

IMPACT OF MARKETING STRATEGIES AND TECHNIQUES ON
PHARMACEUTICAL MARKET OF BANGLADESH



PhD DISSERTATION

BY

JESMIN SULTANA

A DISSERTATION SUBMITTED TO THE DEPARTMENT OF MARKETING, UNIVERSITY OF
DHAKA IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR
OF PHILOSOPHY

IN

MARKETING

FACULTY OF BUSINESS STUDIES

UNIVERSITY OF DHAKA

BANGLADESH

December, 2020

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BANGLADESH

December, 2020

Dedicated

To my beloved family

DECLARATION

I do hereby declare that the thesis entitled “Impact of Marketing Strategies and Techniques on Pharmaceutical Market of Bangladesh” submitted to the Department of Marketing, University of Dhaka, Bangladesh for the degree of Doctor of Philosophy (PhD) in Marketing, is an original and independent research work. No part of this thesis has been submitted to any other University or Institution for the award of any other degree or diploma.

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CERTIFICATE

I do hereby certify that the thesis entitled “Impact of Marketing Strategies and Techniques on Pharmaceutical Market of Bangladesh” submitted by Jesmin Sultana Registration no: 28, Session: 2015-2016, a PhD research fellow of the Department of Marketing, University of Dhaka, Bangladesh, for the degree of Doctor of Philosophy (PhD) in Marketing, has been done under my supervision and guidance.

The thesis is an original piece of research work done by the researcher. I, therefore, recommend its submission for examination.

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ACKNOWLEDGEMENT

At first, I would like to thank the Almighty creator, the most kind and merciful for giving me the capability and patience to complete my PhD dissertation.

It is a great pleasure to acknowledge and express my gratitude and thanks from the core of my heart to my supervisor Prof. Dr. Md. Zakir Hossain Bhuiyan. He has helped in every possible way to complete my doctoral program.

I want to give very special thanks to the Chairman Prof. Dr. Md. Mizanur Rahman and all faculty members in the Department of Marketing, University of Dhaka, for their presence in all my seminars and providing me valuable, thoughtful feedback and suggestions.

I am greatly indebted to the Marketing Professionals of different Pharmaceutical companies such as Aristo Pharma, Unimed and Unihealth, Renata, ACI, Square, Beximco, Incepta, Servier, Oposnin, ACME, Popular etc. Name of the Marketing Professionals are Shibtossh Sarker (Aristopharma), Shamim Alam (Unimed and Unihealth), Dr. Md. Abu Zafor Sadek (Popular Pharma), Majedul islam (Incepta), Ananta Saha (Renata) and Anwarul Amin Rumi (Servier).

I would like to express my gratitude to the members of Faculty of Pharmacy, Prof. Dr. Md. Abdur Rashid, Prof. Dr. Muniruddin Ahmed, Prof. A.B.M Faroque, Prof. Dr. Md. Selim Reza, Prof. Dr. Syed Shabbir Haider, Prof. Dr. Abdul Muhit, Prof. Dr. Elias Al Mamun and Ikramul Hasan for their constant support and encouragement which helped me to carry out the PhD thesis work successfully.

My special thanks are for Dr. Mahfuzur Rahman, Dr. MG Azom and Dr. Tania Nasrin of Dhaka Medical College Hospitals, National Institute of Cardiovascular Disease Hospital, Ibrahim Cardiac Hospital, respectively for their tireless effort and cooperation for the survey work.

I was privileged to form a data collection team with the M. Pharm Students from the Department of Pharmacy, University of Dhaka and University of Asia Pacific who worked sincerely as a data collection team with me for my Pilot and final survey.

I wish to express my gratitude to Mr. Mohammad Saifuddin, a Lecturer, Department of Statistics, Bangladesh University of Business and Technology who helped me with data analysis.

Finally, I would like to thank my beloved family members, my husband, son and daughter, whose unconditional love, inspiration and cooperation in all level enabled me to complete this dissertation.

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ABSTRACT

The Pharmaceutical industry is one of the promising sectors and the second largest contributor to the economy of Bangladesh. The Pharmaceutical Market of Bangladesh in 2019 was valued at about BDT twenty-three thousand crore. There are 15 therapeutic segments of the Pharmaceutical market like alimentary and metabolism, systemic anti-infective, cardiovascular system, nervous system, respiratory system, muscular-skeletal system, genitourinary system & sex hormones, blood & blood forming organs, dermatological, sensory organs, systemic hormones, parasitology, hospital solutions, antineoplastic plus immune module and others.

Segmentation, Targeting and Positioning (STP) Strategies were applied to select the cardiac market segment in the present study as a model to represent the Pharmaceutical market as a whole. Doctors, Patients and Marketers are considered as the important components of the Pharmaceutical market.

The cardiac market segment has 10.56% of the market share and 15.53% of the market growth in the pharmaceutical products growth-share matrix which represents star position among different market segments.

The aim of the study is to explore the impact of different variables of Marketing Strategies and Techniques on Stakeholders' Satisfaction and Sales. A Conceptual Model was developed by exploring the cardiac market segment in the context of Bangladeshi Pharmaceutical Market using Customer Satisfaction theories and Marketing Mix Strategies. Both qualitative and quantitative methods were adopted to explore the perspective of different Stakeholders, such as Cardiologists, Cardiac patients and Marketing Professionals. Furthermore, the impact of Marketing Strategies and Techniques (MST), offered by the Marketing Professionals, on the satisfaction of Cardiologists (Customers) and Cardiac patients (Consumers) were analyzed using Exploratory Factor Analysis. Marketing Professionals evaluated the variables of Marketing Strategies and Techniques (MST) based on Sales performance of the Pharmaceutical companies. These attributes of Marketing Strategies and Techniques were then used to develop structured questionnaires to evaluate the impact of the variables on the Stakeholders' Satisfaction.

Majority of the Cardiac Hospitals and Pharmaceutical companies are situated in Dhaka, the capital of Bangladesh. A sample size of Cardiologists (156), Cardiac patients (200) and Marketing Professionals (180) were selected from the city of Dhaka. Random sampling method was used in this study. Data was collected using drop off and collect method by distributing self-explanatory questionnaires among the stakeholders.

A total of 536 respondents were asked to rate the importance of variables/attributes of Marketing Strategies and Techniques (MST) indicating their degree of agreement with satisfaction statement using a 5-point Likert scale (1= Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 =Strongly agree). Factor Analysis by SPSS version 20 was used for managing most correlated variables by reducing it to a manageable few factors which are labeled as Medicinal, Economic, Convenience and Communication relationship benefits.

Exploratory Factor analysis was applied to evaluate the impact of Marketing Strategies and Techniques on Stakeholders' Satisfaction as a whole and also separately for each stakeholder. The first important factor extracted from Rotated Factor Matrix labeled as Medicinal benefit, includes Awareness Campaign to prevent cardiovascular diseases ($p = 0.000$), Price Quality relationship ($p = 0.000$), Safety Information ($p=0.000$) and Efficacy ($p = 0.000$). It was found to have a positive impact on Stakeholders' Satisfaction. Affordable price ($p=0.000$), Company Reputation ($p=0.000$), Selling Skill of Medical Representatives ($p=0.000$), Promotional Policies ($p=0.000$) and Continuous Medical Education for doctors ($p=0.000$) were grouped under second important factor labeled as Communication benefit. The second factor has significant effect on the Satisfaction of the Stakeholders. The third factor labeled as Convenience benefit, includes Facility of Model pharmacy ($p=0.089$), Location of Pharmacy ($p=0.089$), Brand Image (0.089) and New Cardiac Medicine ($p=0.089$). The third factor was found to have an insignificant impact on Stakeholders' Satisfaction. The fourth factor tagged as Economic benefit was found to be significant and contains the variables Competitive price ($p=0.000$) and Availability ($p=0.000$).

The impacts of relative influential factors on the satisfaction of the individual category stakeholder were found to be different.

If the factors are sequenced according to the relative importance for the Cardiologists, then the Economic-Medicinal ($p=0.000$) benefit is of top most priority. The followers are Medicinal Communication ($p=0.000$), Communication ($p=0.000$) and Medicinal benefits ($p=0.03$) respectively.

Like the Cardiologists, the Patients also prioritize the economic-medicinal issue. The second most important factor is Medicinal Communication rather than Convenience benefit.

The Factors loaded to Rotated Matrix that impact on Marketing Professionals' Satisfaction about Sales are Convenience Medicinal benefit ($p=0.001$), Communication benefit ($p=0.025$), Medicinal ($p=0.009$) benefit and Economic benefit ($p=0.004$) respectively.

It was observed that the gap between the Overall Satisfaction about Marketing Strategies and Techniques and Stakeholders were significantly different. Cardiologists, the direct customers of medicine suppliers are moderately satisfied (Mean score = 3.89) and Patients (the consumers) are not satisfied. The mean score of Patients' Satisfaction is 2.88. Interestingly, Marketing Professionals are very satisfied about their Sales performance (Mean score = 4.06).

The assessment of cardiac patients (200) regarding their satisfaction of medicine quality, affordability, availability and communication relation which impact on sales were found to be different depending on the market shares and reputation of pharmaceutical companies.

Recently, Model Pharmacy has added a new dimension in Distribution (Place) Strategies of medicines in 2017.

Patients' Satisfaction about the four variables regarding the Facilities of Model Pharmacy such as Quality of medicines, Reasonable price of medicines, Data-based system and Counseling by 'A' grade pharmacists were found satisfactory than retail conventional pharmacy in Dhaka city.

The Regression Analysis of Factors indicates that most of the hypotheses of the Conceptual Model have statistical significance. As the study was conducted on three categories of stakeholders, the findings may give policy makers the chance to compare relative importance of variables from viewpoint of doctors and patients. This can lead to development of better Marketing Strategies and Techniques resolving medicinal, economic, convenience and communication issues.

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LIST OF ABBREVIATIONS

Abbreviation	Description
AAB	Alpha Adrenergic Blocker
ACEI	Angiotensin Converting Enzyme Inhibitor
ADDO	Accredited Drug Dispensing Outlet
ANOVA	Analysis of Variance
ARB	Angiotensin Receptor Blockers
AWC	Awareness Campaign
BB	Beta Blocker
BI	Brand Image
BIRDEM	Bangladesh Institute of Research and Rehabilitation in Diabetes, Endocrine and Metabolic Disorders
BSMMU	Bangabandhu Sheikh Mujib Medical University
CCB	Calcium Channel Blocker
CME	Continuous Medical Education
CMH	Combined Military Hospital (Dhaka)
CP	Competitive Pricing
CPV	Customer Perceived Value
CR	Company Reputation
CS	Customer Satisfaction
CVD	Cardiovascular Diseases
DFID	Department for International Development
DGDA	Directorate Government of Drug Administration
DIMS	Drug Information Management System
DMCH	Dhaka Medical College and Hospital
EDT	Expectancy Disconfirmation Theory
EF	Efficacy
EFA	Exploratory Factor Analysis
FM	Facilities of Model Pharmacy
GUS	Gastro-Urinary System

IMS	Intercontinental Medical Statistics
KMO	Kaiser-Meyer-Olkin
LDC	Least Developed Country
LP	Location of Pharmacy
MR	Medical Representatives
MSH	Management Science for Health
MST	Marketing Strategies and Techniques
NICVD	National Institute of Cardiovascular Diseases
NM	New Medicine
OTC	Over The Counter Drugs
PLC	Product Life Cycle
PP	Promotional Policies
PQ	Price-Quality
4Ps	Product, Price, Place, Promotion
SHSMC	Shaheed Suhrawardy Medical College Hospital
SI	Safety Information
SPSS	Statistical Package for the Social Sciences
SSMCH	Sir Salimulla Medical College Hospital
SSMR	Selling Skill of Medical Representatives
STP	Segmenting, Targeting and Positioning
WHO	World Health Organization
WTO	World Trade Organization

CHAPTER- ONE

INTRODUCTION

1.1 Introduction

The structure of the pharmaceutical industry has undergone significant changes over the last 20 years. This fast-growing, knowledge driven industry is devoted to research, development, manufacturing and marketing of drugs that safely cures a wide range of diseases and improves the health and quality of life of human beings. According to Intercontinental Medical Statistics (IMS) report 2016, the global pharmaceutical market size is increasing significantly. The scenario of Bangladesh is also very promising. The total pharmaceutical market of Bangladesh is about taka 21,000 crores in 2018, which was only taka 9169 crores in 2013. Bangladesh is now producing medicine of all therapeutic classes which include alimentary and metabolism, systemic anti-infective, nervous system, cardiovascular system, muscular-skeletal system, genitourinary system (G.U) and sex hormones, dermatological, blood forming organs and sensory organs. The rationale for this segmentation was based on a broad classification of IMS data (2013-2018) available in Bangladesh.

Unlike most LDC, Bangladesh has a fairly strong manufacturing base even though it does not have a strong capital. The situation of Pharmaceutical market during the post-liberation period was not so good. 75% of the total market was captured by a few multinational companies like Pfizer, Ciba-Geigy, Squibb, Fisons, Hoescht etc. Consequently, Bangladeshi companies like Pharmadesh, Square, Albert David, Gaco, Alco, Edruc, ACME etc. fulfilled the rest 25%. After the promulgation of local industry friendly National Drug Policy in 1982, the scenario started to change positively for Bangladesh. At present, 98% (DGDA report 2018) of overall national drug demand are being fulfilled by local companies. Not only that, Bangladesh is now exporting medicine to 100 countries including the USA.

It is evident that the cardiovascular drug market is getting increasing attention because of its high growth rate (from taka 927 cr in 2013 to taka 2227 cr in 2018). Incepta and Square

are the leaders of cardiac market. Beximco, Opsonin, ACI are the market challengers and Aristo Pharma, ACME and others are market followers.

Globally, the total cardiovascular drug market has grown to \$ 186,901 million in 2016 from \$ 170109 million in 2013 (Business insight, 2016).

Pharmaceutical companies are facing fierce competition worldwide. Their rivalry depends on their capability to cope with multiple challenges to control cost, enhance product quality and provide superior customer service (Lee, 2007).

In a global changing scenario in the pharmaceutical world, there is an urgent need of the pharmaceutical sector of Bangladesh to satisfy the needs of the demand nationally and internationally. According to the WTO (World Trade Organization) TRIP (Trade Related Aspect of Intellectual Property) agreements, Least Developed countries (LDCs) are exempted from patent protection until 2033 (at.capital.com). The policy will be allowing LDCs to reverse engineer formulation of patented drugs and sale legally. This provides a unique opportunity for Bangladesh over India and China who are already under the patent regime.

1.2 Background of the Study

The impact of 4Ps Marketing Strategies on sales growth and competitive advantages have not significantly been found to be documented and made available for the pharmaceutical industry in Bangladesh. However, these strategies are vital for creating more opportunities in Bangladeshi Pharmaceutical Market.

The present empirical study will highlight impact of Marketing Strategies and Techniques (MST) of market leaders, challengers and followers of cardiac market (a particular segment) among other therapeutic groups in Bangladeshi pharmaceutical industry taking as a case study or an example which has high rising trend of market growth rate over the few years (IMS 2013-2018).

Strategy is a game plan to achieve the goal in a better way than competitors. Marketing Strategy combines all of its marketing goals into one comprehensive plan. It should be

drawn from market research and focus on the right product mix in order to achieve the maximum profit potential for sustaining the business (Dimitris, 2002). McCarthy (1960) presented marketing mix strategy which includes 4Ps such as product, price, place and promotional tools.

Robert Lauterborn recommended that sellers' 4 Ps should correspond to buyers' four Cs such as customer benefit, customer cost, and convenient place and communication techniques (Lauterborn, 1990). Philip Kotler highlighted that Segmentation, Targeting and Positioning is the core of Strategic Marketing. Marketing Techniques are the tactics that require a blend of activities over time to achieve strategy (Kotler, 2003).

A marketing manager designs marketing activities of marketing plan and implements these at many levels. The first technique is to segment market and select target customer and then position the product in customer's mind. It is to communicate the value or benefits by utilizing sales force, sales promotion, advertising and other techniques in order to deliver the product for end users. Winning companies can meet customer needs economically, conveniently and with effective communication (ir.amu.ac.in).

Philip Kotler and Kevin Keller suggested the 4 Ps of modern marketing technique are people, processes, programs and performance of sales growth in market. Here, the People of 4Ps in the context of pharmaceutical company indicates employees in marketing department (managers and medical representatives). Their knowledge, selling skill and efficiency are critical for marketing success in a highly competitive environment (Kotler and Keller, 2016). At the same time, marketing people must view customers' (doctor) perspective in order to understand their psychology behind why they prescribe medicine for their patients from a particular supplier or company.

Process reflects the right set of tactics or techniques such as creativity, discipline, action programs in detail. They must be integrated with 4Ps strategies to create an impact on sales performance positively. Profitable market opportunities of market segment need to be assessed continually for market potential and market (forecasted) demand. The players of

the microenvironment are suppliers, marketing people, doctors, patients, distributors and competitors who affect its ability to produce and sell medicines.

1.3 Overview of Pharmaceutical Market in Bangladesh

The pharmaceutical sector is highly competitive. There are over 450 registered pharmaceutical companies in Bangladesh actively involved in the manufacturing and marketing of pharmaceutical products (IMS2019). The top ten pharmaceutical companies such as Square, Incepta, Beximco, Healthcare, Renata, Drug International, Aristo Pharma, ACI, Eskayef make up 68.63% of the total market share and top 20 companies add up to 88.98% of the total market share (IMS data 2019), including 15 different therapeutic market segments.

Table 1.1 shows the top 20 pharmaceutical companies' individual market share. It can be clearly inferred that Square pharmaceutical company is the market leader, followed by two other leaders such as Incepta and Beximco, which are named as market challengers. The next seven companies, Healthcare, Renata, Oponin, Drug International, Aristopharma, ACI and Eskayef can be named as second category market challengers. Consequently, the next 20 companies can be categorized as market followers and market niche depending on their market performance, market share and market growth.

Table 1.1 Top 20 Pharmaceutical companies with market share and market growth:

Rank in market	Pharmaceutical company	% Market share	%Market growth rate
1	Square	16.59	10.00
2	Incepta	11.11	12.63
3	Beximco	8.24	13.27
4	Healthcare	5.66	22.81
5	Renata	5.25	13.41
6	Opsonin	5.19	14.69
7	Drug International	4.36	70.31
8	Aristo pharma	4.12	12.70
9	ACI	4.11	5.45
10	Eskyef	4.00	2.85
11	ACME	3.85	22.97
12	Radiant	2.89	13.46
13	General	2.30	4.12
14	Unimed and Unihealth	2.24	18.42
15	Popular	2.17	17.35
16	Novo Nordisk	1.88	10.80
17	Sanofi	1.52	-3.21
18	Ibnsina	1.25	16.64
19	Ziska	1.14	17.62
20	Sun pharma	1.11	15.65

(Source: Source: Prepared by Researcher from IMS data,2019)

The Bangladesh Association of Pharmaceutical Industries (BAPI) is an important professional association and has 173 companies (DGDA, 2018). BAPI works for the interest of pharmaceutical companies, promotes policies, changes the government policies if required and performs other activities. This industry has been the 2nd largest contributor to the economy of Bangladesh since independence. This industry has a huge prospect in the near future as the health care infrastructure and health awareness of the Bangladeshi people has increased and at the same time, the purchasing capacity of the people is also increasing. (sultana J, 2016) This can help pharmaceutical companies to take opportunities to develop their Marketing Strategies and Techniques to maximize their market performance to get competitive advantages.

The Directorates of Drug Administration (DDA) under the Ministry of Health and Family welfare of Bangladesh maintain regulations and work as counterpart of Food and Drug Administration (FDA) with USA.

It monitors and controls the purchasing of raw materials, manufacturing practice, import, export, distributions and sales of medicines in Bangladesh. One way of maintaining and controlling ethical practice and fair competition is to implement rules and regulations from time to time by Drug Act and Drug policies. The examples of these policies are National Drug Policy of 1982, The Drug Control Ordinance 1982, Drug Control ordinance 2004, National Drug Policy 2005 and newly introduced National Drug Policy 2016. The revised new policy will ensure the transparency of all transaction, quality practice in manufacturing marketing and distribution network, and implementation of Model Pharmacy concept in Bangladesh to remove substandard medicines from the pharmaceutical market. As global competition is intensively increasing, Bangladesh needs to develop effective corporate and Marketing Strategies and Techniques to achieve sustainable competitive advantages both nationally and internationally.

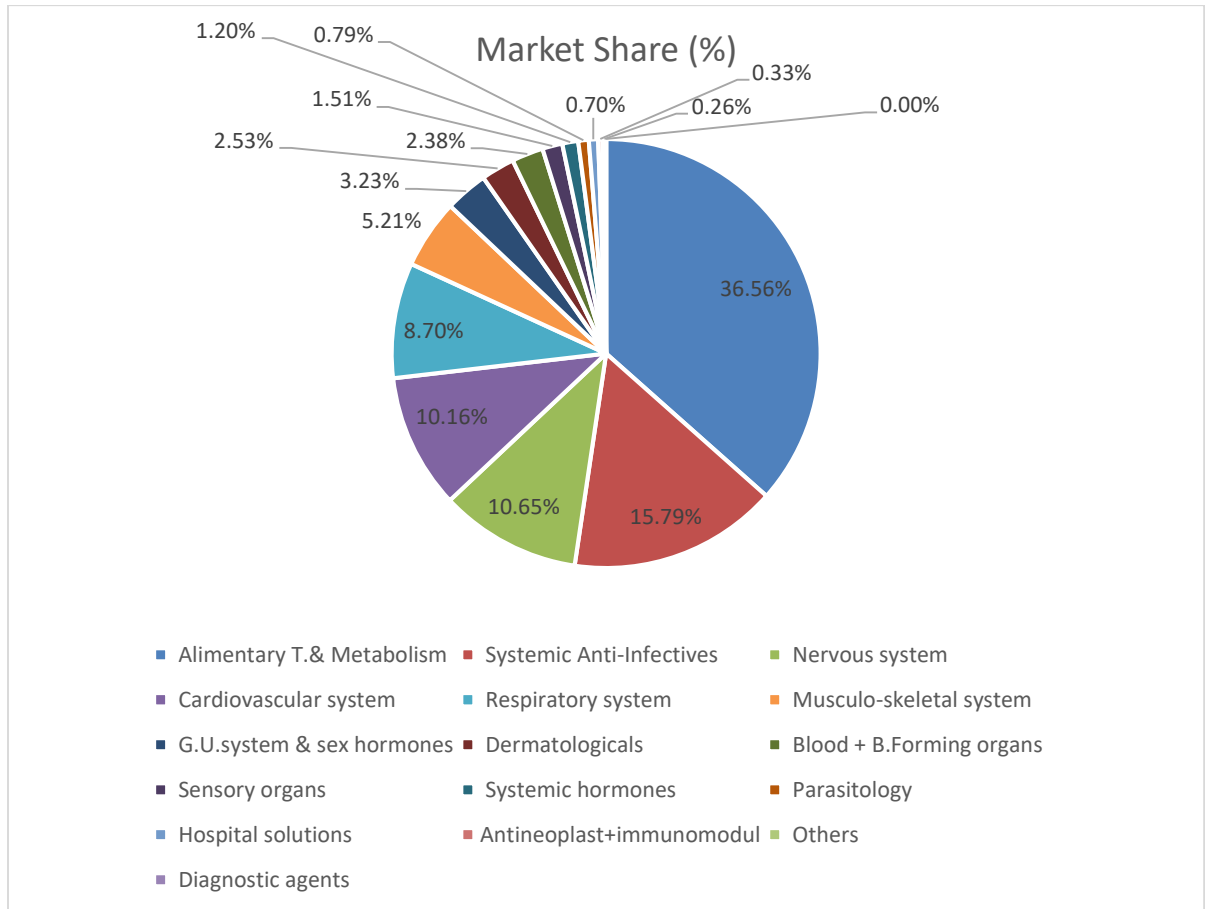
The pharmaceutical distribution is retail oriented. There are 118,867 retailers and 1169 wholesalers (DGDA, 2018) in Bangladesh. The pharmaceutical companies distribute their products by themselves to retailers from their warehouse located in different parts of the country. There are a large number of illegal, unlicensed drug stores in the cities and towns, which sell poorly manufactured, conducted and substandard medicines. There are 15 therapeutic segments in the pharmaceutical market of Bangladesh. The position of the cardiovascular market segment in the year 2018 was 4 with sales of Tk. 2104.00 crores in 2018 and a market share of 10.16% and a growth rate of 13.17% in the table 1.2 and figure 1.1.

