA	12	41 Minutes
20.	Steel/Engineering	General Manager	ACMA, MBA	17	42 Minutes