Table 1.2: Top Therapeutic Segments in Bangladesh 2018(IMS data)

Sl	Therapeutic group	Total Yearly Sales (BDT)	Market Share (%)	Market Growth (%)
1	Alimentary T.& Metabolism	73,740,306,459	36.56%	8.44
2	Systemic Anti-Infectives	31,840,824,843	15.79%	3.79
3	Nervous system	21,491,946,111	10.65%	6.34
4	Cardiovascular system	20,496,433,680	10.16%	13.17
5	Respiratory system	17,550,470,546	8.70%	5.64
6	Musculo-skeletal system	10,499,713,765	5.21%	6.90
7	G.U.system & sex hormones	6,512,135,692	3.23%	16.01
8	Dermatologicals	5,113,102,842	2.53%	7.29
9	Blood + B.Forming organs	4,802,186,294	2.38%	13.97
10	Sensory organs	3,051,846,645	1.51%	8.47
11	Systemic hormones	2,415,258,601	1.20%	-3.11
12	Parasitology	1,592,451,510	0.79%	8.56
13	Hospital solutions	1,413,378,071	0.70%	-1.73
14	Antineoplast+immunomodul	671,483,795	0.33%	19.01
15	Others	514,792,640	0.26%	20.88
16	Diagnostic agents	5,415,905	0.003%	-75.36
Total market		201,711,747,397	100	7.72

Source: Prepared by Researcher from IMS Data

Figure 1.1: Market Share of All Therapeutic Segments of Bangladeshi Pharmaceutical Market in 2018(IMS data)



Source: Prepared by Researcher

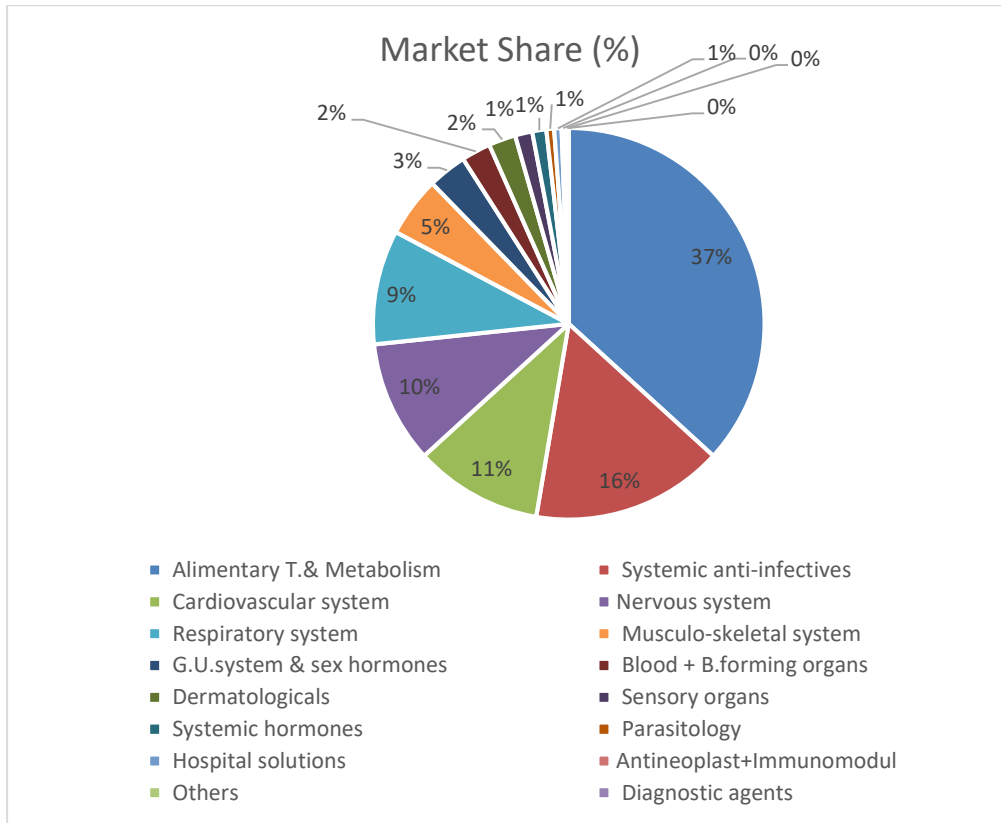
In the ranking of 15 therapeutic segments in 2019, it was observed that the cardiovascular segment had overtaken the position of Nervous system segment which was in position 3 in 2018. Currently, the ranking position of the cardiovascular segment is 3 with a high market share 10.56% and a high market growth 15.53% in the table1.3 and figure1.2 which represents the star position of market growth- share matrix. This study shows the evidence of the market attractiveness and opportunities of the cardiac market in Bangladesh.

Table 1.3: Top Therapeutic Segments in Bangladeshi Pharmaceutical Market (IMS-2019)

Sl.	Therapeutic Group	Total Yearly Sales (BDT)	Market Share (%)	Market Growth (%)
1	Alimentary T.& Metabolism	84,635,201,062	36.78	12.38
2	Systemic anti-infectives	36,544,627,741	15.88	14.40
3	Cardiovascular system	24,309,943,178	10.56	15.53
4	Nervous system	23,249,740,474	10.10	7.54
5	Respiratory system	21,742,107,868	9.45	22.00
6	Musculo-skeletal system	11,395,133,745	4.95	6.77
7	G.U.system & sex hormones	7,391,154,287	3.21	10.93
8	Blood + B.forming organs	5,563,066,015	2.42	12.07
9	Dermatologicals	5,152,709,838	2.24	1.20
10	Sensory organs	3,260,751,488	1.42	5.51
11	Systemic hormones	2,661,950,636	1.16	10.59
12	Parasitology	1,475,990,937	0.64	-6.01
13	Hospital solutions	1,393,373,540	0.61	1.33
14	Antineoplast+Immunomodul	681,029,966	0.30	-0.63
15	Others	640,963,331	0.28	18.82
16	Diagnostic agents	5,211,402	0.00	-32.08
Total market		230,102,955,509	100	12.35

Source: Prepared by Researcher

Figure1.2: Market Share of All Therapeutic Segments of Bangladeshi Pharmaceutical Market in 2019 (IMS data)



Source: Prepared by Researcher

1.4 Overview of Cardiovascular Market Segment

The Targeting of Cardiac Market Selection is to use this market segment as a model for the present research for the evaluation of the impact of MST on Stakeholders' Satisfaction and Sales. This study can be used to represent the scenario of the total pharmaceutical market and stimulate further research on other market segments as well.

Targeting (Court, DC 1994) is to select specific market segments on which to concentrate the marketing effort. Four aspects need to be analyzed for targeting segment such as market, customer, competition and company's capability. Among the 15 different therapeutic segments, Bangladeshi companies want to pursue the cardiac market as the cardiac market growth is very high (219%) over the last seven years (Table 1.6). Cardiac medicines are used life-long. Cardiac disease is the number one cause of death in Bangladesh (WHO 2015). Hence, companies will assess the capability to obtain sustainable competitive advantage within this cardiac segment. The cardiac market is growing with

significant potential where cardiologists are the customers and cardiac patients are the consumers. The questions that need to be answered by STP model include what are the needs, wants, attitude and belief of customers (doctors and patients) about the company, who their competitors are and what are their capabilities and performance in the market. The STP model (Segmenting, Targeting and Positioning) is used in the pharmaceutical market according to segment importance and chance of success like cardiac markets. The market share (10.13%) and market growth rate (13.17%) in 2018 is more promising and is positioning the segment in the star quadrant in the market growth –share matrix than other segments. The sale of cardiovascular medicines was recorded T658.00 cr. in 2011 and has increased to Tk. 2104.00 cr. in 2018 at a growth of 219% over the seven years.

Table 1.4: Top 20 Companies and Cardiovascular Market of Bangladesh Year 2019(IMS data)

Sl	Company Name	Market Size (BDT)	Market Share (%)	Market Growth (%)
	Cardiovascular market	24,309,943,178	100.00	15.53
1	Beximco	4,067,926,644	16.73	21.41
2	Incepta pharma	3,731,769,932	15.35	4.35
3	Square	3,516,800,533	14.47	18.10
4	Opsonin pharma	1,841,576,082	7.58	16.49
5	Drug international	1,629,775,712	6.70	64.40
6	A.C.I	1,585,683,385	6.52	18.98
7	Unimed &Unihealth	868,100,136	3.57	6.42
8	Aristopharma	827,736,983	3.40	14.12
9	Healthcare pharma	788,040,363	3.24	12.74
10	ACME	756,584,001	3.11	6.31
11	Servier	580,215,616	2.39	-8.65
12	Popular pharma	531,330,792	2.19	8.68
13	Renata	528,685,070	2.17	10.44
14	Sun pharma	464,758,492	1.91	31.31
15	Orion pharma ltd.	384,480,055	1.58	10.62
16	General	360,081,252	1.48	25.33
17	Eskayef	344,433,980	1.42	6.46
18	Radiant pharma	242,143,919	1.00	39.74
19	Novartis	239,598,068	0.99	15.18
20	Delta pharma	144,826,506	0.60	8.36
21	Others	875,395,657	3.60	-

Source: Prepared by Researcher

Table 1.5: Top 20 Companies and Cardiovascular Market of Bangladesh Year 2018 (IMS data)

Sl.	Company Name	Market Size (BDT)	Market Share (%)	Market Growth (%)
	Cardiovascular Market	22,032,985,508	100.00	15.24
1	Incepta pharma	3,684,951,413	16.72%	14.88
2	Beximco	3,553,979,166	16.13%	17.14
3	Square	3,126,560,682	14.19%	11.41
4	Opsonin pharma	1,645,814,899	7.47%	14.29
5	A.C.I	1,386,529,283	6.29%	17.21
6	Drug international	1,152,180,837	5.23%	69.16
7	Unimed &Unihealth	821,118,455	3.73%	11.25
8	Aristopharma	742,617,466	3.37%	6.40
9	ACME	724,716,388	3.29%	-0.23
10	Healthcare pharma	716,519,521	3.25%	15.53
11	Servier	646,037,763	2.93%	6.26
12	Popular pharma	517,191,361	2.35%	17.44
13	Renata	502,389,844	2.28%	18.14
14	Orion pharma ltd.	364,967,635	1.66%	9.94
15	Sun pharma	361,458,509	1.64%	-5.27
16	ESKAEF	330,369,273	1.50%	17.09
17	General	322,409,641	1.46%	29.11
18	Novartis	222,109,038	1.01%	24.15
19	Radiant pharma	194,118,570	0.88%	103.11
20	Sanofi Bangladesh	156,398,903	0.71%	-8.19
21	Others	860,546,861	3.91%	-

Source: Prepared by Researcher

The top 20 pharmaceutical companies holding market size, market share and market growth of cardiac market segments in 2018 and 2019 are shown in Table 1.4 and 1.5. The tables depict that the competition among the competitors is very high. The ranking positions of the three companies have been changing over the years. The tables 1.4 and 1.5 show data of two recent years indicating that Beximco is ranked as the market leader in 2019, whereas Incepta was ranked 1st in 2018. Square pharmaceutical was in third position

over the two years although it is the market leader in total market segments of Bangladeshi pharmaceutical market. This analysis infers the intense competition of the top three companies that have a combined market share of about 46%.

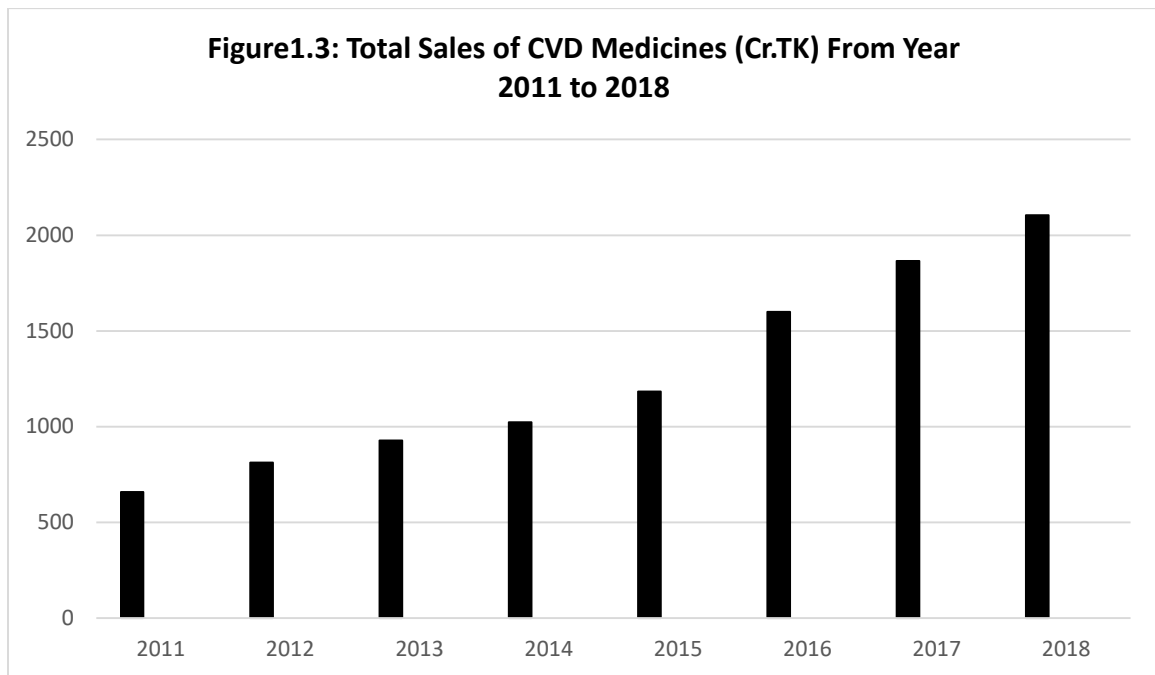
Opsonin, Drug International, A.C.I, Unimed & Unhealth, Healthcare and ACME can be categorized as market challengers that face high competition among them and have been changing their position over the past two years as well. The next 20 companies among the 30 pharmaceutical companies can be categorized as followers and niches. The total market share of the 30 companies is about 98%. The researchers selected 18 companies holding 82% (approx.) of the market share including large, medium and small.

Table 1.6 and figure1.3 show that total sales of cardiovascular medicines were recorded as Taka 658.00 Cr in year 2011 and have been increased to Taka 2104.00 Cr in 2018.

Table1.6 : Total Sales of CVD Medicine (Cr. Taka)

Year	Total Sales of CVD Medicine
2011	658
2012	812
2013	928
2014	1023
2015	1183
2016	1599
2017	1866
2018	2104

Source: Prepared by Researcher from (IMS data)



Source: Prepared by Researcher

Cardiovascular disorders are the causes of cardiovascular diseases. The cardiovascular diseases can be categorized by the indications related to heart and blood circular networks. Cardiac diseases are hypertension, dyslipidemia, stroke, atherosclerosis thrombosis, myocardial infraction, congestive heart failure, disease of coronary artery and stroke. The two risk factors of cardiovascular diseases are non-manageable and manageable factors. The non-manageable factors are age, sex, heredity and race. The manageable factors are diet, smoking, physical inactivity, stress and drug abuse which are lifestyle related (Source: Business Insight 2016). According to WHO (2016), stroke was one of the leading causes of death.

Arteriosclerosis is the thickening of the arteries and causes loss of vessel wall flexibility and reduces blood supply to tissues and organs. These lead to coronary artery disease, peripheral artery disease and stroke.

Thrombosis forms blood clot inside the blood vessels which obstructs the flow of blood in the brain, lungs, gastrointestinal tract and limbs.

Cardiac arrhythmias may stem from a heart rhythm problem which is too fast and too slow. Frequent occurrence may lead the risks of stroke and congestive heart failure.

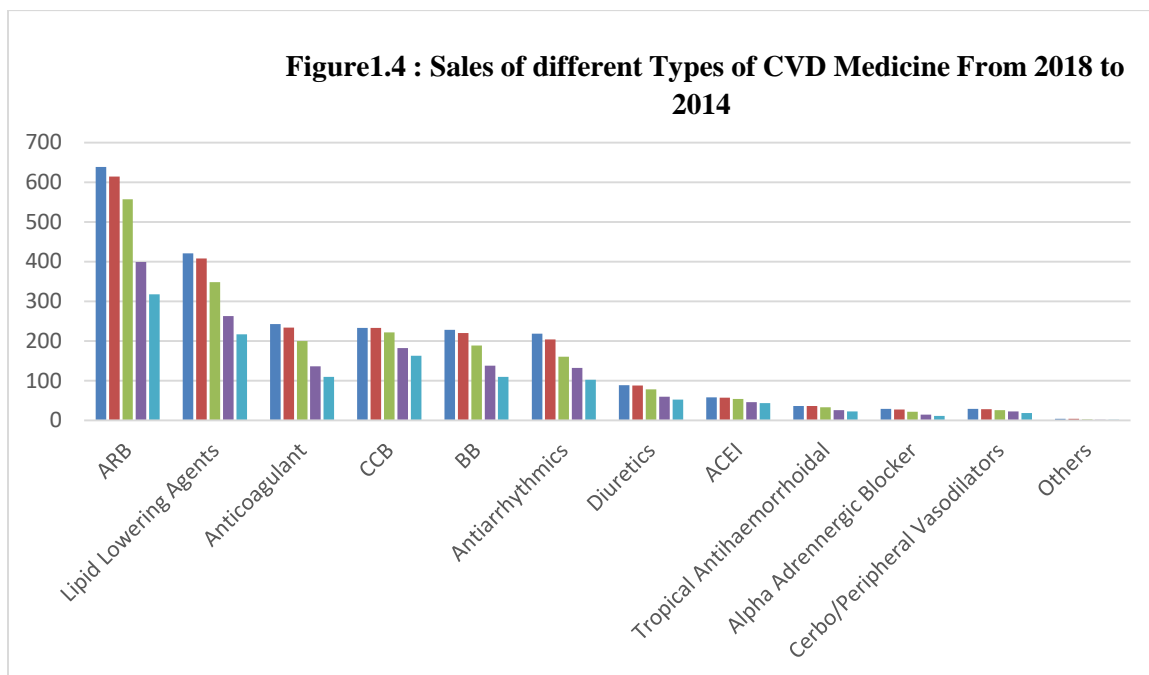
Myocardial infarction or heart attack occurs due to the disruption of blood supply to a part of the heart.

Angina pectoris is the lack of blood supply and oxygen to the myocardium that causes chest pain due to ischemia. When brain cells die owing to a lack of blood supply, a stroke occurs. Sales of different types of Cardiovascular medicines available in pharmaceutical market of Bangladesh (2014-2018) have been given in the following table 1.7 and figure 1.4. The table 1.11 shows the top 50 Brands of Cardiovascular medicines in Cardiac Market of Bangladesh with generic name, company name, and market share and market Price

Table 1.7 Sales of different types of Cardiovascular medicines available in Pharmaceutical Market of Bangladesh (2014-2018)

Different types of Cardiovascular Medicines	Market size (Cr)				
	Y 2018	Y 2017	Y 2016	Y 2015	Y 2014
Angiotensin receptor blockers (ARB)	638.95	614.53	557.14	398.8	317.43
Lipid Lowering Agents	420.88	408.1	348.4	262.8	216.7
Anticoagulant	242.98	233.8	200.1	136.4	109.4
Calcium channel Blocker(CCB)	233.32	232.8	221.8	182.6	163.2
Beta Blocker(BB)	227.96	220.1	188.6	138	109.8
Antiarrhythmic	218.41	204	160.8	132.3	102.3
Diuretics	88.98	88	78.3	59.7	52.7
ACEI	58.24	57.38	54.36	45.78	43.84
Anti haemorrhoidal	36.64	36.3	33.3	25.5	22.8
Alpha Adrenergic Blocker	29.12	27.7	22.2	14.3	11.1
Peripheral Vasodilators	28.79	28.6	26	22.8	19
Others	4.25	3.8	2.2	1.8	1.5

Source: Prepared by Researcher from IMS data



Source: Prepared by Researcher from IMS data

Angiotensin Receptor Blockers (ARB) are a drug class of antihypertensive which were the most commonly prescribed therapeutic groups from the years 2014 to 2018.

The key brands of the cardiac market are B1ZORAN, OSARTK, ANGILOCK, BISOLOL, FIXOCARD, OSARTIL PLUS etc. The lipid lowering category of cardiac drugs remained the second largest in sales which was Taka 216.7cr in 2011 and Taka 420.88 in 2018. ATOVA & ROSUVA are the two block busters supplied by Beximco and Servier Pharmaceutical companies respectively.

Anticoagulants recorded Tk. 109.4 Cr and Tk. 242.98 Cr in sales in the years 2014 and 2018 respectively. The sale of CLOPID produced by Drug International is number one in this segment (Taka 28Cr) in 2018. Calcium Channel Blockers, and Beta Blockers are in the 4th and 5th positions respectively according to sales in the cardiac market. The sales of different types of cardiovascular medicines such as Angiotensin Receptor Blockers (ARP), anticoagulant, lipid lowering agents, calcium channel blockers, Beta Blockers, Antiarrhythmic, Diuretics, Angiotensin Converting Enzyme Inhibitors (ACEI),

Anti haemorrhoidal, alpha Adrenergic Blocker vasodilators & others have been shown in the tables 1.8, 1.9, 1.10 and figures 1.5, 1.6, 1.7 respectively.

Combination cardiovascular medicines such as ARB combination, ACEI combination and CCB combination have found an increasing sales trend in comparison to the plain ARB, ACEI & CCBs. The tables 1.8, 1.9, 1.10 and figures 1.5, 1.6, 1.7 are shown below from year 2010 to 2018. Reasons behind the increased sales of combination medicines are dual action or effectiveness. (ZARB, BACEI, HCCB).

Table 1.8 : ARBs plain and combination drug market size

Year	ARB plain (Cr. Taka)	ARB Combination (Cr. Taka)
2010	65	46
2011	87	70
2012	115	102
2013	136	138
2014	154	163
2015	169	194
2016	241	286
2017	278	323
2018	313	382

Source: Prepared by Researcher from IMS data

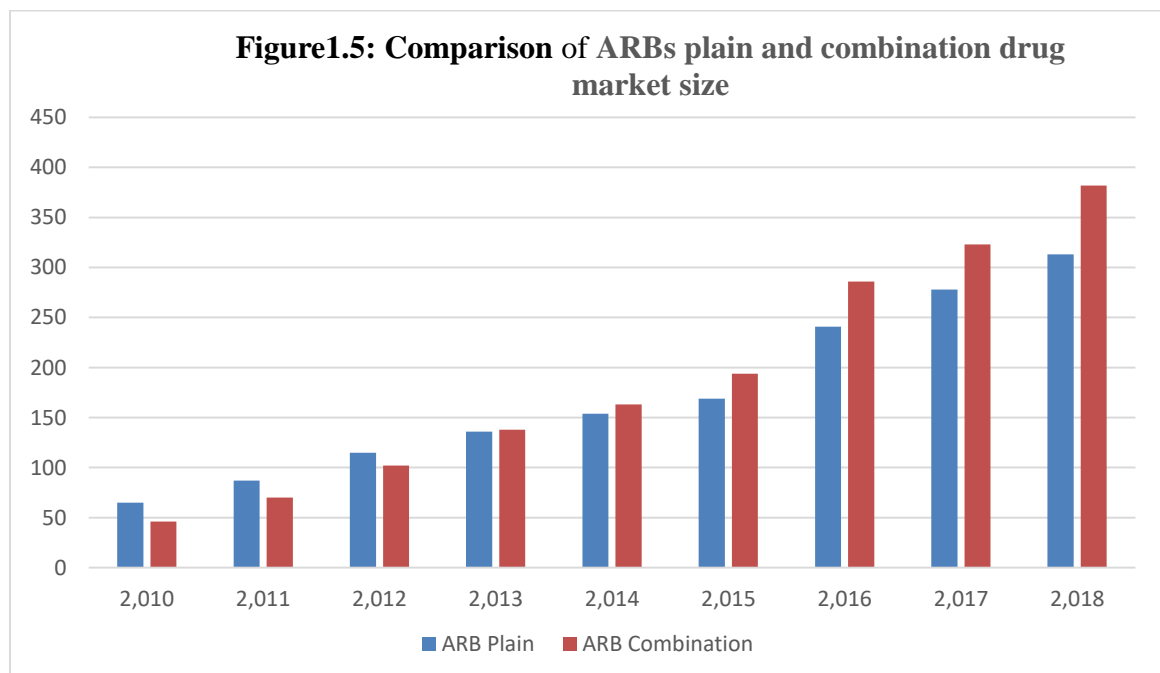


Table 1.9: Comparison between ACEIs Plain and combination drug market size

Year	ACEI Plain(Cr. Taka)	ACEI Combination(Cr. Taka)
2010	5	27
2011	6	31
2012	7	31
2013	7	31
2014	7	30
2015	7	30
2016	8	37
2017	9	38
2018	10	39

Source: Prepared by Researcher from IMS data

Figure 1.6: Comparison between ACEIs Plain and combination drug market size

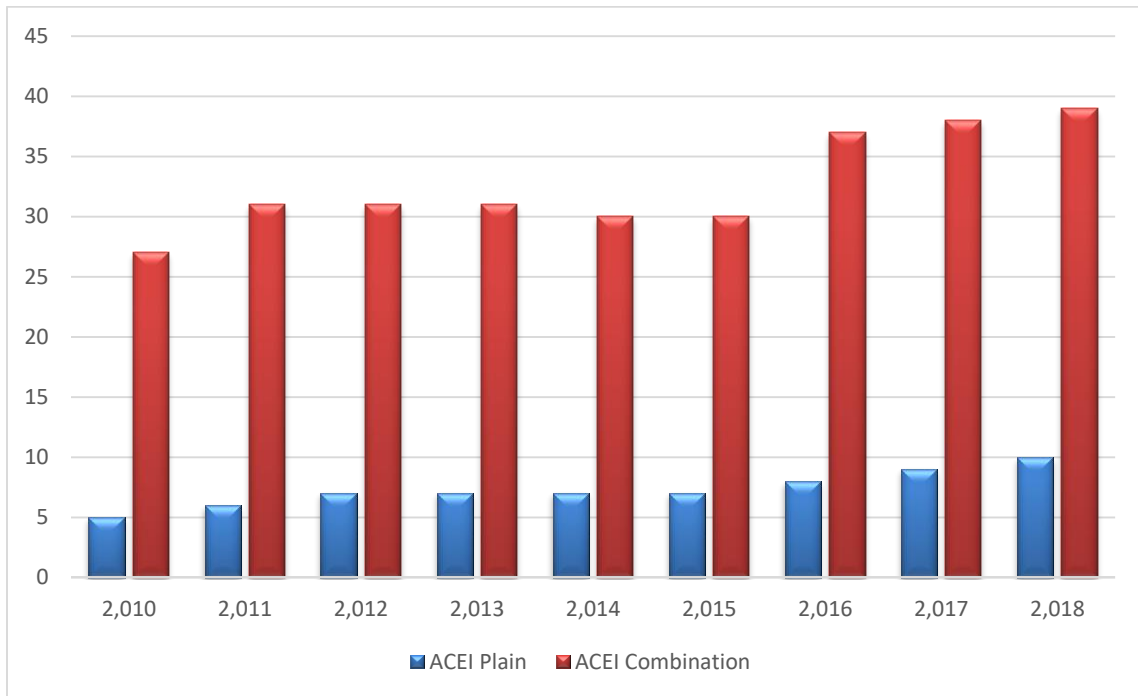


Table 1.10 : Comparison between CCBs Plain and combination drug market size

Year	CCB Plain(Cr. Taka)	CCB Combination(Cr. Taka)
2010	43	60
2011	51	75
2012	57	92
2013	61	99
2014	57	105
2015	61	113
2016	74	139
2017	90	143
2018	97	142

Source: Prepared by Researcher from IMS data

Figure 1.7: Comparison between CCBs Plain and combination drug market size

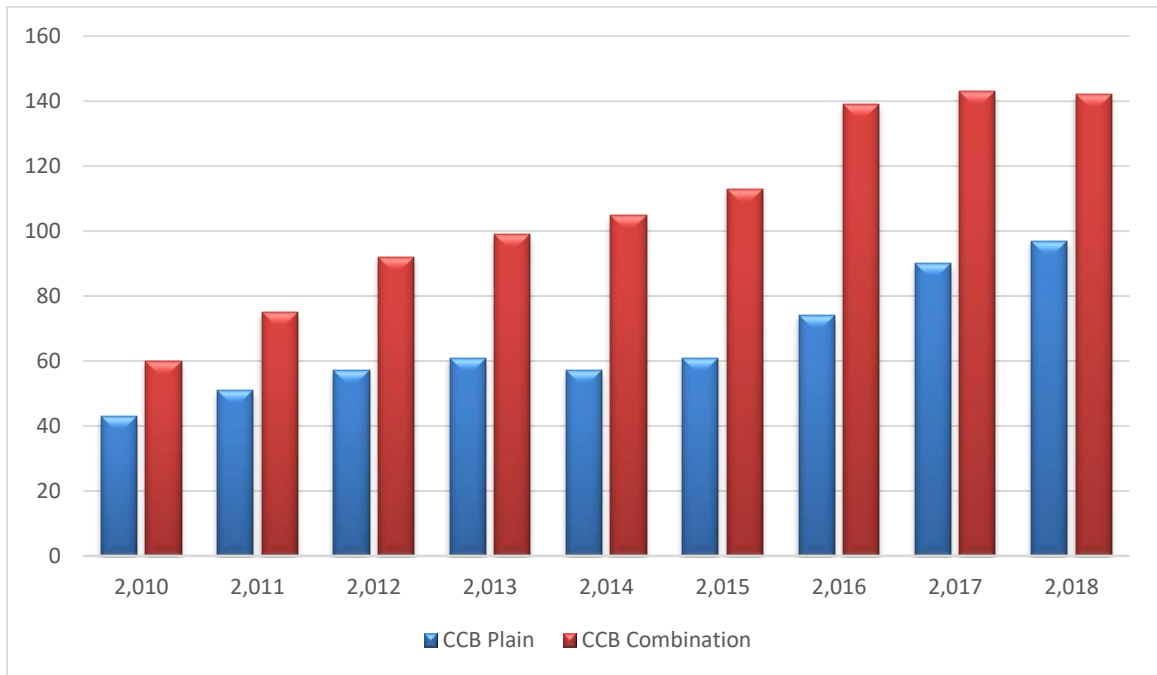


Table 1.11: List of Top 50 Brands of Cardiovascular medicines in Cardiac Market of Bangladesh with generic name, company name, and market share and market Price per tablet (Average weight:10-75mg) from IMS data and DIMS (2019)

Si.	Brand Name	Generic Name	Company	Market Share (%)	Market Price per tablet (BDT)
1	ATOVA	Atorvastatin	Beximco	3.88%	18
2	BIZORAN	Amlodipine+Olmesartan	Beximco	3.37%	8
3	OSARTIL	Losartan	Incepta	3.36%	8
4	ANGILOCK	Losartan	Square	2.57%	3.52
5	BISLOL	Bisoprolol	Opsonin	2.53%	16
6	FIXOCARD	Amlodipine + Atenolol	Incepta	2.31%	5.2
7	OSARTIL PLUS	Losartan + Hydrochlorothiazide	Incepta	2.22%	8
8	ANGILOCK-PLUS	Losartan + Hydrochlorothiazide	Square	1.87%	12
9	ROSUVA	Rosuvastatin	Square	1.82%	30
10	VASTAREL	Trimetazidine	Servier	1.58%	8.83
11	AMDOCAL	Amlodipine	Beximco	1.54%	7
12	ABECAB	Amlodipine+Olmesartan	ACI	1.33%	11
13	CLOPID	Clopidogrel	Drug International	1.24%	12.05
14	AMDOCAL-PLUS	Amlodipine + Atenolol	Beximco	1.14%	5.23
15	ABETIS	Olmesartan	ACI	1.13%	9
16	NIDOCARD	Nitroglycerine	Drug International	1.11%	7.05
17	TIGINOR	Atorvastatin	Incepta	1.09%	18
18	METACARD MR	Trimetazidine	Aristrophaarma	1.07%	7
19	ROSUTIN	Rosuvastatin	Beximco	1.05%	20
20	OLMESAN	Olmesartan	Beximco	0.91%	8
21	FRULAC	Frusamide+Spironolactone	Orion	0.84%	3
22	NITRIN	Nitroglycerine	Healthcare	0.81%	5
23	AVAS	Atorvastatin	Opsonin	0.81%	18.07
24	AMLOSARTAN	Amlodipine + Valsartan	Incepta	0.79%	9
25	CLOPID-AS	Clopidogrel+Aspirin	Drug International	0.79%	12
26	TENOCAB	Amlodipine + Atenolol	ACI	0.71%	5.27
27	ANZITOR	Atorvastatin	Square	0.70%	12
28	CILDIP	Cilnidipine	Opsonin	0.68%	
29	LOPIREL PLUS	Clopidogrel+Aspirin	Incepta	0.66%	12
30	BISOCOR	Bisoprolol	Square	0.65%	10
31	OLMEZEST	Olmesartan	SPI	0.64%	8.07
32	PRAZOPRESS	Prazosin	Unimed Unihealth	0.63%	6
33	BISOPRO	Bisoprolol	Incepta	0.61%	10
34	INDEVER	Propranolol	ACI	0.61%	1.50
35	LOPIREL	Clopidogrel	Incepta	0.59%	12
36	CAMLODIN-PLUS	Amlodipine + Atenolol	Square	0.58%	5.02
37	ATASIN	Atorvastatin	ACI	0.57%	18.12
38	ANCOR	Bisoprolol	Aristrophaarma	0.57%	16
39	RAMORIL	Ramipril	Incepta	0.55%	12
40	CAMLOSART	Amlodipine+Olmesartan	Square	0.55%	8.03
41	CALNOR	Amlodipine+Olmesartan	Opsonin	0.54%	8
42	PLADEX	Clopidogrel	Unimed Unihealth	0.53%	12
43	ROCOVAS	Rosuvastatin	Incepta	0.51%	15
44	ANCLOG	Clopidogrel	Square	0.51%	12.03
45	ABETIS PLUS	Olmesartan + Hydrochlorothiazide	ACI	0.50%	9.05
46	ATV	Atorvastatin	Delta	0.50%	10
47	ROSU	Rosuvastatin	Popular	0.50%	30
48	BETALOC	Metoprolol	Drug International	0.49%	1.55
49	CARVISTA	Carvedilol	Incepta	0.48%	8
50	PROSAN	Losartan	Beximco	0.46%	4.5

Source: Prepared by Researcher

1.5 Justification for the study

Impact of Marketing Strategies and Techniques offered by Pharmaceutical companies for customers' satisfaction and sales performance, is very essential for survival in highly competitive market today. However, the perception or satisfaction level of customers is not the same as how the managers perceive them. Marketing managers often think in term of the company's point of view to attract their customers in the management of diseases and to outcompete their competitors. If the customers are not satisfied about the attributes of 4Ps' strategies that are important for them, they can help the company to figure out how to deploy 4Ps' strategies to satisfy them. Strategy development of an optimal Marketing Mix is a combination of four marketing variables. These are product, price, place and promotion which help to achieve marketing goals providing the right product at the right price, at the right place with right information.

Among the 15 different therapeutic segments of the Pharmaceutical market, the cardiac market segment has been selected for research to analyze because the impact of Marketing Strategies and Techniques on all different therapeutic segments will be time consuming, costly and will involve huge manpower. Generally, the number of cardiac patients is increasing due to changing food habit, stress in workplace, and life style of people in Bangladesh and all over the world.

According to Health bulletin statistics from year 2012 to 2016 cardiovascular disease is number one cause of death in Bangladesh. Current prevalence of hypertension, coronary artery disease, rheumatic heart disease and stroke is 20-25%, 4-6%, and 0.3-1% respectively (Bangladesh Heart Journal, 2016). Sales of cardiac medicines were TK. 658cr. in 2011 which has been increased to TK. 2104 cr. in 2018. Thus, high market growth of cardiovascular medicines over the last few years has made the cardiac market attractive to invest for the suppliers (IMS data2011-18). In the present study, gap analysis between customers' satisfaction level and Marketing Strategies and Techniques offered by Pharmaceutical companies has been conducted.

Recommendation will be given to minimize the dissatisfaction of customers regarding Marketing Strategies and Techniques of Pharmaceutical companies for a better health care service to the cardiac patients.

Government can develop policies about the current situation from the point of view of the cardiac patients and other stakeholders

1.6 Problem statement:

For Cardiac Disease Management, the doctors try to diagnosis the type of disease first then prescribe cardiac medicines to cardiac patients. As the number of cardiac patients increase, it creates a demand for medicines and doctors' prescription encourage the retailers to stock the medicines for the patients.

However, poor Marketing Strategies and Techniques effect on Doctors' Dissatisfaction to prescribe cardiac medicines for cardiac patients. Dissatisfaction of Doctors regarding the poor quality of cardiac medicines, high price, lack of communication of Pharmaceutical companies with doctors and unavailability of cardiac medicines in retail pharmacy affects doctors' selection of cardiac medicine negatively. Patients are the ultimate end users who face the problem of purchasing the right medicine at the right place at a reasonable price to get relief from cardiac diseases. As a result, Marketing Strategies have an impact on Sales of Pharmaceutical companies.

1.7 Research Questions

- To what extent Product Strategies affect Stakeholders' Satisfaction and Sales?
- To what extent Pricing Strategies impact on Stakeholders' Satisfaction and Sales performance?
- To what extent Promotional Strategies impact on Stakeholders' Satisfaction and Sales growth?
- To what extent distribution network effect on Stakeholders' Satisfaction and Sales growth?
- Is there any gap between the Overall Satisfaction about Marketing Strategies and Techniques and Stakeholders?
- Are the impacts of Marketing Strategies and Techniques of different Pharmaceutical companies same?

1.8 Objectives of the study:

The broad objective of the research is to evaluate the impact of Marketing Strategies and Techniques on the Pharmaceutical Cardiac market in Bangladesh to represent whole Pharmaceutical market as a model.

Specific objective of this research study includes

- To evaluate the impact of Product Strategies of cardiac medicines on Stakeholders' Satisfaction and Sales.
- To assess the impact of Pricing Strategies of cardiac medicines on Stakeholders' Satisfaction and Sales.
- To find out the impact of Place Strategies of cardiac medicine on Stakeholders' Satisfaction and Sales.
- To determine the impact of Promotional Strategies of cardiac medicines on Stakeholders' Satisfaction and Sales.
- To compare the Satisfaction of Stakeholders about Marketing Strategies and Techniques of market leaders, challengers, followers and niches in Pharmaceutical market.
- To analyze the gap between the Overall Satisfaction about MST and Stakeholders

1.9 Synoptic View of the Study

This study is divided into five chapters as follows-

Chapter 1 includes the introduction to the study, background of the study, Overview of Pharmaceutical Market of Bangladesh, Overview of Cardiac Market Segment, Justification of Study, Problem Statement, Research Questions and Research Objectives.

Chapter 2 covers relevant Literatures Review. The objectives of this chapter are to clarify the Customers (Doctors), Consumers (Patients) and Marketing Professionals (Sellers) of Pharmaceutical market and important stakeholders. They represent main components of Pharmaceutical market. It conveys different relevant theories like theory of Customer Satisfaction, Expectancy Disconfirmation theory, Kano Model, Cognitive Dissonance

theory and Teboul model. This chapter also discusses on Pharmaceutical Marketing Strategies and Techniques, Push-Pull Strategies, Market Segmentation, Targeting and Positioning Strategies, Marketing Mixed Strategies and Competitive Strategies to gain competitive advantages. This chapter highlights the necessity of the present study in the form of the Research Gap that have found from the literature review. Based on the Research Gap specified the Conceptual framework/model of the study is drawn and hypotheses of the research are fixed.

Chapter 3 includes the Research Design, Description of the whole research process. It includes Research Methodology, Sample Size determination from Target Population of three categories Stakeholders and Sampling Techniques for Doctors, Marketing Professionals and Patients. It describes Qualitative Exploratory Research through in-depth interviews with doctors, marketers, patients and academicians to gain a deeper understanding of Stakeholders' Satisfaction about Marketing Strategies and Techniques and its impact on Sales performance of the Pharmaceutical companies. On the basis of Exploratory Research, Literature Review and Pilot survey, Questionnaires for the Research were developed. Reliability and Validity of the Questionnaires were mentioned.

Chapter 4 presents the Factors Analysis, interpretation of Rotated Component Matrix result to answer the objectives of this research. The analysis of process has been detailed out and usage of SPSS has been highlighted to arrive at the factors which have been interpreted in details. This chapter includes various tests like KMO, Bartlett's tests, goodness of fit of the model and concludes with Research Hypothesis testing by Regression Analysis for Statistical Significance.

Chapter 5 proposes Conclusions and Recommendation on the basis of the results retrieved from the survey questionnaires of the study. The factors were named as Medicinal benefit, Economic benefit, Convenience benefit and Communication relationship benefit that impact on Stakeholders' Satisfaction and Marketing Professionals' Satisfaction about Sales of Pharmaceutical companies. Next to all these, it includes contribution of the research, limitation of the study, and future scope for research. At the end of this thesis there are references and appendices.

CHAPTER TWO

LITERATURE REVIEW

2. Literature Review

The literatures relevant to the theories and concepts for developing conceptual model and hypotheses for this study are divided into five sections.

1. Doctors(Customers), Patients (Consumers) and Marketing Professionals (Sellers)
2. Relevant theories of Customers' Satisfaction (Kano model, Expectancy theory, Disconfirmation theory and Teboul model)
3. Pharmaceutical Marketing Strategies and Techniques, Push-Pull Strategies, Segmentation, Targeting, and Positioning Strategies (STP Strategies), Marketing Mix Strategies, Competitive Strategies.
4. Research Gap
5. Hypothesis Development and Conceptual Framework (Medicinal issues, Economic Issues, Convenience Issues and Communication Relationship Issues)

2.1. Doctors (Customers), Patients (Consumers) and Marketing Professionals (Sellers)

Customers are primarily of two types- those who buy for their own consumption and those who buy for the consumption of someone else. Marketers usually position their messages to target either of the aforementioned types of customers. Given the unique role of the physician as a customer, the Marketing Strategies used by the pharmaceutical industry radically differ from that of other industries. The primary reason is that the physician acts as an intermediary on the patient's behalf. The physician here is the decision maker who diagnoses the patient and accordingly, identifies the product category (segment or plan) and selects a specific brand among a vast array of alternatives in the market. But even though the physician is the agent who makes the decision on the patient's behalf, in the end, it is the patient who has to use the selected product and takes responsibility of paying

for it (Gonul,2001). Their indirect reward for prescribing a specific product may be through the perceptible improvements of the patient's health. In some cases, doctors receive promotional incentives from manufacturers of that specific product.

Physicians have thus, due to their role as intermediaries and key decision makers, have become the chief targets of the marketing activities of pharmaceutical companies. The very metric against which pharmaceutical companies' measure their marketing success is by the volumes of medicines sold as a consequence of the frequency of prescriptions written down by physicians prescribing their products. Prescriptions in actuality indicate the recognition of a physician that the said product is the best alternative to treat the patient or is at least a good alternative, worthy of a closer appraisal.

Marketing has a clear effect on the practice of physicians. The marketers have to interact with the pharmaceutical industry frequently and in diverse settings and fashions. That is, in the form of CMEs, conference travels, research funding etc. (Wazan, 2000). However, it is not easy to evaluate the extent to which the interaction between doctors and Medical Representatives will benefit the interests of the patients. However, notifying physicians about the clinical efficacy data, interactions and safety data and cost effectiveness data of their available pharmaceutical products is very important. These fall under the legitimate marketing factors of pharmaceutical companies. Thus it is necessary for doctors to get access to these clinical data which will help them undertake better decisions.

The application of irrational and unethical factors pertaining to patient care should be avoided by pharmaceutical marketing. These unethical factors include incentives like gifts, biased information and activities of motivation or maintaining relationship with physicians (Biswas K et al., 2016). Even though these are standard and acceptable practices within the field of marketing, it clearly goes against the demands of medical ethics and therefore, should be excluded. WHO (2004) estimates most of the medicines are inappropriately and irrationally prescribed in developing countries (Richard and Agyeman, 2016). These may ultimately lead to the prescription of costly and unnecessary medicines. It may influence irrational prescription of drugs. The main purpose of marketing visits should be to inform physicians about the recent information about the companies. The physicians have the

option to listen to the marketing pitch of sales representatives that aim to advertise the positive sides of the medicines. However, physicians are not bound by any regulations inflicted upon them through these marketing visits and are allowed to independently prescribe rational medication. But at the same time, the physicians must also display prudence by taking the extra time to review all the accompanying safety and contra indication data as well (Jibson, 2007).

These interactions should be governed primarily by the regulatory body. However, companies have also the duty of forming policies that ensure their employees operate within the regulatory laws.

Physicians and Pharmaceutical industries have convergent interests when it comes to providing safe and effective medication to patients even though they differ in their practices. Interactions between them are therefore, almost unavoidable, but at times, can lead to conflicts of interests (Kerridge, 2008).

Pharmaceutical manufacturers and their proponents demand that it educates doctors and patients about health condition and availability of treatments. It improves the compliancy of medical care through a number of relevant diagnosis and treatment of diseases (Batchlor, 2003). There is a fundamental difference between marketing and medical education and they should not be conflated with one another.

Gifts (Promotional incentives) have been the topic of extensive controversy and research. Occasional guidelines or policy actions have been formulated against it as a preventive measure. There is an overwhelming consensus among researchers that gifts do indeed have a clear effect on physicians' decision-making process even when they do not believe it to be so and even when the said gifts are of negligible value (Katz et al., 2003). Patients have a negative perception of gifts to doctors. Therefore, physicians request something more ambiguous like free samples. This does not benefit physicians directly but can be of tremendous value to the relatively non affluent patients who are unable to afford a potentially helpful medication (Jibson, 2007). If necessary, free samples of legally

available drugs may be provided on request to prescribers, in modest quantities of course (WHO: criteria for medicinal drug promotion, 1986).

Marketing Professionals (Sellers or marketers), the employees who are working in the department of Pharmaceutical Marketing are organized according to the organizational structure. Country General Manager is the top authority in the marketing management system. Under this position, the marketing manager works. Assistant managers, managers of different strategic business unit or therapeutic units, business development manager, communication manager, market research analyst work under the supervision of the marketing manager as a team (Dogramatzis, 2002). They develop Marketing Strategies and Techniques to achieve the targeted market share through the implementation of a set of action plans (Hoo, 2017). The product managers of Strategic Business Unit lead the Marketing Professionals to work together to achieve the goals of therapeutic unit. The Marketing Professionals are medical affairs manager, product managers and sales manager. Sales manager leads and coordinates the activities of Medical Representatives (MR) to communicate with the doctors (Garofalo,1998). Product or Brand managers are the key personnel who actively work for the development of the product, premarketing, marketing and management of the different stages of the Product Life Cycle (Dogramatzis, 2002).

The organizational structure of the marketing department is more or less the same worldwide and in Bangladesh. The responsibilities of product managers include managing and improving existing products, developing new product, monitoring the feedback of product performance from doctors and patients' satisfaction (Wilson, 1998). They develop a Pricing Strategy by monitoring the sales of different stages of the PLC and prepare a sales forecasting by taking into account the internal and external factors that may affect sales (Smith, 1991). The product managers have to maintain liaison with the production department, be involved in public relation, promotional activities, and communication relation with opinion leaders (Professors of Medical colleges), supervising the trial and testing of product launching and provide training and support of medical representatives (Dimitris, 2002).

The present study represents the Marketing Professionals who are general managers, product managers, brand managers, marketing executive officers, sales managers and medical representatives of cardiac therapeutic segment.

2.2. Relevant Theories

2.2.1 Customer Satisfaction (Doctor Satisfaction)

The most important and popular research topic is Customer Satisfaction (CS) which has received wide spread attention (Swenson,1997; Farayabi et al., 2010). The importance of Customer Satisfaction in Marketing Strategies is a prominent issue which cannot be overlooked (Yang and Peterson et al., 1997) Customer Satisfaction is one of the customer retention strategies which companies need to follow (Guo and Xiao, 2009). In this era of global competition, it is evident that all pharmaceutical companies are facing fierce competition. To gain competitive advantage over competitors, pharmaceutical companies can use physician's satisfaction as a vital tool (Raza et al.,2012). In Bangladesh, the significance of Customer Satisfaction is a new topic of marketing.

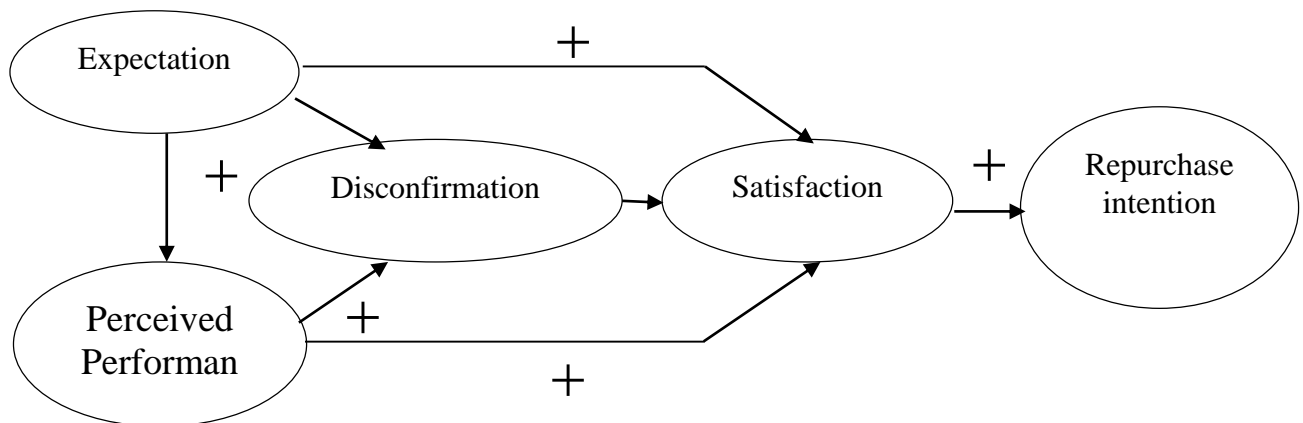
According to several researchers, Customer Satisfaction can be explained as an evaluative outcome of perceived value of a customer's consumption experience. (Cadott et al.,1987). Customer Satisfaction is described as the overall evaluation of local medicines by the physicians' experience of consumption by patients through prescription for a prolonged period of time (Formell,1992). Therefore, Satisfaction is defined as the overall assessment of every aspect of a medicinal product in the field of Pharmaceutical industry. Direct customers of Pharmaceutical companies are physicians who primarily interact with Medical Representatives (Kalaskar et al., 2012). It is not an exaggeration to imply that physicians are extremely powerful who have the legal authority to control access of the medicine to the patients. Customer Satisfaction is a significant criterion for doctors' loyalty towards Pharmaceutical companies. It is necessary to comprehend the needs and behavior of physicians and companies. Perceived value leads to physicians' satisfaction and there is a correlation between the two variables. Wood D F believed that perceived value represents the higher and more abstract level of evaluation of satisfaction regarding the quality of medicinal products (Wood, 1997). This particular concept facilitates the development of marketing techniques which builds the image of a company which ultimately leads to a

better market share and sales growth (Tsiotsou, 2005). Product quality is the antecedent of customer satisfaction (Cronin, et al. 2000). Positive value is received by physicians that reflect their satisfaction whereas negative value represents their dissatisfaction (Haque et al., 2003).

2.2.2 Theory of Expectancy Disconfirmation (EDT)

Disconfirmation of expectation represents the difference between two values- initial expectations and perceived experience. Disconfirmation will be positive when perceived performance is higher than expectation and disconfirmation will be negative when it is lower (Oliver, 1999).

Figure 2.1: Expectancy Disconfirmation (EDT)



Repurchase intention is another important factor which is influenced by the customer's satisfaction or dissatisfaction. If the customer is satisfied, then the customer will be motivated to repurchase and if the customer is dissatisfied then he or she will be demotivated to repurchase. Therefore, it can be said that ultimately satisfaction affects the loyalty behavior of the customers (Oliver, 1999). The figure2.1 represents the Expectancy Disconfirmation (EDT) theory.

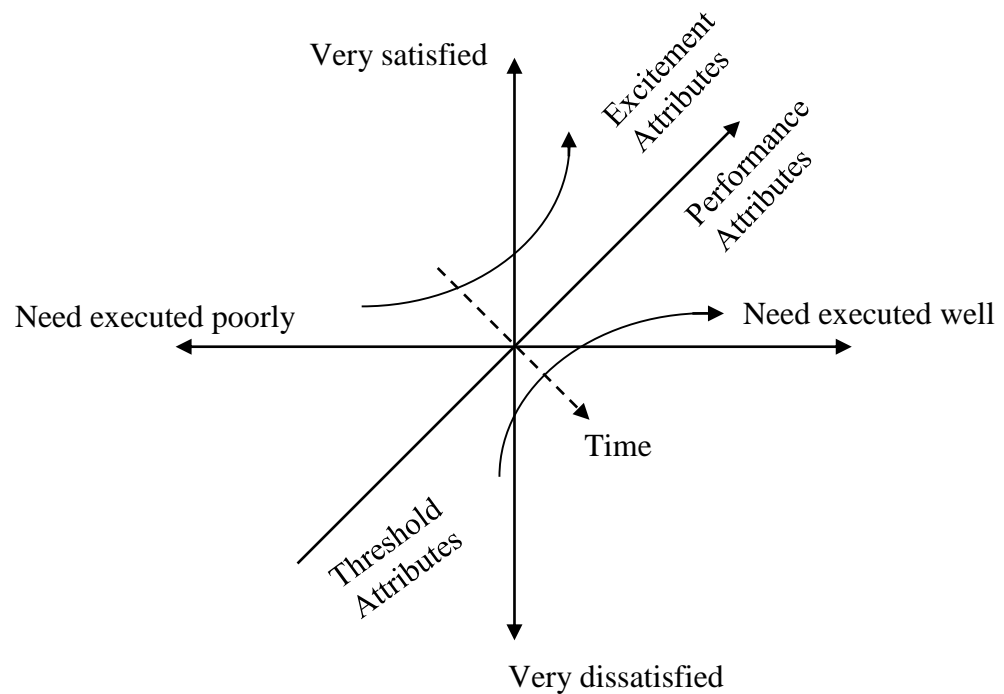
Hence several factors can affect the expectation and real perceived performance of the pharmaceutical companies which will affect the doctors and patients' disconfirmation

positively or negatively. In this way, it will affect their level of satisfaction and ultimately, the prescription generation for sales of prescribed medicines.

2.2.3 Kano Model of Customer Satisfaction

Among the most relevant theories, Kano model nicely represents customer satisfaction from the organizational perspective. This model was developed in 1980 by Noriaki Kano and his colleagues. In the model customer satisfaction, they classify attributes based on customer perception and its relation with the given extent of satisfaction (Kano et al. 1984). Kano model mainly highlights three different attributes that ranges from basic attribute to spoken or performance attributes to delight attributes (Bilsen and Sevtap, 2011). Kano model represents the satisfaction of customers for performance, excitement and threshold attributes which is a reflection of how well each function is executed. Competitive advantage over competitors can be achieved via excitement attributes which depicts the greatest customer satisfaction. Kano Model of Customer Satisfaction has been shown in the figure 2.2.

Figure 2.2 Kano Model of Customer Satisfaction



In addition, in the Kano Model, customer satisfaction against the perception of attribute performance is determined. In the current study Kano Model validates the idea of

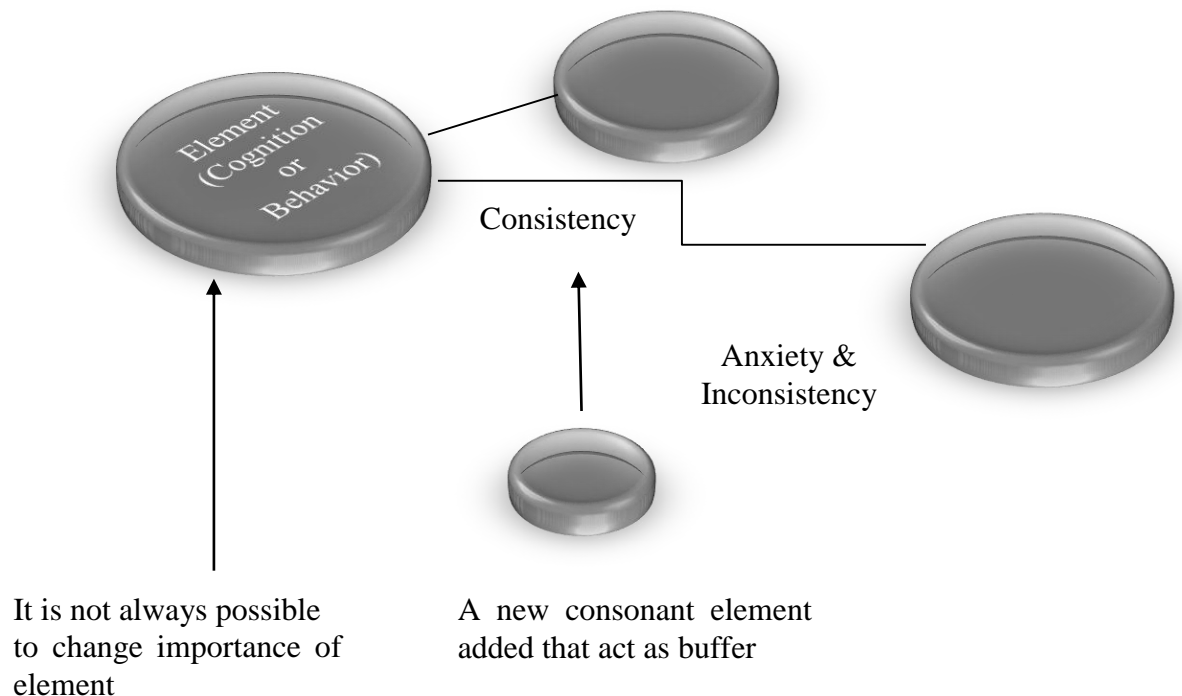
comparison between the levels satisfaction of three different types of Stakeholders (Doctors, Patients and Managers) in the Pharmaceutical industry.

2.2.4 Cognitive Dissonance Theory

By holding two different sorts of factors in determining the satisfaction, cognitive dissonance arises in the mind of the consumer as an uncomfortable feeling. Cognitive dissonance theory suggests that dissonance can be reduced by the motivation of customers in a way that it alters belief and behavior and ultimately, justifies them. The figure 2.3 represents the Model of Cognitive Dissonance Theory.

Festinger explained the theory of cognitive dissonance which can be incorporated into the research of consumer behavior. It is indicated as a psychological phenomenon which is not comfortable in nature and highlights the mutual relatedness of contradictory (non-fitting and/or dissonant) relations among the constituting relationships. In addition, the theory is useful to highlight the discomfort zone or area of the consumers particularly by analyzing their post purchase behavior (Festinger, 1957).

Figure 2.3 Model of Cognitive Dissonance Theory



Similar to the cognitive dissonance theory, the present study configures the level of Stakeholders' Satisfaction and the relative importance of these factors towards that satisfaction. In other words, the study also observes if stakeholders have contradictory feelings about the constituting factors when compared to one another.

In addition to this, in light of the cognitive dissonance theory, the present study observes the rationale of Stakeholders' Satisfaction towards the prescribing behavior as a post purchase action. In this way, the study finds the key points where the stakeholders are simultaneously satisfied and not quite satisfied with. The results give the key points to the policy makers to take necessary action to improve the overall Stakeholders' Satisfaction.

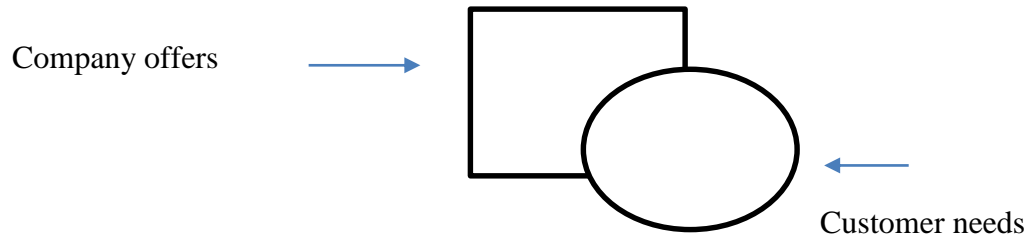
2.2.5 Teboul Model

Customers are an important asset to any organization. It could be a manufacturing or a service organization. Total Quality Management describes that the quality of a product can be assessed by customer satisfaction. Edward Deming mentioned that quality can be defined as meeting or exceeding the customer expectation and analyzing future requirement of the customers. The primary goal of the organization should be satisfying their customers as satisfied customers can only lead to increased sales and profit (Deming, 1982).

In Teboul theory, Customer Satisfaction Model is depicted by two symbols. Customer needs is represented by a circle and the product or service offered by the organization is represented by a square. If the circle and square coincide, this means that total customer satisfaction has been achieved and the aim is to cover the required performance better than their competitors. The square which lies within the circle is perceived as satisfying customer and the part outside the circle is considered as unnecessary. Customer feedback enables the organization to listen to the voice of the customer to identify customer dissatisfaction and the relative priority of requirements for improvement. The present study aims to understand the impact of Marketing Strategies and Techniques (MST) on Pharmaceutical cardiac market where cardiologists are direct customers, cardiac patients are consumers and Marketing Professionals are the sellers. The offers of the pharmaceutical companies are the attributes of the MST that can either satisfy or dissatisfy the doctors to

prescribe the cardiac medicines for their patients if they meet or do not meet the needs of the patients' cardiac disorder for a better life for themselves. The study focuses on the gap between the satisfaction level (Mean Score above 3) of stakeholders (Doctors, Patients and Marketing Professionals) and attributes of MST. The Teboul Model is given in figure 2.4.

Figure 2.4 Teboul Model



2.3.1 Pharmaceutical Marketing Strategies and Techniques

The definition of strategy given by Johnson and Scholes is “as the direction and scope of an organization over long term which achieves advantages for the organization through its configuration of resources within challenging environment, to meet the needs of market and to fulfill stakeholder’s expectations.”

Robert et.al described that an organizational strategy intends to create values for its stakeholders, customers and citizens (Robert et al., 2004). S.R Chaganti described strategy like a route or road that helps organizations to reach objectives that involves all aspects such as target customers, product attributes, allocation of resource mix and segment the organization on win attack (Chaganti,2005).

Tactics are the techniques that help to take the strategy to its desired destination. They are the specific action plans which include entire Marketing Mix Strategies, Product, Price, Place and Promotional (PPPP) attributes that impacts customer satisfaction (i.e., doctors) to prescribe medicines for patient’s use.

To reduce competition, a company develops competitive strategy by designing, planning and implementing company’s strategic activities that influence the marketing strategy of

the product (Day et al., 1988). Table 2.1 shows that Pharmaceutical Marketing Strategy and Tactics or Techniques.

Table2.1: Pharmaceutical Marketing Strategy and Tactics or Techniques

Marketing Strategies	Tactics or Techniques
Become market share leader	15 new sales representatives are hired and trained
Aim to increase sales by 20% every year	Visit key accounts once weekly
10% penetration of market in launch year	Prepare 3 new detail aids per year
Product awareness campaign to be achieved by 75%	Organize launch symposium
Aim to achieve Top 5 ranked sales force	Conduct 4 prescriber focus group
Market share to be captured by 40% within next year.	Conduct campaign
Try to achieve fast product reimbursement	Distribute 1000 new product gimmicks

(Source: Dogramatzis D, Pharmaceutical Marketing ,2002)

2.3.2 Push- Pull Strategies

Push-Pull strategies have been found to be successful for all kinds of products and are very useful for prescription drugs like cardiovascular medicines (Chaganti,2005). Manufacturers of cardiac medicine attempt to create a demand for their medicines by persuading the cardiologists and doctors through their sales team (Medical Representatives). They do this by assuring doctors about the benefits of the medicines and providing them promotional incentives like free samples, gifts, funding for attending seminars, conferences (home and abroad) on the exposition of the function, efficacy, mode of action and other features of the drugs they want to sell (Kumar, 2013). These policies help to generate prescription for the patients. The patients in turn, buy the medicines from the retail pharmacies. So pharmaceutical manufacturers pull the demand for the medicines from the doctors and at the same time Marketing professionals persuade wholesalers and

retailers to make sure that the stock of the prescribed medicines are available for the patients. The Push Strategy of manufacturers involve urging members of the distribution channels to sell drugs to consumers (i.e. patients) through promotional policies like discounts, gifts and displaying adequate samples in their store.

That is why a combination of the Push-Pull Strategies is useful for marketing medicines (Chaganti SR, 2005 and Kumar P 2016). It is applicable for cardiovascular medicines too.

Pull → (Doctors) Customers → Retailers → Wholesaler → Manufacturers

Push → Manufacturers → Wholesalers → Retailers → Customers (Doctors)

2.3.3 Segmentation, Targeting and Positioning (STP) Strategies

2.3.3.1 Market Segmentation Strategies

Pharmaceutical markets are very complex in their nature. According to S. R. Chaganti, market segmentation is the method by which pharmaceutical companies may gain a competitive advantage over their rivals. A marketing segment consists of a group of consumers with similar needs. This way, sellers will not only pay attention to what they produce but also to what the customer wants. Companies will thereby practice market segmentation through differentiated marketing to reach their target customers. There are four ways to segment a pharmaceutical market by considering demographic factors such as - age, sex, education and socioeconomic background of the consumers (Chaganti, 2005).

Market segmentation can also be achieved by considering the usage rate of drugs by consumers. There are heavy users, medium users, light users and non-users. Each category of users has separate needs from the others.

Perceived medicinal benefits are another way for market segmenting. According to marketing expert Levitt T, what the customer is looking for is not a product but bundle of benefits that it offers (Levitt, 1975). A target marketing strategy is formulated by market segmentation. This powerful tool or technique depends on how the companies gather, analyze and interpret the collected information in a meaningful way.

Dogramatzis D, described that segment strategies depend on marketing environment, regulatory environment, and product and company characteristics. The marketing environment represents the size and growth of the market, type of competition, number of physicians and patients in the Pharmaceutical market. The regulatory environment controls the cost and pricing policies, system of reimbursement and ethical issues of the medicine business. Product in different stages of the Product Life Cycle, branding and differential advantage are the components of product strategies that are also used for market segmentation. Corporate strategy, portfolio priority, company marketing expertise, resources and therapeutic categories are the elements of company characteristics for segmenting market (Dogramatzis ,2002).

Pharmaceutical marketing has two major potential target groups with different needs. Patients, even though they are the end users, have no decision-making power to purchase the medicine as consumers. On the other hand, doctors are the intermediate customers but it is they who are the ones who decide and advise patients through their prescriptions to purchase a specific drug. Segmentation in pharmaceutical markets consists of two steps.

Patients can be segmented by a) similar illness b) age group c) gender. Similar illness patients fall under the same therapeutic group. Such as- diabetic patients, cardiac patients, asthmatic patients, tubercular patients etc. Patients categorized by age group are pediatric patients, geriatric patients etc. Patients divided into sex categories are male and female patients. Diseases can be categorized by communicable diseases (Infectious, e.g. Diarrhea) and non-communicable diseases (e.g. Cardiac disease).

Doctors are segmented by specialty (e.g., surgeons, cardiologists, gynecologists etc.). Doctors can also be segmented by the location of their practice e.g., urban, rural, government, private etc.(Dogramatzis,2002). Cardiac market segments are rapidly growing and holding number 3 and star position in Market share- Growth matrix (IMS 2019).

2.3.3.2 Targeting Strategy for Market Segment Selection

Each company should analyze the situation and then target to select specific market segment by the process on which marketing efforts need to focus (Sollner and Rese, 2001).

Type of market, customer, competition and company's capability are the four aspects that require to be analyzed for targeting. Among the 15 different therapeutic segments, it is the cardiac market that is of special interest to Bangladeshi Pharmaceutical industries. This is because it has an astonishingly high market growth from Taka 658 crore at 2011 to Taka 2104 crore at 2018 over the previous five years (IMS data). Again, cardiac drugs are for lifelong usage. Cardiac diseases and related health issues are the number one cause of death in our country (WHO 2015). To gain a sustainable competitive advantage a company has to assess its resources and capabilities within this cardiac segment. This rapidly growing cardiac market has significant potential where cardiologists are its customers and cardiac patients are its consumers.

Doctors prescribe a particular brand of medicine of a specific company on the basis of their needs, wants, beliefs and impression about the company and also considering their capabilities, competition and performance in the general market. The STP model (Segmenting, Targeting and Positioning) is used in accordance with segment importance and chances of success. This is also applicable to pharmaceutical markets in general and cardiac markets in particular.

2.3.3.3 Positioning Strategy

More than 30 Bangladeshi Pharmaceutical companies produce cardiac medicines. Efficacy, Safety Information, Brand Image, Reputation of the company and New Medicines are the attributes of cardiac medicines to be evaluated to assess the satisfaction of the customers' needs. The company offer must occupy a unique and valuable position in the mind of target customers (Kotler, 1980). Cardiac market segment has a promising future in the Pharmaceutical market of Bangladesh. It is in the star position of Market Share-Growth Matrix. Marketing Mix Strategies, which are strategies and tactics employed to attract customers, should also match the needs of end users (cardiac patients).

2.3.4 Marketing Mix Strategy

In Modern Marketing theory, one of the most basic concepts that has attracted important attention from the academy and the business industry is Marketing Mix Strategy (Kotler,

1980). Customers, Competitors and Companies are the three factors that are required to define Marketing Strategy (Ohmae, 1982).

McCarthy defined Marketing Mix by 4Ps which are Product, Price, Place and Promotion. These are used by an organization to fulfill the requirements of its target customers. The elements of 4Ps are so important that the absence of any one may lead to the failure of the business (McCarthy, 1971). The objectives of Marketing Mix Strategies are to offer more values to the customers to develop a long term relationship (Kotler, P. Armstrong G, 2010). Marketing Mix can be considered as tools or techniques as well as strategies which are employed by Pharmaceutical companies to satisfy the requirements of physicians, pharmacists and patients (Prashant and, Kalaskar, 2012).

According to Kasic the Marketing Strategies applied by Pharmaceutical companies through 4Ps Strategies are: i) strategy of product helps to achieve market share and sales growth through promotional activities, research and development process to innovate new medicines which include market research and sales ii) place strategy of products expand geographic location of the market iii) pricing strategy includes acceptable and affordable price and iv) in order to compete in the market, the implementation of sales activities through promotional strategies(Kasic ,2009).

The components of Marketing Mix Strategies and the description of components are given in short for pharmaceutical medicines in table 2.2. The 4Ps are the important variables of Marketing Strategies and Techniques(MST) which help to attain marketing goals. The proper applications of product, price, place and promotional strategies on different stages of Product Life Cycle can lead to the success of the products and profit for the organization. Therefore, Marketing Mix Strategy is used as an essential element both for developing Marketing Strategy and Techniques.

Table 2.2: Components and Description of Marketing Mix Strategies for Pharmaceutical medicines

Product Strategy	Component	Description
	Product objectives	To reduce disease symptoms and hospitalization, to work efficiently and enjoy quality of life.
	Quality	To ensure active ingredient amount, efficacy, tolerability, packaging
	Safety	To warn about side effect, drug interaction, contraindication, Over dosage, existence of antidote
	Attributes	Formulation, taste, ease of use
Price strategy	Pricing objectives	To satisfy customer need and meet to competition. To abide by regulation and increase sales volume
	Customer demand	To develop customer perception and demand for increasing adoption rate and cover cost and make profit at different stages of product life cycle
	Competitive pricing	To compete with competitor pricing considering discounts, pricing leadership, price war and entry barriers
Place Strategy	Distribution Channel objective	To make medicines available, delivery frequency, condition of preserved medicines, inventory management and customer service
	Channel structure	Distributors (stockiest), wholesalers, retailers, agents, web dispensing
Promotion Strategy	Promotion objective	To inform and persuade doctors for reminding and prescribing about medicines. To apply push-pull strategy for target segment of the market
	Personal selling	Medicine detailing, to meet doctors' need, negotiation, maintaining relationship with doctors by regular visits
	Public relations	Awareness campaign events, press conference, exhibition, speeches, philanthropy activities
	Sales promotion	Incentives, display, coupons, promotion fulfillment, refunds, free samples etc.

(Source: Dogramatzis D, Pharmaceutical Marketing, 2002)

2.3.5 Competitive Strategies to Gain Competitive Advantage

Competitive Strategies that the company develops are programs designed to satisfy the needs of its customers. Customers (Stakeholders) evaluate them and form a perception of the product and its medicinal value. Competitive strategies seek a superior perceived value of their products in the eyes of their customers to gain a competitive advantage over their competitors. (Dimitris, 2002). This should be sustainable in the long-term and not be easily imitable. Sustaining competitive advantage depends on a company's resource and capabilities.

Elements required for gaining sustainable competitive advantages include superior company resources, superior company market position (reputation), superior knowledge and communication relationship in the market place. Product characteristics may serve as a base for sustainable competitive advantage. The benefit is twofold- customer satisfaction and increased sales.

Porter identified five competitive forces acting in the pharmaceutical industry which includes supplier's bargaining power, customer's bargaining power, the threat of substitute products and internal rivalry, the threat of new entrants (Porter, 1985). McCarthy introduced the 4P Marketing Mix Strategy which includes product, place and promotional strategies (McCarthy, 1971). 4Ps strategies are developed by marketing managers to attract customers and compete with rivals to increase sales growth and market share. It was suggested by Robert Lauterborn that the 4Ps of sellers should correspond to the 4Cs of the buyers (customer benefits, customer costs, convenient place and communication relationship techniques) in order to achieve sales goals (Lauterborn, 1990).

Philip Kotler and Keller suggested that the modern marketing techniques are people, process, program and performance of sale growth. Market people should also view their customers (doctors) as human beings in order to understand the psychology behind their prescribing decisions. The right set of tactics or techniques such as creativity, discipline, action programs are reflected in detail in the process. In order to create an impact on the sales performance positively, the process must be integrated with the 4Ps strategies. One

must continually assess profitable market opportunities of cardiac market segment in order to ascertain market potential and market forecasted demand (Kotler and Keller, 2009).

In order to survive in today's highly competitive market, the impact of Marketing Strategies and Techniques which represent 4Ps strategies offered by Pharmaceutical companies for Customer Satisfaction and Sales performance, is crucial. Their primary focus is on the customer's perspective. The customer's (Doctor) assessment of their strategies is reflected on their (Doctor) satisfaction level and the volume of sales of medicine.

Perception or satisfaction level of customers is not the same as how the managers assume the perception or satisfaction level of the customer to be. Marketing managers often mistakenly think in the terms of the company's point of view in order to manage disease and gain a competitive advantage over their competitors. But if the customers are not satisfied with the attributes or variables of their Marketing Strategies and Techniques, the company should alter their strategies and deploy new strategies in their place in order to match the demand and satisfaction level of its customers.

Pharmaceutical markets in Bangladesh are facing tough competition in each therapeutic segment for ever-increasing sales and market share. The current research is a quantitative and exploratory study of the Market Strategies of Pharmaceutical markets. The Pharmaceutical industry is a market driven, knowledge intensive and highly regulated sector (Dogramatzis, 2001). Here, the lack of innovation, short Product Life Cycle and cutthroat competition have made the industry challenging. That's why the marketers or marketing managers are becoming more competitive in each market segment. They have varied Marketing Strategies and Techniques to gain a competitive advantage over their rivals to capture different market shares each consisting of different Product Life Cycle (PLC) stages (Sharma, 2013)

2.4 Research Gap

In the last few years, there has been remarkable growth in the Pharmaceutical industry globally (Murshid et al., 2014). Pharmaceutical manufacturers are facing intensive competition to gain market share in this inventive and profit making high tech industry (Kestic, 2009). Unlike general consumer market, the pharmaceutical market is very complex and competitive (Chaganti, 2005). There are different stakeholders with different interests.

Consumers of the general consumer market buy different products such as food, cloth, soap, drinks, car etc. according to their needs. They take their own decisions depending on the affordability, availability and quality of the products (Dogramatzis, 2000 and Kumar, 2013) explained that pharmaceutical companies produce medicines as products for healthcare of patients who are consumers. Patients purchase medicines mostly with the advice of doctors if these are prescription drugs and without doctor's advice if it is nonprescription or Over The Counter (OTC) drugs.

Although OTC drug can be purchased by the patient without a prescription but in Bangladesh, people mostly rely on doctors' advice to buy any kind of drug.

According to the International Medical Statistics (IMS 2018), medicines of 15 different therapeutic segments of the Pharmaceutical market are being prescribed by doctors, the direct or intermediate stakeholders, who mediate sales through prescription.

Patients are indirect customers and important stakeholders who have no authority to take decisions to purchase medicines but rather follow the advice of doctors and purchase prescribed medicines (Smith,2002). So, the ultimate target customers of Pharmaceutical market are doctors who could be endocrinologists, cardiologist, nephrologists, oncologists, pediatric, geriatric, ophthalmologist etc. (Dogramatzis,2000).

Ango Hoo explained that the Marketing Professionals of Pharmaceutical companies are the Stakeholders who develop Marketing Strategies and Tactics to increase sales for achieving targeted market share. He found the positive impact of product quality, availability of drug, branding awareness, packaging services and distribution on market share considering marketing representatives as respondents in Malaysia (Hoo, 2009). But because of the

multifactorial dependency of the Pharmaceutical market, it is not only the marketers, but also some more influential stakeholders like doctors, patients etc.

There is little research on Marketing Strategies and Techniques containing Marketing Mix variables in Bangladesh. This type of research may be required to investigate the impact in differences in different countries and cultures like Bangladesh.

Kumar P and Sudhir S tried to explore the impact of Marketing Mix (4Ps) on existing and potential customers (Doctors) for Pharmaceutical products in the Indian Pharmaceutical industry. There are 10 known therapeutic segments in the Indian Pharmaceutical market which includes prescription drugs (82.2%) and nonprescription drugs (18.8%). Pharmaceutical companies used two models of distributions to market their products (Kumar and Sudhir, 2006). Firstly, push strategies by influencing doctors by marketing team to prescribe the medicines to the patients. Secondly, pulling the demand persuading wholesalers, retailers and by promotional strategies to keep medicines which are sold to patients. The study was carried out only as a qualitative research. There are a few empirical researches to find the impact of marketing mix strategies on doctors and patients satisfaction. There is a scarcity of this type of research in Bangladesh as well.

Rizwan, R.A and Jolita, V studied the relationship between physician prescription behavior and promotional tools such as detailed knowledge and skills of medical representatives, incentives, Continuous Medical Education (CME) for doctors in the context of Pakistan. Patients are paying for the medicines for their treatment (Rizwan and Jolita, 2014). Although patient's wellbeing is the center of any healthcare initiative, but because of unethical promotional practices it is very commonly compromised. In the context of Bangladesh, Biswas and Ferdousy also found similar results that the different promotional tools offered by pharmaceutical companies have an impact on a doctor's satisfaction to prescribe the medicines of a particular company (Biswas and Ferdousy, 2016).

Conor, G.E mentioned that promotional and pricing strategies have a significant impact on the pharmaceutical market in European countries (Conor, 2017).

4Ps theories of McCarthy are well accepted worldwide and a lot of empirical studies have revealed the impact of Marketing Strategies and Techniques on the Pharmaceutical market

that represent doctors' satisfaction and marketers' satisfaction in developed and developing countries. But there is still the need of developing a model which can be applied in the context of different countries. These types of researches are not sufficient to find the fact that is required to be found in Bangladesh. There have been a few published papers that provide a Conceptual Model of Marketing Strategies and Techniques from the point of view of the customers' perspective like doctors and patients in Bangladesh.

There are a number of researches and literatures in the perspective of developed countries. Stephen, P. R and Charles, E. P explained the Pharmaceutical Drug Marketing Strategies and Tactics in the United States. They analyzed the Pharmaceutical Drug Marketing Strategies and Tactics in the United States. They analyzed the pull strategy supplemented push strategy where direct-to-consumer (patients) advertising and sales promotions increasingly attracted patients to request the advertised brand drug from their physicians. A difference in perception regarding ethical considerations was found between doctors and sales representatives (Stephen and Charles, 2006).

There is little research in Bangladesh where two stakeholders like Doctors and Medical Representatives or Marketing Professionals were asked to evaluate the effectiveness of Marketing Strategies for further reexamination of Strategies.

Connor, E.G explained a variety of promotion tactics for the US pharmaceutical market such as detailing of the product by sales representatives, direct-consumer advertising, building product champions, rebranding and educational awareness programs and optimizing pricing for patients to achieve estimated market share in this qualitative research (Connor,2014).

Dean C.H. and Wilkee et al. stated in an empirical study of Marketing Strategies that it was to develop a defend strategy for pharmaceutical brands from generics in Australia. They suggested implementing strategies in reaction to competitors' strategies in advance of their entry (Dean et al.,2010).

The researchers conducted their studies in developed countries and Western settings that can be applied in other developing non-Western countries like Bangladesh.

The aims of the present study are to address these gaps of Product, Price, Place and Promotional Strategies of literatures to further explore the relationship of variables of 4Ps Strategies and Stakeholders' (Doctors, Patients, Marketing Professionals) Satisfaction and Sales in the context of Bangladeshi Pharmaceutical Market.

Neil, B. and Lyndon, S. suggested the development of mutually acceptable past marketing mix for effectiveness of Business to Business (B2B) like small and medium enterprises (SME) practitioners. This should be used as a basis for future marketing planning and a better understanding of the strategic linkage between marketing mix elements and customer groups in the United Kingdom (Neil and Lyndon, 2011). The elements of Marketing Mix are advertising, brochures, direct marketing, sales force, telephone, sales promotion, press, web, exhibition, conference, sales channels which were ranked as communicating offer for existing and potential customers.

Separate researches are conducted on different issues such as problems in Marketing Promotional Strategies, Pricing Policies, Doctors' Satisfaction and Factors affecting Sales etc. in Bangladesh.

There is insufficient research on the Marketing Strategies and Techniques that impact Stakeholders' Satisfaction and Sales in Bangladesh. Hence Stakeholders, especially the Doctors, Patients and Marketing Professionals who are involved directly in the Pharmaceutical Marketing process are to be taken for consideration for empirical studies to investigate the impact.

There is also a lack of research regarding Patients' Satisfaction about MST in the context of Bangladesh. Immediate empirical research is needed to overcome shortcomings in this field.

The Research Gap has been identified from an extensive literature review are given below:

- No study has focused on factors of Marketing Strategies and Techniques that impact Stakeholders' Satisfaction combined and individually (Doctors, Patients and Marketers)
- No study has focused on the Gap between the Overall Satisfaction about Marketing Strategies and Techniques and Stakeholders

- Study of impact of Marketing Strategies and Techniques on Sales in Bangladesh is very few
- Comparison of 4Ps Strategies of market leaders, challengers, followers and niches from the point view of the patients is not sufficient.

Consequently, the Research Gap has helped to develop Conceptual Model and conducting empirical research on these issues.

The impact of variables of Marketing Strategies and Techniques on Stakeholders' Satisfaction and Sales of Cardiac Market Segment have been considered for this study to present the whole Bangladeshi Pharmaceutical Market as a case. Cardiologists (Customers), Cardiac Patients (Consumers) and Marketing Professionals (Marketers) were considered as Stakeholders and major components of the Pharmaceutical Cardiac Market in Bangladesh.

2.5 Hypothesis Development

The hypothesis of the present study has been developed from the attributes or variables of Marketing Mix Strategies to represent Marketing Strategies and Techniques from different literatures. Moreover, the impact of the said variables on Stakeholders' Satisfaction (i.e., Doctors, Patients and Marketing Professionals) in the Bangladeshi Pharmaceutical Market was evaluated. The four issues considered for the Marketing Strategies and Techniques of the Cardiac Market Segment are:

- i) Medicinal issues of Product Strategies
- ii) Economic issues of Price Strategies
- iii) Convenience issues of Place Strategies
- iv) Communication issues of Promotional Strategies

2.5.1 Medicinal Issues of Product Strategies:

Medicinal issues to manage cardiac diseases are the disorder of the body and heart that causes high blood pressure, electrolyte imbalances, constrictive pericarditis, ventricular arrhythmia, hepatic failure, hypothyroidism, myocardial infraction, heart block etc. (Goodman and Gilman, 1990). Pharmacological benefits of cardiac medicines are

prescribed by the cardiologists and used by the cardiac patients for the management of cardiac problems. The benefits of the cardiac medicines are evaluated by the outcomes of increase cardiac output, increase renal perfusion, reduction of peripheral resistance, vasodilation, decrease central and peripheral sympathetic nerve activities to reduce blood pressure and other symptoms.

Pharmaceutical manufacturers offer efficacious, safe medication with affordable price to manage disease that helps patients' quality of life (Dogramatzis, 2004). Perceived quality and value of medicine has significant relationship with physicians' satisfaction (Murshid et al., 2014)

According to Mansfield to fulfill the needs of quality, efficacy and safety, it is of vital importance to license drugs meant for prescription. Company reputation has an indirect significant impact on satisfaction and loyalty of the customers (Mansfield, 2001). Physicians preference in drug prescription are influenced by quality, company reputation, communication with company, availability and price of medicines respectively (Elahi, et al., 2016).

Customers' satisfaction and loyalty is driven by both confirmations of expectation and company image (Ehrensberg and Barhand, 2000). Customers apply their decision making strategy while selecting alternative brands to counter it. According to Fadel, product value is the total benefit of using the product (Fadel,2010). Borden thinks that product is characterized by design, quality, features, brand names and different size (Borden,1980). Product can be viewed as a bundle of perceived intrinsic and extrinsic attributes. The intrinsic attributes of a product include its physical composition. While the extrinsic attributes are related to its performance, such as, efficacy and safety (Zeithaml,1988).

Customer satisfaction can be derived from a product which is related to the evaluation of its product attributes (Churchill et al., 1982; Oliver,1999). Lapierre, J. identified the benefits of a product as its quality customization (segmentation), responsiveness, efficacy, reliability, safety, flexibility (ease of usage) and technical competence (Lapierre, 2000). A set of expectations formed by the patients, prescribers and payers are called medicinal benefits at the existing level of a therapeutic segment (Orville ,1995).

This study focuses on how exactly attributes or variables of Marketing Strategies and Techniques (MST) cause an impact on a doctor's satisfaction to prescribe and a patient's satisfaction to purchase a particular drug. Applied in the context of the Bangladeshi pharmaceutical market, the independent variables of product strategies which were selected from journal articles and Marketing Mix Strategies are efficacy, brand image, safety information, company reputation and new medicines which impact the doctor's satisfaction (dependent variable).

From the reviewed literatures the following attributes have been considered as variables under medicinal issues for hypothesis development. The variables are:

- Efficacy
- Safety information
- Brand image
- Company reputation
- New medicine

The hypotheses developed under medicinal issues from above mentioned literatures are as follows:

H₀: Efficacy of medicine has no positive impact on Stakeholders' Satisfaction.

H₁: Efficacy of medicine has positive impact on Stakeholders' Satisfaction.

H₀: Brand image of medicine has no positive impact on Stakeholders' Satisfaction.

H₁: Brand image of medicine has positive impact on Stakeholders' Satisfaction.

H₀: Safety information of medicine has no positive impact on Stakeholders' Satisfaction.

H₁: Safety information of medicine has positive impact on Stakeholders' Satisfaction.

H₀: Company reputation has no positive impact on Stakeholders' Satisfaction.

H₁: Company reputation has positive impact on Stakeholders' Satisfaction.

H₀: New medicine has no positive impact on Stakeholders' Satisfaction.

H₁: New medicine has positive impact on Stakeholders' Satisfaction.

2.5.2 Economic issues of Price Strategies

Price represents the value of a product that is attributed for the fairness of the economic benefit relationship between buyers and sellers. If the price is set for high profit earning from the seller's side only, then it may be unfairly high for purchasing price of the customer. On the other hand, buyers may seek budget price that might not be the optimal profit making price for the producers (Dogramatzis, 2002). From buyer's viewpoint, a product price perception is a mix of quality and effectiveness of the drug, the product prices offered by their rivals and the personal economic benefits they expect from the purchase (Kotler et al., 2010).

On the other hand, proper price selection by the sellers determines the financial stability and profit making capacity for long term survival. Each pharmaceutical product is produced with the intention of successfully competing with the strategies offered by its competitors and hence carry product and economic benefits (Lehmann et al., 1997). These are efficacy, safety, tolerability, quality and cost. Economic benefits include actual pricing, competitive pricing, price signal quality, discounts and return on investment (Juredini, 2000).

One of the essential components of Marketing Mix is pricing strategy. It can help to make profit of the company but regulated by many factors such as government policy, intensity of market competition, product attributes, promotional effort, resources, cost, sales force skill, distribution network, stages of product life cycle (Chaganti, 2005).

Price elasticity of demand represents change in the price effect on the demand of the quantity of products. If price decreases, demand will increase. On the other hand, if medicine is inelastic, price increases will not affect the demand of medicines like cardiac medicines. Cost has an influence on price setting. Cost of fixed and variables and cost of competitors that impact on doctors' prescription decision (West, 2002; Freemantle and Eastaugh, 2002).

Demand of medicines for elastic and inelastic pricing depends on many factors that are product positioning, product differentiation, number of competitors, branding, substitution products, importance of products for treatment (Dogramatzis, 2002). Benefits or perceived

value of medicine influences the purchasing decision rather than pricing (Richarme, 2001). Philip Kotler described the important factors of pricing as the attributes of the product and its benefit (Kotler, 1984). Doctors prefer Pharmaceutical companies that consider the affordability of patients to improve their quality of life by reducing the symptoms of diseases.

From the above mentioned literature review the following variables have been considered for hypothesis development under economic issues-

- Price signal quality
- Competitive price

The hypotheses are given below:

H₀: Price signal quality has no positive impact on Stakeholders' Satisfaction.

H₁: Price signal quality has positive impact on Stakeholders' Satisfaction.

H₀: Competitive pricing has no positive impact on Stakeholders' Satisfaction.

H₁: Competitive pricing has positive impact on Stakeholders' Satisfaction

2.5.3 Convenience issues of Distribution Network (Place) Strategy

According to Philip Kotler et al., the distribution of a product means the availability of the product to its target customers (Kotler et al.,1999). According to Copley, organizations should put more emphasis on the decisions of distribution because of the interconnectedness of distribution of the product and its immediate consumption (Copley,2004). In addition, organizations should also pay attention on how the product can be delivered on the right time and place, and the channels used to deliver the product to customers.

According to the description of Barden, N.H. the dimensions of the distribution channel are distribution coverage, location assortment, inventories and transport (Barden,1984). These channels could either be direct or indirect. Keller, K.L. emphasized on the choice of channel distribution as it has a strong effect on sales and customer satisfaction (Keller, 1984).

Ang Hoo stated that importance of competitive factors varied between manufacturers and wholesalers/distributors (Hoo,2011).

Supply chain management is defined by John B Houlihan as the design, implementation and control of efficient supply chain systems. It has usage in both strategic: design and evaluation of outcome, and operational: location determination, production, inventory and transport of goods across the chain management (Houlihan,1985). Purchasing, sales forecasting, controlling production, handling materials, managing inventory, distribution and customer service are the main activities of the Supply Chain Management (Hoque et al., 2012).

Logistic management represents effective flow and storage of raw materials, in-process inventory and finished goods to fulfill customers' requirement from manufacturers to consumers through different stages of distribution channels (Council of logistics management, www.clml.org).

S.R Chaganti mentioned the five basic members of Pharmaceutical distribution channel are manufacturers, doctors, wholesalers, retailers and patients. The place strategy offers effective management of distribution to get competitive advantage making medicines available in different type of Pharmacies (retail, hospital and model) for the patients (Chaganti,2005).

Model Pharmacy is new place strategy introduced in Bangladesh for Pharmaceutical medicines distribution channel (DGDA, 2017). To evaluate the patient' satisfaction and perception about the Facilities of Model Pharmacies in comparison to conventional retail pharmacies was carried out. S.R., Chaganti described that retail pharmacies are market places where patients purchase medicines from when they need (Chaganti,2005). Although the Pharmaceutical sector is uprising but health care is still not well developed (Sultana J, 2018). Lack of modern facilities, improper management of medicines, no counselling of 'A' grade pharmacists and selling poor quality medicines are the major causes of poor health care service. Due to low middle income of the people and shortage of physicians in developing countries, pharmacists of B and C grades play an important role in promoting access to medicines (Wafula et al., 2012). Considering these problems, the government of Bangladesh has promulgated the National Drug Policy 2016 to introduce Model pharmacy.

So that it will ensure a rational and safe use of quality medicines with dispensing and counselling by 'A' grade pharmacists with a reasonable price. The standards of facilities for Model Pharmacy are, Counseling patients 'A' grade pharmacists, standard location, modern environment, Good Dispensing practice, database systems etc.

The variables selected from the above mentioned literatures for hypothesis development are

- Availability
- Location of Retail Pharmacies
- Facilities of Model Pharmacies

The hypotheses are given below under convenience issues.

H₀: Availability of Medicines has no positive impact on Stakeholders' Satisfaction.

H₁: Availability of Medicines has positive impact on Stakeholders' Satisfaction.

H₀: Location of Pharmacy has no positive impact on Stakeholders' Satisfaction.

H₁: Location of Pharmacy has positive impact on Stakeholders' Satisfaction.

H₀: Facilities of Model Pharmacy have no positive impact on Stakeholders' Satisfaction.

H₁: Facilities of Model Pharmacy have positive impact on Stakeholders' Satisfaction.

2.5.4 Communication Relationship issues of Promotional Strategies:

Pharmaceutical marketing differs from other forms of marketing. Because, the end user is not the sole decision maker, nor do they determine the products they will consume. The end users (Patients) consult their physicians whose duty is to ensure the safe administration of the medicine. Because of these influence processes, pharmaceutical companies campaign their products chiefly to physicians and occasionally to the end users (patients) as well.

Pharmaceutical industries employ Marketing Strategies that are markedly different from consumer goods that are usually adopted by other industries. There are multiple reasons for these. First, the Pharmaceutical industry is regulated by government rules and regulation intensively. Second, they deal with health care and credence goods (i.e., physicians prescribe and patients consume them). Finally, manufacturers are bound to

obtain approval from the government by law (by FDA in the United States, by DDA in Bangladesh) before a drug/medicine can be marketed (Carter et al., 2009).

The Pharmaceutical industry disseminates marketing information of the company to its target market using marketing communications irrespective of the diverse media used. That is why companies use different marketing strategies and tactics to market their products. Marketing strategies, additionally, are often used as the source of competitive advantage as well (Anderson, 2003). The empirical study on Marketing Mix variables such as product, price, place and promotion showed significant impact on physicians' satisfaction (Murshid et al., 2014).

Ang Hoo Bee mentioned that the Selling Skill of Medical Representatives (MR) is the ability to persuade doctors about the scientific information regarding safety and efficacy of medicines (Hoo, 2004). They maintain personal relationship that influences doctors to prescribe a specific brand of medicines in favor of a particular pharmaceutical company. Physicians often have a hard time sorting out what is of value for their patients amidst this heap of overwhelming information (Chren, 1994). Medical schools too, do very little to train physicians to differentiate between marketing and medical education. It is important to interact with industry representatives either as individuals or in professional groups in an ethical and responsible manner (Jibson, 2007).

Taneja G conducted empirical research on personal Selling Skill of Medical Representatives and found regular visit to doctors, medicine detailing through visual aids, product literatures, free samples that impact on doctors' prescribing behavior positively (Taneja, 2008). MC Smith, S.R Chaganti, D. Dimitris and S.S Andaleeb et al. explained the importance of scientific knowledge of MR regarding medicines, communication skill, objection handling influence on Doctors' Satisfaction and Sales performance. (Smith, 2002; Chaganti ,2005; Dimitris,2002; Andaleeb et al.,2014)

Taneja, Rizwan and Dimitris mentioned that Continuous Medical Education(CME) programs for doctors sponsored by Pharmaceutical companies for private practitioners, such as sponsoring national/international conferences regarding medicines that influence

doctors to prescribe and increase sales of Pharmaceutical companies (Taneja,2008) (Rizwan,2014; Dimitris,2002). The researchers conducted empirical research to investigate the impact of promotional policies or incentives like text book, journals of medicines, free samples, small gifts with brand name for doctors prescribing behavior and sales (Murshid et al., 2014; Bee,2014; Sayandhan,2008).

Dogramatzis and Chaganti explained Awareness Campaign for Patients' education regarding prevention of disease which is public relation attempts to convey key message by electronic media and organize seminar involving doctors have found positive influence on doctors and patients' satisfaction and sales (Dogramatzis,2002; Chaganti,2005). The Marketing Mix Strategy is controllable marketing techniques that impact on targeted market (Kotler et al.,2012). The variables of the Marketing Communication relationship issues of the present study selected from the above mentioned literatures are:

- Selling Skill of Medical Representatives
- Continual Medical Education for Doctors
- Awareness Campaign to prevent cardiac problems
- Promotional Policies/ incentives

Hypotheses developed from the selected variables are as follows:

H₀: Selling Skill of Medical Representative has no positive impact on Stakeholders' Satisfaction.

H₁: Selling Skill of Medical Representative has positive impact on Stakeholders' Satisfaction.

H₀: Continuous Medical Education (CME) program for doctors' has no positive impact on Stakeholders' Satisfaction.

H₁: Continuous Medical Education (CME) program for doctors' has positive impact on Stakeholders' Satisfaction.

H₀: Awareness Campaign to prevent cardiac disease has no positive impact on Stakeholders' Satisfaction.

H₁: Awareness Campaign to prevent cardiac disease has positive impact on Stakeholders' Satisfaction.

H₀: Promotional Policies have no positive impact on Stakeholders' Satisfaction.

H₁: Promotional Policies have positive impact on Stakeholders' Satisfaction.

2.6 Conceptual Frame Work and Selected Variables: To develop research Conceptual Model, the variables of MST were selected from extensive literatures review. Selected Variables and References are shown in the table 2.3

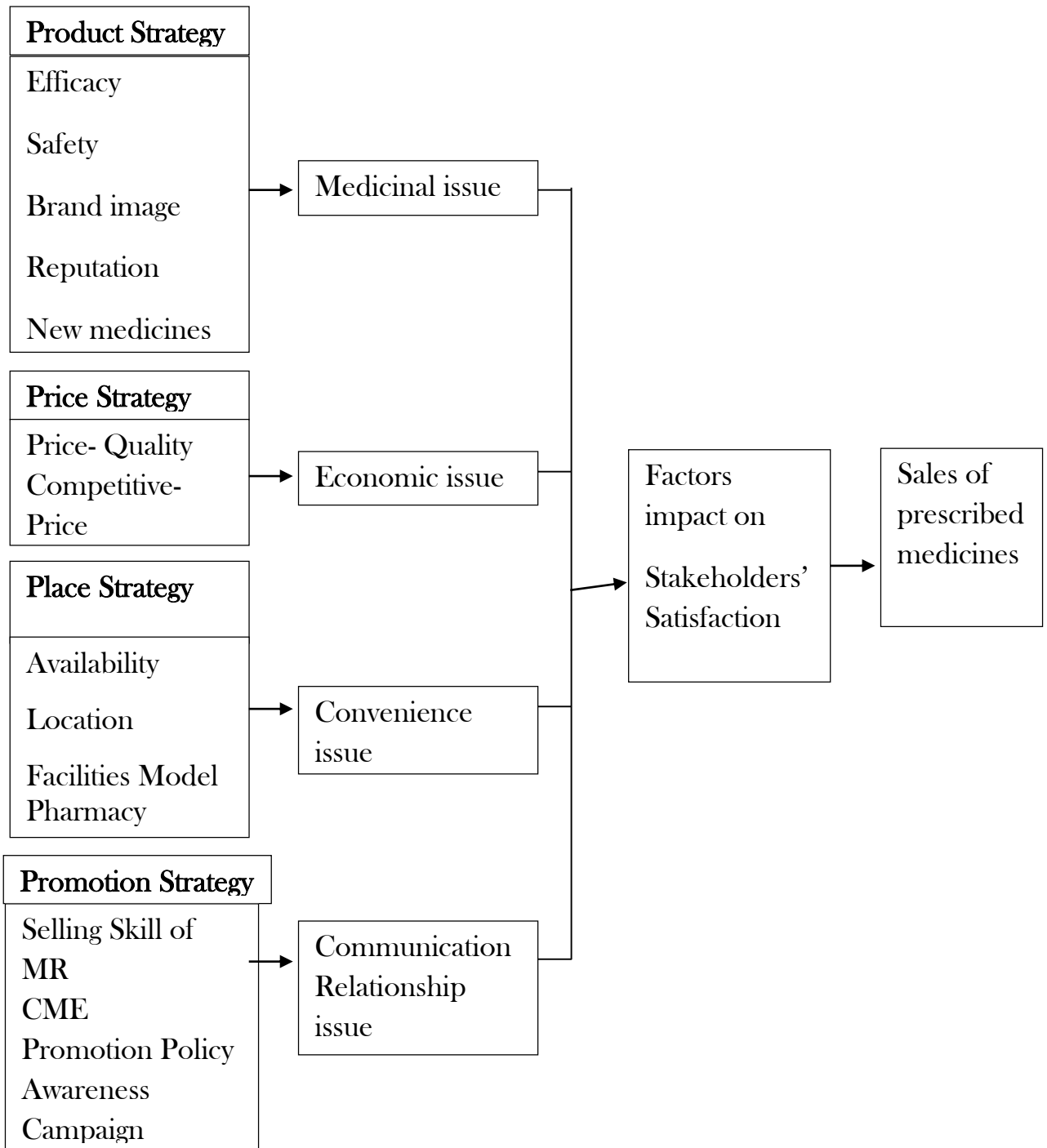
Table 2.3: Selected Variables and References

Variables	Source of References
Physician/Doctors' satisfaction and sales. Efficacy, Quality and Price	Murshid et al.,(2014),Asian Social Science ,10(16)
Factor analysis of 4Ps Strategies and physicians satisfaction	Murshid et al., (2014), Asian Social Science 10(16),
Relationship between marketing mix strategy & physicians' satisfaction	Murshid et al., (2014) Advance in Environmental Biology,8(9)
Location of pharmacy	Guhl et al., (2016),Health policy, 120
Product attributes and patient needs	Puraea, et al., Farmacia, 2009, vol. 57,(3)
Pricing	Panteli et al., (2015), Health Research Policy and System ,13(39)
Impact of promotion mix (communication reaction) on doctors prescribing behavior	Girish,(2008), Asia Pacific Business Review,4(4)
Influence of marketing mix in prescribing by ophthalmologists(Quality, efficacy, brand, company image, price, availability, Awareness campaign, Selling Skill of Medical Representatives, gifts, samples)	Sayandhan et al.,(2008), Tropical Agricultural Research, 20.
Sales and marketing mix strategies	Franklin et al., (2009), Journal of Personal Selling and Sales Management
Marketing Skill development	Butter, et al., International Journal of Medical Marketing,3(1)
Brand image, Safety, Efficacy	Bednark et al.,(2005), Neuroendocrinology letter, 26
New medicine	Anthony, Drug Information Journal, 1999,33
Physician perceived value and satisfaction	Murshid et al., (2014)Asia Social Science, 10 (16)
Distribution network (Supply chain)	Hoque et al., (2012), International Journal
Model Pharmacy	Bangladesh New Drug Policy (2016)

Source: Prepared by Researcher

Figure 2.5 shows the variables of Marketing Strategies and Techniques selected from theories which are applied in the conceptual model.

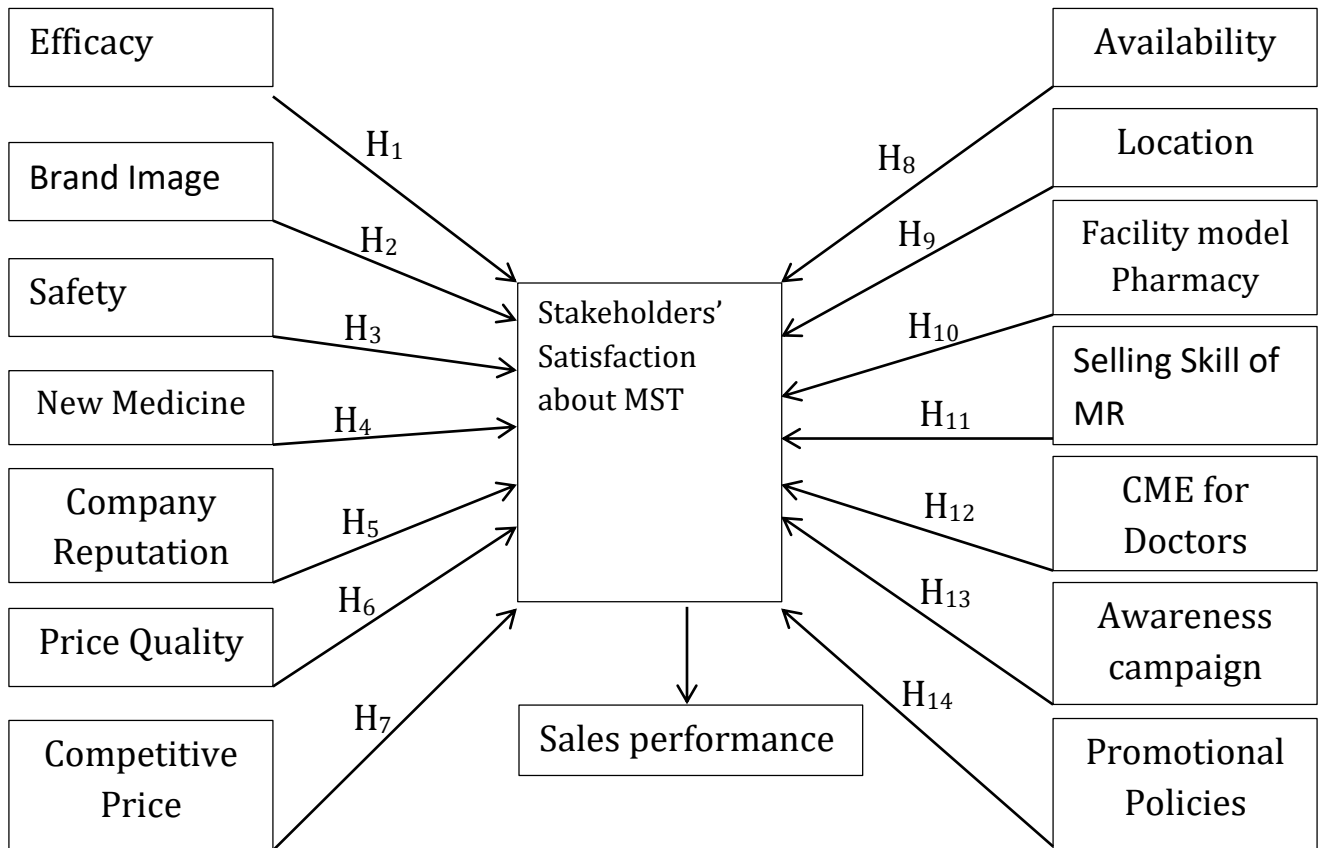
Figure 2.5 Conceptual Model



Source: Prepared by Researcher

2.6.1 Conceptual Model with hypotheses

Figure 2.6 Conceptual Model including hypotheses



2.6.2 Hypotheses related to Medicinal, Economic, Convenience and Communication issues

Hypotheses: Stakeholders' Satisfaction is considered as dependent variable. Variables of Marketing Strategies and Techniques are independent variables.

H₀: Efficacy of medicine has no positive impact on Stakeholders' Satisfaction.

H₁: Efficacy of medicine has positive impact on Stakeholders' Satisfaction.

H₀: Brand Image of medicine has no positive impact on Stakeholders' Satisfaction.

H₂: Brand Image of medicine has positive impact on Stakeholders' Satisfaction.

H₀: Safety Information of medicine has no positive impact on Stakeholders' Satisfaction.

H₃: Safety Information of medicine has positive impact on Stakeholders' Satisfaction.

H₀: Company Reputation has no positive impact on Stakeholders' Satisfaction.
H₄ Company Reputation has positive impact on Stakeholders' Satisfaction.
H₀: New Medicine has no positive impact on Stakeholders' Satisfaction.
H₅: New Medicine has positive impact on Stakeholders' Satisfaction.
H₀: Price signal Quality has no positive impact on Stakeholders' Satisfaction.
H₆: Price signal Quality has positive impact on Stakeholders' Satisfaction.
H₀: Competitive Pricing has no positive impact on Stakeholders' Satisfaction.
H₇: Competitive Pricing has positive impact on Stakeholders' Satisfaction.
H₀: Availability of Medicines has no positive impact on Stakeholders' Satisfaction.
H₈: Availability of Medicines has positive impact on Stakeholders' Satisfaction.
H₀: Location of Pharmacy has no positive impact on Stakeholders' Satisfaction.
H₉: Location of Pharmacy has positive impact on Stakeholders' Satisfaction.
H₀: Facilities of Model Pharmacy have no positive impact on Stakeholders' Satisfaction.
H₁₀: Facilities of Model Pharmacy have positive impact on Stakeholders' Satisfaction.
H₀: Selling Skill of Medical Representative has no positive impact on Stakeholders' Satisfaction.
H₁₁: Selling Skill of Medical Representative has positive impact on stakeholders' satisfaction.
H₀: Continuous Medical Education (CME) program for doctors' has no positive impact on Stakeholders' Satisfaction.
H₁₂: Continuous Medical Education (CME) program for doctors' has positive impact on Stakeholders' Satisfaction.
H₀: Awareness Campaign to prevent cardiac disease has no positive impact on Stakeholders' Satisfaction.
H₁₃: Awareness Campaign to prevent cardiac disease has positive impact on Stakeholders' Satisfaction.
H₀: Promotional Policies have positive impact on Stakeholders' Satisfaction.
H₁₄: Promotional Policies have positive impact on Stakeholders' Satisfaction.

2.6.3 Hypotheses related Overall Satisfaction about MST and Stakeholders

H₀: There is no significance relationship between Overall Satisfaction about Marketing Strategies and Techniques and Stakeholders

H₁: There is significance relationship between Overall Satisfaction about Marketing Strategies and Techniques and Stakeholders

2.6.4 Hypotheses related Patients' Satisfaction about Model Pharmacy newly introduced Place Strategy (2017)

H₀: Location of Model Pharmacy has no positive impact on Patients' Satisfaction.

H₁: Location of Model Pharmacy has positive impact on Patients' Satisfaction.

H₀: Quality of medicine has no positive impact on Patients' Satisfaction.

H₂: Quality of medicine has positive impact on Patients' Satisfaction

H₀: Modern environment of Model Pharmacy has no positive impact on Patients' Satisfaction.

H₃: Modern environment of Model Pharmacy has positive impact on Patients' Satisfaction

H₀: Variety of stock has no positive impact on Patients' Satisfaction.

H₄: Variety of stock has positive impact on Patients' Satisfaction.

H₀: Database system has no positive impact on Patients' Satisfaction.

H₅: Database system has positive impact on Patients' Satisfaction.

H₀: Reasonable price has no positive impact on Patients' Satisfaction.

H₆: Reasonable price has positive impact on Patients' Satisfaction.

H₀: Counseling by 'A' grade pharmacists have no positive impact on Patients' Satisfaction.

H₇: Counseling by 'A' grade pharmacists have positive impact on Patients' Satisfaction.

CHAPTER THREE

METHODOLOGY OF THE STUDY

3.1 Research Design

It is an outline and a kind of framework that includes the methods and processes of data collection and analysis of the research problem. Both exploratory and descriptive research designs are employed in the current research. Deductive research approach is used in the present study where the variables of Marketing Strategies and Techniques (MST) were taken from established theories and literatures. The variables of these established theories have been tested and accepted as significant variables in previous research work. The research design of the present study includes the following tasks -

- Information needed for the research
- Design for Exploratory research
- Design for Descriptive research
- Development of Questionnaires for data collection
- Pilot Survey of Pretesting Questionnaires
- Sample size determination from Target Population, Sample element and Sampling frame
- Sampling techniques of data collection
- Tools for Data analysis

3.1.1 Information needed for the research

Extensive literature review on marketing strategies and tactics in developed and developing countries as well as secondary data of market analysis have helped to find out the research gap in the Bangladeshi pharmaceutical market. Therefore, the information needed in this study includes identification of the relationship between variables of MST and satisfaction of stakeholders. Moreover, the issues regarding the medicinal, economical, convenience and communication needed to be thoroughly evaluated. Thus, the impact of medicinal, economic, convenience and communication issues of MST were defined from extensive literature reviews and other secondary source of information. Hence, variables of MST that

influence the Stakeholders' Satisfaction and sales need to be analyzed for improvement of MST of Pharmaceutical companies.

3.1.2 Design for Exploratory Research

Exploratory research was used to provide insight on the research problem to gain additional information before developing hypotheses. This research process is flexible, unstructured questions were asked to small a sample of respondents who are non-representative of population. Analysis of the primary data is qualitative. The findings of exploratory research are tentative and generally followed by further exploration or are verified and quantified by descriptive research. The present exploratory research was conducted with 10 cardiologists, 20 cardiac patients, 10 marketing managers and 11 academicians. Exploratory research in the form of secondary data analysis and in-depth interview were conducted. Questions were asked to set the variables of MST, understand the perception of stakeholders and identify the impact of medicinal, economic, convenience and communication issues of MST on stakeholders' satisfaction. This was achieved by interviewing group of experts, managers, cardiologists and long term cardiac medicines using cardiac patients. Questions were enclosed in Appendix A.

3.1.3 Design for Descriptive Research

The objective of descriptive research design is to test specific hypotheses of the present study and examine the relationship of variables of MST and stakeholders' satisfaction. It is based on large representative sample size of target population which is 536. Data obtained were subjected to quantitative analysis while the findings were used as input into managerial decision making. Both analytical and descriptive methods were adopted for the present research. The information, facts, figures are analyzed and evaluated. In the descriptive study, well-structured questionnaires were developed out of an extensive literature review and survey method was used for data collection. Descriptive research design requires a clear specification of questions such as who, what, when, where, why and way of research.

- Who should be considered as stakeholders? – Cardiologists, Cardiac Patients and Marketing Professionals.

- What information should be obtained from the respondents? –Information that need to be evaluated to determine the impact of variables of MST on Stakeholders’ Satisfaction and Sales.
- When should be the information collected? - During office hours
- Where should be the information collected? – Department of Cardiology both Public and Private hospitals and Pharmaceutical companies producing cardiac medicines
- Why is the present study conducted? - To improve the Marketing Strategies and Techniques for satisfaction of doctors and patients, minimize the gap between the stakeholders’ satisfaction about MST and stakeholders.
- Way to obtain information from respondents by distributing self-explanatory questionnaires among the respondents by survey method

3.1.4 Development of Questionnaires

The questionnaires contained the demographic information of the respondents, a 5-point Likert scale and general questions. The contents of demographics information were gender, age, academic qualification, years of experience dealing with cardiac medicines. Scale based questionnaires were prepared where respondents need to put tick marks against each satisfaction statement. This was done to evaluate the impact of Marketing Strategies and Techniques on Doctors’ satisfaction, Patients’ satisfaction and Marketing Professionals’ satisfaction and sales. Scale was based on 1-5 points where 1-represents strongly disagree, 2- disagree, 3-neither agree nor disagrees or neutral, 4-agree and 5-strongly agree.

The three set questionnaires were developed for the three types of stakeholders such as Marketing Professionals, Doctors and Patients and distributed among the respective Stakeholders. The general questions contained open-end, multiple choice questions and other questions relevant to the research.

3.1.5 Pilot Survey of Pre-Testing Questionnaires

The main objective of pilot survey was to understand whether the set questionnaire was comprehensive enough or not. Certain parameters of questionnaires were analyzed during pretesting. These parameters include clarity of questions, relevance of questions to the

research topic, appropriateness of variables decided, answering time of entire questionnaire and attention span of respondents.

During this pilot survey, self-administered questionnaires were distributed among 11 cardiologists, 18 marketing professionals of different pharmaceutical companies and 20 cardiac patients taking treatment from private and public hospitals. A total of 56 satisfaction statements were filtered out according to the responses of respondents of the pilot survey in order to avoid ambiguity. Among this initially set 56 statements, the questionnaires for doctors contained 20 satisfaction statements about Marketing Strategies and Techniques, 20 statements for Marketing Professionals and 16 statements for Patients. For the final survey, the number of questions were filtered out and reduced down to 38 which were very much relevant to theories, literatures and expert opinions and easy to understand for the stakeholders.

It was observed during the pilot survey, that respondents seemed to be annoyed to answer questions that were irrelevant to the stakeholder, sensitive or time consuming. The structured questionnaires have been distributed among different respondents to gain their satisfaction, perceptions and demographic characteristics. To study the impact of Marketing Strategies and Techniques on Stakeholders' Satisfaction, the Cardiologists, Cardiac patients and Marketing Professionals of different cardiac hospitals and pharmaceutical companies were included for data collection in Dhaka city.

SPSS software version 20 was applied to observe the outcomes of the independent variable or items of statements with the dependent variable of stakeholders' satisfactions. The impact of independent variables of Marketing Strategies and Techniques on Overall Satisfaction of customers (Doctors), consumers (Patients) and sellers (Marketing Professionals) of F-test was found significant where p value was less than 0.05 by Multiple Regression analysis. Hence, for the final survey, the total number of statements were reduced down to 38 (14 for doctors, 13 for marketing professionals and 11 for patients). Total 1000 questionnaires were distributed in 2018. Out of 1000 only 560 questionnaires were received back. Out of 560 only 536 responses were complete in all aspects and were found eligible for analysis.

3.1.5.1 Validity and Reliability of the Questionnaires

Validity and Reliability of the data were analyzed to satisfy one aspect of good fit of the method.

Validity – The degree to which a measurement accurately represents what is supposed to measure and content of an indicator reflects the intended concept. Scale development for measurement should produce accurate result for which it is designed (Zikmund, 2003). The degree of consistency was evaluated by using two different measurement scales to measure the same concept (Davis and Cosenza,1993). The degree of the scale represents 1= Strongly Disagree, 2=Disagree, 3= Neither agree nor disagree, 4= Agree and 5=Strongly Agree which was used for satisfaction statements of the present study. Variables of the statements were selected from different literatures mentioned in the previous chapter. The validity of the questionnaires was assessed and proved by literature reviews.

Reliability- A measure is considered reliable when the proper conceptualization of variables is able to produce consistent results (Cooper and Schindler, 2011). Cronbach's alpha of reliability ranging from 0.5 to 0.9, represents that the questionnaire or instrument is satisfactory and consistent. The questionnaires of the present study were found reliable as the Cronbach's alpha within the acceptable limit (0.82) which is provided in appendix C.

3.1.6. Sample Size Determination from Target Population, Sample Element and Sampling Frame

The present research is descriptive in nature which is applicable for factor analysis. Sampling design process includes defining the target population, sample element, identifying sampling frame, determining sample size and selecting sampling techniques. Target population is collections of elements that possess the information sought by the researcher from which inferences are to be made.

Target population consists of three categories of stakeholders who possess the information sought by the researcher. Hence, inferences are to be made on the basis of the obtained information. The sample elements are the respondents of the target population. For the

present study, doctors (cardiologists), patients (cardiac patients) and marketing professionals are the sample elements of cardiac market segment and possess the required information. Sampling frame consists of a list of direction for identifying the target population. A list of total number of cardiologists was collected from Bangladesh Cardiologists Association (BCA) and Bangladesh Medical Association (BMA) to find out the addresses of hospitals and telephone numbers. To collect information from the cardiac patients, the list of departments of cardiology in both public and private hospitals were used. The sampling frame for Marketing Professional's population was selected from Bangladesh Pharmaceutical Industries Association (BPIA) to conduct the Marketing Professionals.

Sample Size Determination

The total population consists of three stakeholders (sub-population). Hence total population (N) is divided into three parts, Mathematically $N = N_1 + N_2 + N_3$

Where N_1 = Number of Cardiologists

N_2 = Number of Marketing Professionals

N_3 = Number of Cardiac Patients

From each population; sample size N_i is determined by following conventional formula with 95% confidence interval and 7% margin of error.

$$N_i = \frac{\frac{z\alpha/2 \times P(1-P)}{e^2}}{1 + \frac{(z\alpha/2 \times P(i-p))}{N_i e^2}} \quad i = 1, 2, 3$$

The following table 3.1 shows the sample size from each stakeholder (sub population) in Dhaka City of Bangladesh Cardiologists Association (BCA), and Bangladesh Pharmaceutical Industries Association (BPIA).

Table 3.1: Sample Size Determination of Cardiologists, Cardiac Patients and Marketing Professionals

Stakeholder (Target Population)	Population size	Estimated sample size	Final sample size	Source of Information
Cardiologists	750 (approx.)	156	156	BCA
Marketing professionals	1,500 (approx.)	174	180	BPIA
Cardiac patients	30,00,000(approx.)	196	200	Journal &WHO
Total	30,02,250	526	536	

Source: Prepared by Researcher

Cardiologists of 15 hospitals, Marketing Professionals of 18 companies, cardiac patients of 15 hospitals were the respondents. If the sample size is too large it can give erroneous result and on the other hand, if that is too small it may fail in consideration of generalizing the result. The type of research is an important determining factor for calculation of sample size (Sekaran and Bougie,2010). Sample size between 30 and 500 are considered appropriate depending on the type of sampling design used and the proposed research questions (Sekaran, 2003).

In social science, for multivariate analysis, the sample size is to be analyzed is 2:1 of 20:1. The minimum number can be five respondents per variable, denoted by 5:1 (Byrne 2010). Here, the ration 5:1 means that the number of respondents is 5 when independent variable is 1.

3.1.7 Sampling Techniques of Data collection

Target population is divided into sub-groups from mutually exclusive and collectively exhaustive populations called clusters according to Malhotra (2015). Here the target population is divided into three groups (stakeholders):

1st group cardiologists ($N_1 = 750, n_1 = 156$)

2nd group marketing professionals ($N_2 = 15000, n_2 = 180$)

3rd cardiac patients ($N_3 = 3,000,000$, $n_3 = 200$)

Cluster Sampling Techniques (2 stages) were used in each group to select final sampling units. The hospitals, both private and public, have been selected where cardiologists of cardiac departments were found. Here, cardiac patients are being treated as sampling unit of those hospitals.

Among all hospitals in Dhaka city, 15 hospitals were selected (proportionate to size) as 1st stage cluster sampling was carried out at random from the sampling frame (BCA). First group consists of all cardiologists that were obtained from a representative sample of 156 cardiologists. A random sampling was performed from 15 hospitals in Dhaka city. No cardiologists were selected from other hospitals. Similarly, from each selected hospital, 200 cardiac patients were selected by two-stage cluster sampling.

Sampling design for 2nd group consists of Marketing Professionals in 18 companies that holds 82% of the total market share. So, a total of 180 Marketing Professionals had been selected.

The researchers targeted 536 populations which consists of three sub population: Marketing Professionals holding 82% of the market share (180), Cardiologists (156) and Cardiac patients (200). Marketing Professionals were selected by stratified random sampling from the Bangladesh Pharmaceutical Industry Association (BPIA) producing cardiac medicines (30+) in Dhaka city at different areas. They were asked to evaluate their satisfaction about sales distributing the self-administered questionnaires. In the 2nd stage, the researcher targeted 156 cardiologists and 200 cardiac patients randomly selected from department of Cardiology both public and private hospitals with the help of Bangladesh Cardiologist Association (BCA) and Bangladesh Medical Association (BMA) in different areas of Dhaka city. The samples of research questionnaires are given in the Appendix B. The researcher selected Cardiologists and Cardiac patients from each participating hospitals distributing the self-administered questionnaire during office hours. Each respondent was asked to evaluate their satisfaction about the variables / attributes of Marketing Strategies and Techniques.

3.1.7.1 Sampling Techniques for Doctors (1stgroup)

First group consists of doctors. Approximately thirty hospitals were considered as target population of clusters. At the 1st stage, 15 hospitals were randomly selected. Then 2 to 30 doctors were randomly selected from each hospital. Thus, the total sample size of doctors comprises 156 according to proportion to size (Table 3.2).

Table 3.2: List of Hospitals and Sample size of Doctors

Hospital's name	No. of Doctors
NICVDH	30
BSMMU	20
DMCH	25
BIRDEM	25
SHSHCH	15
MIRPUR HEART FOUNDATION	4
UROBANGLA HEART FOUNDATION	4
MOGDDAMCH	4
IBNSINA HOSPITAL	6
ANWARKHAN MEDICAL COLLEGE	4
LABAID HOSPITAL	8
NATIONAL HEART FOUNDATION	5
CMH	5
BANGLADESH MEDICAL COLLEGE	6
CITY HOSPITAL	2
Total number of Doctors	156

Source: Prepared by Researcher

3.1.7.2 Sampling Techniques for Marketing Professionals (2ndgroup):

Second group consists of 30 cardiac medicine producing companies based on market share. A total of 18 companies out of these 30 were selected as they cover more than 80% market share (Source: IMS data, 2018). To obtain a representative sample, Marketing Professionals have been selected by stratified random sampling without replacement, 10 from each company. Theoretically, each company is treated as stratum. So, a total of 180 marketing professionals have been selected by stratified random sampling with equal allocation which is summarized below in the table 3.3.

Table 3.3: List of Pharmaceutical Companies and Sample size of Marketing Professionals

Sl. no.	Company	Market share (%)	No. Marketing Professionals
1	Healthcare	2.50	10
2	Square	18.0	10
3	General Pharmaceuticals	1.46	10
4	Radiant	0.22	10
5	SKF	1.3	10
6	Unimed	3.18	10
7	Incepta	16.5	10
8	Aristo Pharma	3.87	10
9	Servier	3.03	10
10	Orion	2.04	10
11	Acme	3.74	10
12	Bio Pharma	0.60	10
13	Beacon	0.15	10
14	Beximco	15.07	10
15	Popular	2.21	10
16	Renata	2.04	10
17	Nuvista	0.16	10
18	ACI	5.78	10
	Total	81.85	180

Source: Prepared by Researcher

3.1.7.3 Sampling Techniques for Patients(3rdgroup): The hospitals selected for doctors in the 1st stage group is the same for patients. From each hospital, 13 to 14 patients were selected randomly. So, a total of 200 patients are selected by random sampling in the following table 3.4.

Table 3.4: Name of Hospitals and sample size of the patients

Name of Hospitals	No. of patients
NICVDH	14
BSMMU	14
DMCH	14
BIRDEM	14
SSMCH	13
SHSMCH	13
MIRPURHEART FOUNDATION	13
UROBANGLA HEART FOUNDATION	13
IBNSINA	13
ANWAR KHAN MCH	13
LABAID HOSPITAL	13
NATIONAL HEART	13
CMH	13
BANGLADESH MEDICAL COLLEGE HOSITAT	14
CITY HOSPITAL	13
Total Cardiac Patients	200

Source: Prepared by Researcher

3.1.8 Tools for Data analysis

Statistical tools for data analysis chosen were SPSS software, version 20. Descriptive analysis, sample t-test, one-way ANOVA, Exploratory Factor Analysis and Regression Analysis for hypotheses testing were applied for analyzing data received by the survey method. The purpose of the Factor Analysis is to manage many variables into a few factors to avoid multi collinearity effect of highly correlated variables. The Factor analysis used by Murshid et al., (2014) for Physician Satisfaction and Sales was applied for the present study. Factor Analysis allows us to look at groups of variables that tend to be correlated to each other and is used to eliminate the multi-collinearity effect of the variable for data reduction and summarization.

The procedures for conducting Factor Analysis (William D N) include problem formulation, construction of correlation matrix, and determination of factors, exploratory rotation and interpretation.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSIONS

4.1 Measurement Model

It is to determine a particular group of variables where related variables fall under specific construct called as a factor (Anglim, 2007). According to Hair et.al (2011) Exploratory Factor Analysis helps to show the possible relationship or interdependence association of variables. In this Exploratory Analysis, researcher do not need to try to confirm relationship among variables; rather the researcher has tried to explore the relationships. Exploratory Factor Analysis (EFA) has been used in this study to measure the relationships of variables of Marketing Strategies and Techniques which affect Stakeholders' Satisfaction and Sales in the Pharmaceutical Cardiac Segment. If the factor loading is greater than 0.40 and component with eigenvalue equal or greater than 1.0 is extracted as factor that can be treated as significant variable within one factor. The reliability of the test can be considered from the value of Cronbach's alpha coefficient. The range of Cronbach's alpha coefficient is 0.6 to 0.8 (Hair et.al,1998). This Exploratory Factor Analysis requires correlation or communalities test, KMO and Bartlett test of Adequacy to prove the goodness of the fit of the model (Malhotra 2006).

4.2. Impact of Marketing Strategies and Techniques (MST) on Stakeholders' Satisfaction

Major stakeholders of Pharmaceutical companies are patients, patients' family, prescribers, hospitals, clinics, influencers (opinion leaders, pharmacists, wholesalers, nurses, suppliers) financiers, regulators (Ministry of health, Drug Administrator) employees and competitors. These parties have an interest or stake in the company's success. From these stakeholders, three types of stakeholders have been selected for this present research due to time, cost and man-power limitation. They are Doctors, Patients and Marketing Professionals who represent the important components of Pharmaceutical Market. A total of 536 respondents were interviewed in this study; out of them 156 were Doctors, 200 were Patients and 180 were Marketing Professionals who have been simply defined as Stakeholders. They were asked to opine their satisfactions about several variables of Marketing Strategies and Techniques of Pharmaceutical companies. Since Stakeholders are completely different and

independent in many aspects; they were provided with same items of questions about Marketing Strategies and Techniques (MST). The three set questionnaires containing fourteen items were provided to doctors; while 13 items were distributed to Marketing Professionals and 11 items were given to patients. They were also asked to rate their overall satisfaction. It is mentioned in method section that all questions (items of statements) were measured in 5-point Likert scale. The samples of three sets questionnaires have been given in the appendix B (I, II and III) respectively.

So, to investigate the effect of Marketing Strategies on Overall Satisfaction of Stakeholders without taking into account of the categorization of stakeholders and to overcome multicollinearity among variables and identify correlation structure among variables (if any); Exploratory Factor Analysis had been applied. After extracting factor scores, they were used as independent variables to see whether there is any significant effect of Marketing Strategies and Techniques on overall satisfaction or not.

As presented in table 4.2, KMO test for the impact of variables of MST on Overall Satisfaction of Stakeholders was 0.721. The Bartlett's test of Sphericity was significant at Chi-square= 468.709 with $p=0.00$ which is $\alpha < 0.05$. Thus the Exploratory analysis for variables of MST indicated suitable to conduct Factor analysis. The Eigen values for each factor exceeding or equal to one are 3.325, 2.000, 1.329 and 1.177 respectively, that explained 56% of the total variance in the table 4.5. Factor 1 labeled as Medicinal benefit accounted for 23.748% of the total variance explained. The variables loaded into the factors are from 0.621 to 0.805. Factor 2 named as Communication benefit in which variables loaded range from 0.431 to 0.781. The variables loaded in Factor 3 represented as convenience benefit range from 0.40 to 0.766. Factor 4 labeled as Economic benefit in which variables loaded range from 0.780 to 0.876 in the table 4.6. Moreover, the result of Correlation Matrix of all variables shows in the Table 4.3 significant association within the variables loaded into the factors. The result of Exploratory Factor Analysis for impact of MST on Stakeholders' Satisfaction was very statistically appropriate for this research. Regression analysis of the factors had been conducted for hypothesis testing. The table 4.8 shows that the most of the variables have significant impact on Stakeholders' Satisfaction.

4.2.1 Descriptive Analysis of the impact of MST on Stakeholders' Satisfaction

To evaluate the efficacy of MST of cardiac medicine suppliers, 536 stakeholders participated to express their satisfaction statements on 5 point Likert scale from 1-5 where 1= Strongly Disagree and 5= Strongly Agree

Table 4.1: Mean score of Stakeholders' Satisfaction about Variables of Marketing Strategies and Techniques (MST)

Variables of MST		Strongly disagree	Disagree	Somehow agree	Agree	Strongly agree	Mean	SD
Efficacy	Count	4	8	69	196	259	4.30	0.81
	Row N %	(.7)	(1.5)	(12.9)	(36.6)	(48.3)		
Brand Image	Count	13	32	163	189	139	3.76	0.98
	Row N %	(2.4)	(6.0)	(30.4)	(35.3)	(25.9)		
Safety information	Count	13	39	153	199	132	3.74	0.99
	Row N %	(2.4)	(7.3)	(28.5)	(37.1)	(24.6)		
Company reputation	Count	4	35	122	215	160	3.92	0.92
	Row N %	(.7)	(6.5)	(22.8)	(40.1)	(29.9)		
New cardiac medicines	Count	12	77	160	171	116	3.56	1.05
	Row N %	(2.2)	(14.4)	(29.9)	(31.9)	(21.6)		
Price-Quality	Count	35	158	157	138	48	3.01	1.08
	Row N %	(6.5)	(29.5)	(29.3)	(25.7)	(9.0)		
Competitive pricing	Count	6	43	104	155	48	3.55	0.93
	Row N %	(1.7)	(12.1)	(29.2)	(43.5)	(13.5)		
Availability	Count	8	37	120	216	155	3.88	0.95
	Row N %	(1.5)	(6.9)	(22.4)	(40.3)	(28.9)		
Location of Pharmacy Place	Count	10	43	139	169	175	3.85	1.03
	Row N %	(1.9)	(8.0)	(25.9)	(31.5)	(32.6)		
Facilities of Model Pharmacy	Count	15	63	73	117	68	3.48	1.14
	Row N %	(4.5)	(18.8)	(21.7)	(34.8)	(20.2)		
Selling skill of Medical Representatives	Count	11	20	68	119	118	3.93	1.04
	Row N %	(3.3)	(6.0)	(20.2)	(35.4)	(35.1)		
Continuous Medical Education program	Count	2	8	47	116	163	4.28	0.84
	Row N %	(.6)	(2.4)	(14.0)	(34.5)	(48.5)		
Awareness campaign	Count	52	141	111	140	92	3.15	1.26
	Row N %	(9.7)	(26.3)	(20.7)	(26.1)	(17.2)		
Promotional policies	Count	5	29	77	120	105	3.87	1.00
	Row N %	(1.5)	(8.6)	(22.9)	(35.7)	(31.3)		
Overall satisfaction	Count	19	49	189	166	113	3.57	1.03
	Row N %	(3.5)	(9.1)	(35.3)	(31.0)	(21.1)		

Figure 4.1 Mean Score of Stakeholders' Satisfaction about variables of Marketing strategies and Techniques (MST)

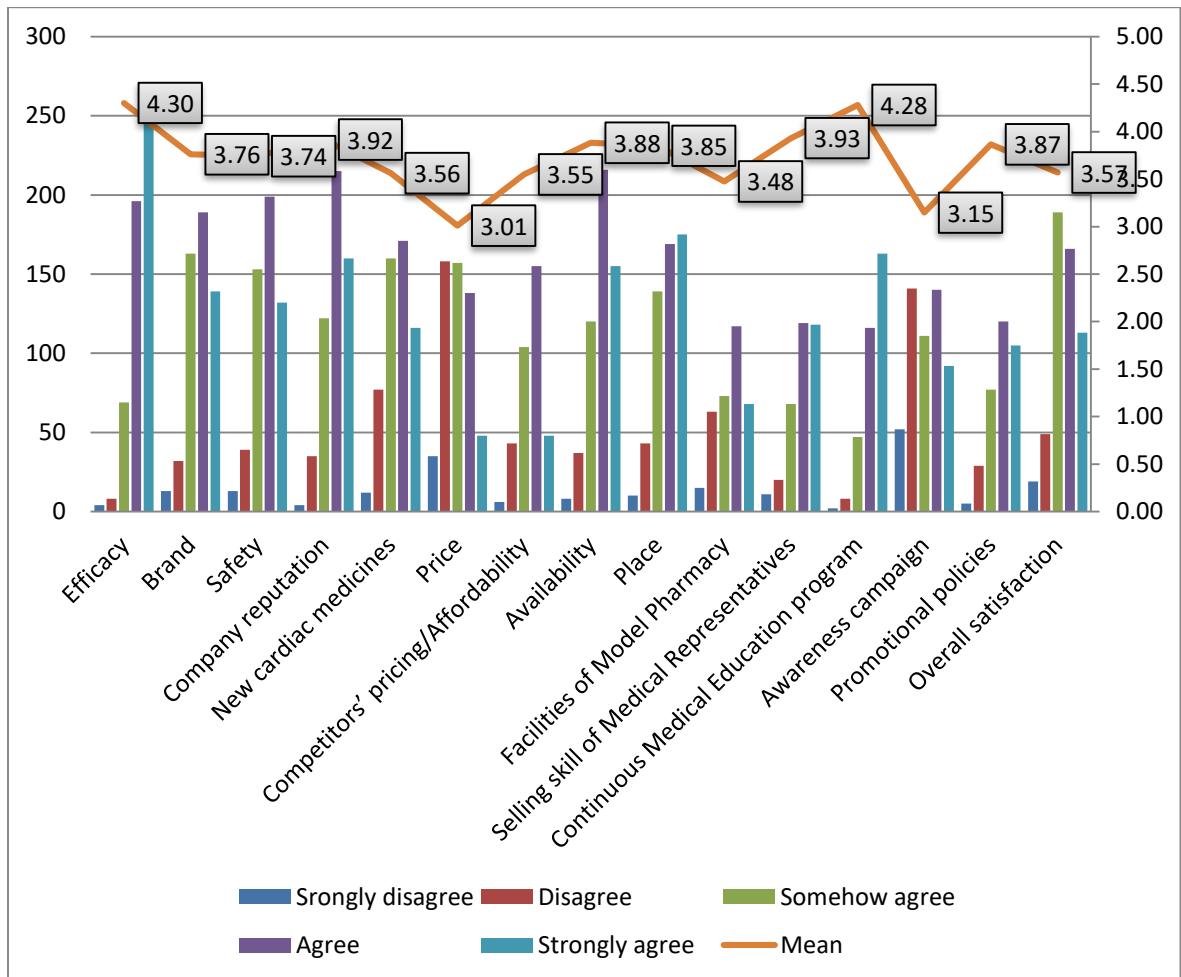


Table 4.1 and figure 4.1 shows that 48% stakeholders strongly agreed and 36% agreed about the efficacy issue, 2% disagreed and 12% were undecided. Mean score of satisfaction regarding efficacy was 4.30 with standard deviation 0.81 whereas other mean scores of variables of MST range from 3.01 to 4.28. It is seen that 25% stakeholders strongly agreed and 35% agreed about the Brand Image of cardiac medicines being an important consideration for their satisfaction. Only 8% disagreed about the statement. Other 30% neither agreed nor disagreed. Mean score was 3.76 and SD was 0.98. Among 536 stakeholders 61% answered positively that safety information about the cardiac medicines supplied by the companies impact on their satisfaction while 10% stated opposite opinion and 28% were undecided. Mean score of the item was 3.74 with SD 0.99.

Company Reputation of cardiac medicine suppliers is an imperative criterion that matters for satisfaction. About 69% gave assertive answer to the statement, 7% gave negative opinion. Other 22% was found neutral. Mean score of the item was 3.92 with SD 0.92. New cardiac medicines impact on satisfaction was more than old medicines. Around 21% strongly agreed and 31% agreed with the statement. Only 16% did not agree and 30% were undecided. The item has a mean score of 3.56 with a SD of 1.05. Price of cardiac medicines is a crucial issue for economic consideration of MST as it is for lifelong usage. Stakeholders (36%) did not agree that they were satisfied with the price of MST, 34% agreed and 30% were found neither agreed nor disagreed. Mean score was 3.01 with SD 1.08 and indicates the lower range of satisfaction. Availability of cardiac medicines in retail, model pharmacies is an important issue for stakeholders as it is life-saving medicines. Almost 69% of stakeholders agreed about the issue; 8% disagreed and 22% was found to be neutral. Mean Score of the item was 3.88 and SD was 0.95. The Stakeholders of three categories were asked to express their opinion regarding the location of pharmacy place is imperative for stakeholders' satisfaction. Around 64.1% of the stakeholders agreed but 25.9% was found neutral and only 9.1% disagreed about the issue. The mean score was 3.85 with SD 1.03. Facilities of Model Pharmacy are satisfactory in the context of Bangladesh. The stakeholders agreed that the impact of facilities of model pharmacy is more satisfactory than retail pharmacy is 55%; 21.7% of the respondents neither agreed nor disagreed about the statement and 23% of the stakeholders disagreed. The mean score of the element was 3.48 with SD 1.14.

Selling or Communication Skills of Medical Representatives (MR) play an important role to create an impact on doctor's satisfaction to prescribe medicines for sales. A total 70.6% of stakeholders replied in favor of the statement and 20.2% of the stakeholders neither agreed nor disagreed about the statement. Only 9.3% of the respondents disagreed. The mean score was 3.93 with a SD of 1.04 about the statement.

Continuous Medical Education for doctors through seminar, conference is a crucial factor that impacts on doctors' satisfaction to prescribe medicines for a particular pharmaceutical company. Almost 83% of the stakeholders agreed to the statement; 14% of them were found neutral and 3% disagreed about the statement. The mean score and SD were 4.28 and 0.84 respectively.

An Awareness Campaign to prevent cardiac diseases by the Pharmaceutical companies is satisfactory. The stakeholders agreed with the statement is 43%; 36% disagreed and 20.7% was found neither agreed nor disagreed. Mean score was 3.15 which represent lower range of the satisfaction means scores.

Promotional Policies include incentives like free samples, gift items for doctors which are very effective tools to motivate doctors for reminding the medicines of the particular company to prescribe. Around 66% of the stakeholders agreed, 10.1% disagreed and 22.9% were found neither agreed nor disagreed. The mean score and SD were 3.87 and 1.00 respectively. Figure 4.1 shows the mean scores of Overall Satisfaction of Stakeholders about Marketing Strategies and Techniques (MST) is 3.57.

4.2.2 Sample Adequacy (Stakeholders' Satisfaction)

Table 4.2 shows the sample is adequate as KMO value is more than 0.60 and significant value of Bartlett's test of Sphericity is good enough that indicate sample of the study can be carried on for factor analysis.

Table 4.2 : KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.721
Bartlett's Test of Sphericity	Approx. Chi-Square	468.709
	df	91
	Sig.	0.000

Source: Prepared by Researcher

4.2.3 Correlation Matrix (Stakeholders' Satisfaction)

Table 4.3 of Correlation matrix shows the inter correlation among the independent variables of MST such as Efficacy, Brand Image, Safety Information, Company Reputation, New Cardiac Medicine, Price-Quality, Competitive Price, Place of Location, Facility of Model Pharmacy, Continuous Medical Education for doctors, Awareness Campaign and Promotional Policies with dependent variable Stakeholders' Satisfaction.

Table 4.3 Correlation Matrix (Stakeholders' Satisfaction)

	EF	BI	SF	CR	NM	PR	AF	AV	PL	FM	SSM R	CME	AWC	PP
Efficacy	1	.140**	.382**	.182**	-.012	.311**	.175**	.294**	-.119**	.014	-.009	.201**	.375**	.074
Brand	.140**	1	.189**	.307**	.157**	.113**	.190**	.118**	.308**	.268**	.314*	.283**	.075	.165**
Safety	.382**	.189**	1	.141**	-.009	.355**	.208**	.372**	-.016	.154**	.078	.224**	.422**	.076
Company reputation	.182**	.307**	.141**	1	.067	.241**	.206**	.267**	.125**	.022	.326*	.296**	.135**	.149**
New cardiac medicines	-.012	.157**	-.009	.067	1	-.025	.177**	.070	.314**	.191**	.246*	.113*	-.106*	.305**
Price-quality	.311**	.113**	.355**	.241**	-.025	1	.271**	.363**	-.106*	.324**	.278*	.245**	.557**	.066
Competitive price	.175**	.190**	.208**	.206**	.177**	.271**	1	.743**	.217**	.218**	.397*	.306**	.149**	.238**
Availability	.294**	.118**	.372**	.267**	.070	.363**	.743**	1	.064	.003	.348*	.332**	.342**	.167**
Place	-.119**	.308**	-.016	.125**	.314**	-.106*	.217**	.064	1	.363**	.246*	.204**	-.194**	.100
Facilities of Model Pharmacy	.014	.268**	.154**	.022	.191**	.324**	.218**	.003	.363**	1	-.003	.167**	.287**	-.098
Selling skill of Medical Representatives	-.009	.314**	.078	.326**	.246**	.278**	.397**	.348**	.246**	-.003	1	.362**	.298**	.380**
Continuous Medical Education program	.201**	.283**	.224**	.296**	.113*	.245**	.306**	.332**	.204**	.167**	.362*	1	.425**	.141**
Awareness campaign	.375**	.075	.422**	.135**	-.106*	.557**	.149**	.342**	-.194**	.287**	.298*	.425**	1	.205**
Promotional policies	.074	.165**	.076	.149**	.305**	.066	.238**	.167**	.100	-.098	.380*	.141**	.205**	1

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

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

Source: Prepared by Researcher

4.2.4 Communalities (Stakeholders' Satisfaction)

Communalities define the estimation of shared variance of the variables. The variance in a variable is explained by the extracted factors. For each variable the value of the communality is expected to be more than 0.40. It has been shown in the table 4.4 of Communalities (Stakeholders' Satisfaction).

Table 4.4: Communalities (Stakeholders' Satisfaction)

Independent Variables	Initial	Extraction
Efficacy	1.000	0.409
Brand Image	1.000	0.473
Safety Information	1.000	0.468
Company reputation	1.000	0.420
New Cardiac medicines	1.000	0.412
Price-Quality	1.000	0.573
Competitive Price	1.000	0.803
Availability	1.000	0.807
Location of Pharmacy	1.000	0.650
Facilities of Model pharmacy	1.000	0.698
Selling Skill of Medical Representatives	1.000	0.636
Continuous Medical Education program	1.000	0.407
Awareness Campaign	1.000	0.672
Promotional Policies	1.000	0.561

Source: Prepared by Researcher

4.2.5 Factor Extraction (Stakeholders' Satisfaction)

Factor extraction is defined as a cluster of grouping of variables in distinctive factor. Eigen value is used as the most common criteria in order to choose the appropriate number of factors. Eigen value or latent root value 1 or greater determines the expected number of factors in the study (Malhotra, 2010). After running the factor analysis, the final table has been shown below where total four factors are extracted. About 56% of variance is explained with the help of the extracted factors from the dataset in the table 4.5.

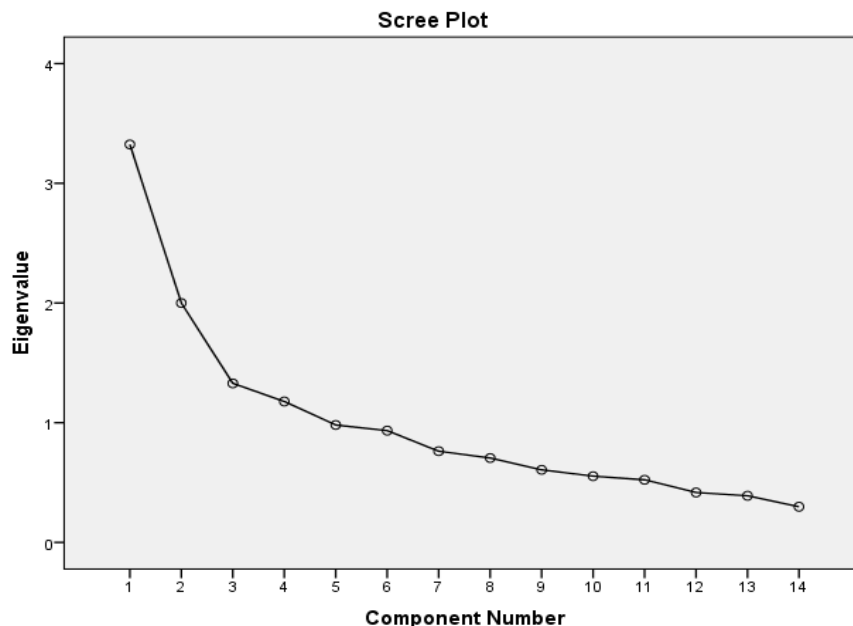
Table 4.5: Extracted Communalities from Extraction Method by Principal Component Analysis (Total Variance Explained)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.325	23.748	23.748	3.325	23.748	23.748	2.573	18.379	18.379
2	2.000	14.284	38.032	2.000	14.284	38.032	1.910	13.645	32.023
3	1.329	9.491	47.523	1.329	9.491	47.523	1.751	12.509	44.532
4	1.177	8.410	55.934	1.177	8.410	55.934	1.596	11.401	56.000

Source: Prepared by Researcher (Extraction Method: Principal Component Analysis.)

Scree Plot of Eigen value and Component numbers (14 Variables) in the figure 4.2 depicts that factors one, two, three and four have Eigen values equal and more than one and extracted 56% variance can be explained by the F1, F2, F3, and F4.

Figure 4.2: Scree Plot of Eigen value and Component numbers (14 Variables)



Most of authors (Like Hair et al.) suggest a factor would be considered as important if Eigen value is greater than 1. From Table 4.5 it is seen that, first two components have Eigen values greater than 1 (3.325 and 2.000 respectively); but they both explain only

38.032% variation of the 14 variables/items. Since the third and fourth components' Eigen value is 1.329 and 1.177 respectively. These factors explained variation to 56% along with first two components. 14 Items of satisfaction statements were evaluated by 536 stakeholders including Cardiologists, Cardiac patients of 15 different Hospitals and Marketing Professionals of 18 Pharmaceutical companies producing cardiac medicines.

According to Factor analysis, Awareness Campaign (AWC13), Price signal Quality (PQ6), Safety Information (SI3), and Efficacy (EF1) are highly correlated variables grouped into Factor1. The Factor1 was defined as 'Medicinal benefit'. The relative important variable is Awareness Campaign helps to prevent the occurrence of diseases. So, preventive measures are better than sufferings from the cardiac problem. Price signals the quality of the cardiac drug. Since cardiac medicines are lifesaving drugs, patients tend to overlook the price in favor of its quality. Price and Quality of the cardiac medicines has got second priority item by the evaluation of the stakeholders. Price-Quality relationship is an important economic consideration that needs to be considered while prescribing and selling the medicines to the end-users, patients.

Safety Information about the cardiac medicines should be supplied by the companies in the form of leaflets as it has been considered an important variable in Factor 1. Success of disease management depends on efficacy of cardiac medicines which was also loaded in Factor 1. If the medicines do not perform properly to reduce cardiac problem, patient's complaints can influence doctors to select alternative medicines of other companies. Factor 1 was labeled as 'Medicinal benefit'. The variables that are highly correlated have loaded in Factor 2 are Selling Skill of Medical Representatives (SSMR11), Promotional Policies (PP14), Continuous Medical Education (CME12) and Company Reputation (CR7).

As cardiac medicines are lifesaving medicines, items of F2 impact on the prescribing decision of the doctors. Factor 3 labeled as 'Convenience benefit' containing four variables such as Facilities of Model Pharmacy (FMP10), Location of Pharmacy(LP9), Brand Image(BI2) and New medicines(NM5). Factor 4 labeled as 'Economic benefit' which includes satisfaction of the cardiac patients depends on Availability (AV8) of prescribed medicines in the retail, model and hospital pharmacies. Interaction and relation of end-users and medicines suppliers occur on the basis of availability of particular prescribed

medicines. The patients purchase medicines for the benefit to get rid of cardiac problem within a Competitive Price (CP7). Unless they feel the effectiveness of the medicine for the purpose of its use and the utility of their money, they complain to the doctors about the outcome of the medicines. The doctors look for other alternatives of the competitors' products.

4.2.6 Rotated Component Matrix (Stakeholders' Satisfaction)

The table 4.6 of Rotated Component Matrix shows the meaningful factor rotation in the matrix. To avoid the cross loading less than 0.40 must be suppressed (Sekran1994). As each factor needs to be unique and distinct after running of factor analysis the Rotated Matrix shows the ultimate demonstration of independent variables associated to respective factors. Some of the variables excluded because of cross loading. Based on the theories and literatures the final factors are named as Medicinal, Economic, Convenience and Communication Relationship Benefits.

Table4.6 Rotated Component Matrix(Stakeholders' Satisfaction)

Factor Name	Component variables of statement	Factor loading on rotated component matrix			
		1	2	3	4
Medicinal Benefit					
AWC13	Awareness campaign	0.805			
PQ6	Price-quality	0.736			
SI3	Safety Information	0.648			
EF1	Efficacy	0.621			
Communication Relationship Benefit					
SSMR11	Selling Skill of Medical Representatives		0.781		
PP14	Promotional policies		0.735		
CME9	Continuous Medical Education		0.476		
CP7	Company Reputation		0.431		
Convenience Benefit					
FMP10	Facilities of Model Pharmacy			0.766	
LP9	Location of Pharmacy			0.701	
BI2	Brand Image			0.573	
NM5	New medicine			0.393	
Economic Benefit					
CP7	Competitive Price				0.876
AV8	Availability				0.780

Source: Prepared by Researcher

Research Hypotheses (Stakeholders' Satisfaction)

H₁: Efficacy of medicine has positive impact on Stakeholders' Satisfaction.

H₂: Brand image of medicine has positive impact on Stakeholders' Satisfaction.

H₃: Safety information of medicine has positive impact on Stakeholders' Satisfaction.

H₄: Company reputation has positive impact on Stakeholders' Satisfaction.

H₅: New medicine has positive impact on Stakeholders' Satisfaction.

H₆: Price signal quality has positive impact on Stakeholders' Satisfaction.

H₇: Competitive pricing has positive impact on Stakeholders' Satisfaction.

H₈: Availability of medicines has positive impact on Stakeholders' Satisfaction.

H₉: Location of Pharmacy Place has positive impact on Stakeholders' Satisfaction.

H₁₀: Facilities of Model Pharmacy have positive impact on Stakeholders' Satisfaction.

H₁₁: Selling Skill of Medical Representative has positive impact on Stakeholders' Satisfaction.

H₁₂: Continuous Medical Education (CME) program for doctors' has positive impact on Stakeholders' Satisfaction.

H₁₃: Awareness Campaign to prevent cardiac disease has positive impact on Stakeholders' Satisfaction.

H₁₄: Promotional Policies have positive impact on Stakeholders' Satisfaction.

4.2.7 Test of Hypothesis (Stakeholders' Satisfaction)

To investigate whether the variables of MST have significant impact on overall satisfaction. Factor scores are used as independent variables in regression analysis.

Summary of regression analysis is shown in table 4.7.

Table: 4.7 Summary of Regression analysis (Stakeholders' Satisfaction)

R	0.643
R Square	0.414
Adjusted R square	0.410
F statistic (d _{f1} ,d _{f2})	93.804
Sig	0.000

(Dependent Variable: Overall satisfaction, Predictors: (constant) Factor 4, Factor 3, Factor 2, Factor 1)

Source: Prepared by Researcher

Table 4.8: Coefficients of Factors (Stakeholders' Satisfaction)

Model		Coefficients				
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		Beta	Std. Error	Beta		
	(Constant)	3.569	0.034		104.237	0.000
	Factor 1	0.567	0.034	0.549	16.541	0.000
	Factor 2	0.268	0.034	0.260	7.820	0.000
	Factor 3	0.058	0.034	0.057	1.702	0.089
	Factor 4	0.210	0.034	0.204	6.130	0.000

a. Dependent Variable: Overall satisfaction

Source: Prepared by Researcher

4.2.8 Relationship of Independent variables of MST with Dependent Variable Stakeholders' Satisfaction

The table 4.7 it is seen that overall impact of 4 factors is significant ($F_{df1, df2} = 93.84$, $p=0.000$) and Coefficient table 4.8 indicates that factor 1 and 2 have significant effect on overall satisfaction. Hence, Awareness Campaigns, Price signal Quality, Safety and Efficacy of F1 have significant effect on Overall Satisfaction of Stakeholders with Beta coefficient 0.567 and p value 0.000. Similarly, the variables loaded factor 2 named Communication Relationship benefit have Beta coefficient 0.268 and p value 0.000. The variables Facilities of Model Pharmacy, Location of Pharmacy Place, Brand Image and New cardiac medicines loaded factor 3 named Convenience benefit have no significant impact on overall satisfaction of stakeholders where Beta coefficient is 0.058 and p value 0.089. Factor 4 named as Economic Benefit includes competitive price and availability and have significant effect on Stakeholders' Satisfaction with Beta coefficient 0.210 and p value 0.000. The summary of the variables of factors that impact on Stakeholders' Satisfaction was given in the table 4.9.

Table 4.9. Summary of Results of Research Hypothesis: Impact of Marketing Strategies and Techniques on Stakeholders' Satisfaction

S1	Research Hypotheses	P value	Result
H₁	Efficacy of cardiac medicine has impact on Stakeholders' Satisfaction	0.000	Accepted
H₂	Brand Image of cardiac medicine has insignificant impact on Stakeholders' Satisfaction	0.089	Rejected
H₃	Safety Information of cardiac medicine has significant impact on Stakeholders' Satisfaction	0.000	Accepted
H₄	Company Reputation has significant impact on Stakeholders' Satisfaction	0.000	Accepted
H₅	New Cardiac Medicine has no significant impact on Stakeholders' Satisfaction	0.089	Rejected
H₆	Price signal Quality of cardiac Medicine has positive impact on Stakeholders' Satisfaction	0.000	Accepted
H₇	Competitive Pricing has significant impact on Stakeholders' Satisfaction	0.000	Accepted
H₈	Availability of cardiac medicine has positive impact on Stakeholders' Satisfaction	0.000	Accepted
H₉	Location of Retail Pharmacy has no significant impact on Stakeholders' Satisfaction	0.089	Rejected
H₁₀	Facilities of Model Pharmacy has no significant impact on Stakeholders' Satisfaction	0.089	Rejected
H₁₁	Selling Skill of Medical Representatives has significant impact on Stakeholders' Satisfaction	0.000	Accepted
H₁₂	Continuous Medical Education(CME) program for doctors have significant impact on Stakeholders' Satisfaction	0.000	Accepted
H₁₃	Awareness Campaign to prevent cardiac disease has positive impact on Stakeholders' Satisfaction	0.000	Accepted
H₁₄	Promotional Policies(incentives)have significant impact on Stakeholders' Satisfaction.	0.000	Accepted

Source: Prepared by Researcher

The Normal P-P plot of Regression standardized Residual, Scatter plot and Reliability of data set are given in the appendix C

4.3 Impact of Marketing Strategies and Techniques on Overall Satisfaction of individual Stakeholder:

The motivation to conduct Regression Analysis for 3 stakeholders separately is due to the fact that the three stakeholders are completely different from each other and hence, it is demanded to explore the impact of Marketing Strategies and Techniques on overall satisfaction of each stakeholder separately. Thereby, the impacts of Marketing Strategies and Techniques on overall satisfaction of doctors to prescribe, patients to consume and

Marketing Professionals to sell the medicines are evaluated. In the upcoming section, it has been attempted to investigate whether the impact of Marketing Strategies and Techniques on overall satisfaction differ among stakeholders or not.

4.3.1 Descriptive Analysis: Impact of Marketing Strategies and Techniques on Doctors' Satisfaction to prescribe

Doctors (cardiologists) are the direct customers of health care who provide treatment to the patients (cardiac patients) who are the consumers but not decision makers like consumer goods. Doctors are the decision makers who prescribe medicine for the patients according to their medical knowledge and follow some cost-benefit logic for the patients. Pharmaceutical companies are the suppliers of different categories of therapeutic medicines and communicate to the various categories of doctors according to their professional academic rank such as lecturers, assistant professors, associate professors and professors of hospitals for prescribing. In this research, cardiologists of different academic positions in cardiac departments and hospitals have participated to express their opinion about the importance of relative factors that impact their satisfaction to prescribe cardiac medicines for the patients. The doctors involved in the medical service ranks of consultants, registrars and directors also participated in the survey. The opinion leaders are the professors or leaders of Medical Association who have long years of experience on successful practice act as influencers for the junior doctors. They are the main target customers for the marketing managers. Pyramid of influencers are the opinion leaders, head of department, director of hospital specialists and general practitioners. The stakeholders of pharmaceutical companies are many. Three types of stakeholders have been selected for the study. They are doctors (cardiologists), patients (cardiac patients) and Marketing professionals of pharmaceutical companies. The managers formulate the strategies and techniques to create an impact on customers (doctors and patients) satisfaction to sell the cardiac medicines in order to compete with competitors and increase sales. The customer's preference depends on the benefits of medicinal, economic, convenience and communicational relationship. The key issues are the variables of the factors that affect customers' satisfaction. In the pharmaceutical industry, doctors are the direct customers and the indirect end users are the patients. The literatures and theories of doctors' satisfaction have been discussed in this study. The table 4.10 and figure 4.3 show

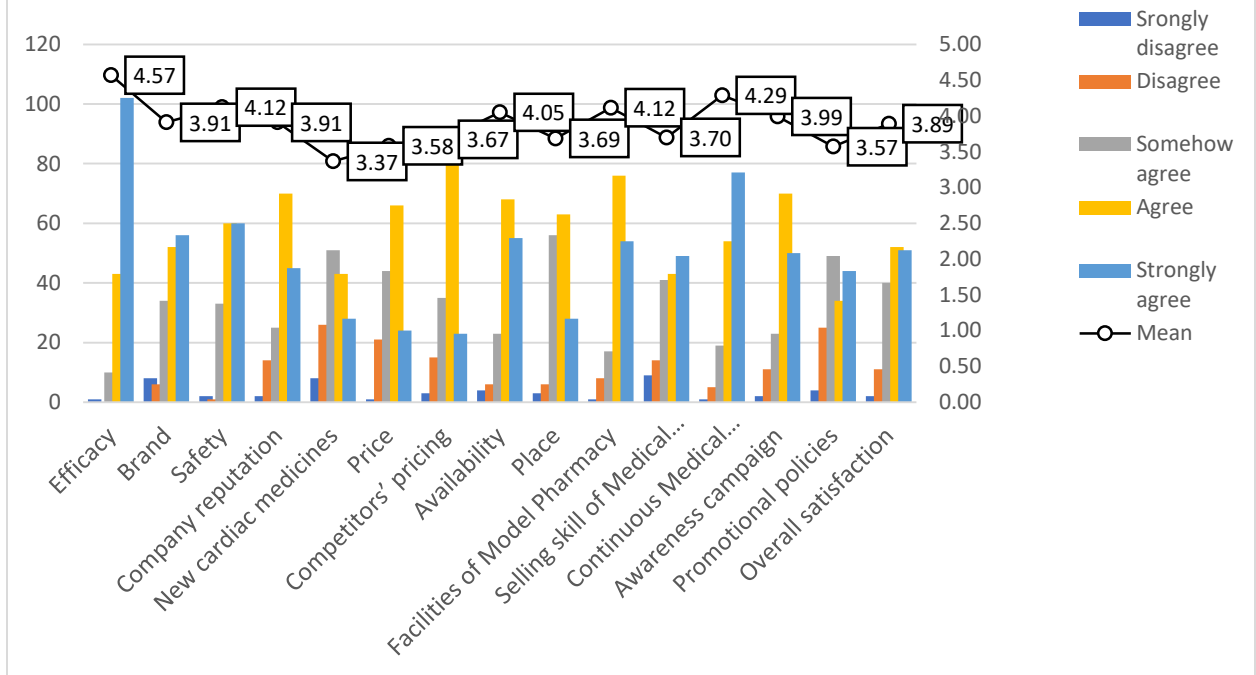
descriptive analysis of Impact of Marketing Strategies and Techniques on Doctors' Satisfaction.

Table 4.10: Descriptive Analysis: Impact of Marketing Strategies and Techniques on Doctors' Satisfaction

Variables of MST	Strongly disagree	Disagree	Somewhat agree	Agree	Strongly agree	Mean	SD
Efficacy	1	0	10	43	102	4.57	.673
	(.64)	(.00)	(6.41)	(27.56)	(65.38)		
Brand Image	8	6	34	52	56	3.91	1.092
	(5.13)	(3.85)	(21.79)	(33.33)	(35.90)		
Safety Information	2	1	33	60	60	4.12	.853
	(1.28)	(.64)	(21.15)	(38.46)	(38.46)		
Company Reputation	2	14	25	70	45	3.91	.960
	(1.28)	(8.97)	(16.03)	(44.87)	(28.85)		
New cardiac medicines	8	26	51	43	28	3.37	1.113
	(5.13)	(16.67)	(32.69)	(27.56)	(17.95)		
Price- Quality	1	21	44	66	24	3.58	.930
	(.64)	(13.46)	(28.21)	(42.31)	(15.38)		
Competitive Pricing	3	15	35	80	23	3.67	.910
	(1.92)	(9.62)	(22.44)	(51.28)	(14.74)		
Availability	4	6	23	68	55	4.05	.942
	(2.56)	(3.85)	(14.74)	(43.59)	(35.26)		
Location of Pharmacy Place	3	6	56	63	28	3.69	.878
	(1.92)	(3.85)	(35.90)	(40.38)	(17.95)		
Facilities of Model Pharmacy	1	8	17	76	54	4.12	.842
	(.64)	(5.13)	(10.90)	(48.72)	(34.62)		
Selling skill of Medical Representatives	9	14	41	43	49	3.70	1.172
	(5.77)	(8.97)	(26.28)	(27.56)	(31.41)		
Continuous Medical Education program	1	5	19	54	77	4.29	.850
	(.64)	(3.21)	(12.18)	(34.62)	(49.36)		
Awareness Campaign	2	11	23	70	50	3.99	.933
	(1.28)	(7.05)	(14.74)	(44.87)	(32.05)		
Promotional policies	4	25	49	34	44	3.57	1.137
	(2.56)	(16.03)	(31.41)	(21.79)	(28.21)		
Overall satisfaction	2	11	40	52	51	3.89	.987
	(1.28)	(7.05)	(25.64)	(33.33)	(32.69)		

Source: Prepared by Researcher

Figure 4.3: Mean Scores of Doctors' satisfaction about the variables of Marketing Strategies and Techniques



Marketing managers attempt to create a demand for their cardiac medicine by directly influencing intermediary customers (doctors) to generate prescription for cardiac medicine. So, a combination of push and pull strategies are effective for prescription of cardiac medicines. Doctors are valuable stakeholders and customers who prescribe cardiac drugs for cardiac patients. Perception of doctors towards the Marketing Strategies and Techniques need to be considered by the cardiac medicine suppliers. In this study, 156 cardiologists were requested to evaluate the attributes of marketing strategies. Table 4.10 shows that 93% doctors agreed that efficacy and quality are important for their satisfaction to prescribe the medicines, 6% did not agree about it. 1% was found neutral (Mean score=4.57). About 69% of doctors answered that brand name matters more than generic name of the cardiac medicines and 22% gave no decision, 9% disagreed (Mean score=3.91). Doctors opined that company reputation influences them to prescribe cardiac medicines were 77% where as 21% were neutral and 2% disagreed (Mean score=3.91). About 46% doctors agreed that newer medicines sell more than older drugs, 21% disagreed in this statement and 23% were neutral (Mean score=3.37). Almost 58% cardiologists agreed that price is reflected to quality ;14% of them disagreed and 28% were undecided

(Mean score=3.58). The physicians agreed that they consider the competitive price of cardiac medicines while prescribing is 65% (Mean score=3.67). Around 79% cardiologist thought availability of medicine is very important and 6% disagreed (Mean score=4.05). Among them 59% agreed that Location of retail pharmacy (Mean score=3.69) that make availability of cardiac medicines every places of Dhaka City is important for the doctors to prescribe the medicines. The percent of physicians neither agreed nor disagreed totaled 36%. For evaluating communication strategies, 58% of cardiologists agreed that knowledge and Selling Skill of Medical Representatives influence prescribing decision (Mean score=3.70). Most of the doctors (83%) expressed their satisfaction about the newly introduced concept of Model pharmacy and to them its facility is important for prescribing cardiac medicine. While 6% of them disagreed and others were found neutral (Mean score=4.12). Continuous Medical Education for doctors through seminar and conference has impact on prescription of cardiac medicine suppliers, agreed by 84% doctors (Mean score=4.29). About 77% doctors agreed that the Awareness Campaign for cardiac patient is very crucial to prevent the cardiac problem, 15% were undecided (Mean score=3.99). Only 50% of cardiologists agreed that Promotional Policies influence them to prescribe medicines, 31% physicians were neutral in this regard (Mean score=3.57). Mean Score of overall satisfaction about the variables of Marketing Strategies and Techniques was 3.89 which indicates the doctors are moderately satisfied.

4.3.2 Sample Adequacy (Doctors' Satisfaction)

Table 4.11 KMO value is 0.821 more than 0.60 and significant value of Bartlett's test of sphericity is good enough. All these indicate the study can carry on Factor analysis.

Table 4.11 KMO and Bartlett's Test (Doctors' Satisfaction)

KMO and Bartlett's Test	
Kaiser-Meyer-Olkin Measure of Sampling	0.821
Approximate chi-Square	570.685
df	91
Sig	0.000

Source: Prepared by Researcher

4.3.3 Correlation Matrix (Doctors' satisfaction)

Perception about Marketing Strategies and Techniques was undertaken to determine the factors underlying satisfaction statements. A set of 14 variables which are the items measuring the doctors' satisfaction were constructed. Doctors (Cardiologists) of different ranks were asked to express their degree of agreement with the 14 items on a 5-point Likert scales. The data was collected by distributing self-administered questionnaires to doctors of cardiology departments in different hospitals in Dhaka city. A total of 156 questionnaires containing responses about satisfaction statement were obtained.

Table 4.12 Correlation Matrix (Doctors' satisfaction).

	EF	BR	SF	CR	NM	PR	CP	AV	PL	FM	SMR	CME	AW	PP
Efficacy	1	.211**	.193*	-.010	.150	.156	-.083	-.046	.000	.179*	-.116	.150	.150	.069
Brand	.211**	1	.247**	.300**	.293**	.357**	.412**	.274**	.388**	.250**	.483**	.271**	.215**	.338**
Safety	.193*	.247**	1	.195*	.313**	.211**	.093	.281**	.232**	.169*	.076	.165*	.058	.094
Company reputation	-.010	.300**	.195*	1	.103	.392**	.469**	.440**	.250**	.268**	.377**	.332**	.187*	.195*
New cardiac medicines	.150	.293**	.313**	.103	1	.198*	.233**	.154	.309**	.237**	.327**	.113	.176*	.461**
Price	.156	.357**	.211**	.392**	.198*	1	.326**	.378**	.305**	.342**	.387**	.365**	.309**	.190*
Competitors' Pricing	-.083	.412**	.093	.469**	.233**	.326**	1	.419**	.339**	.218**	.397**	.306**	.157	.238**
Availability	-.046	.274**	.281**	.440**	.154	.378**	.419**	1	.324**	.245**	.312**	.352**	.176*	.105
Place	.000	.388**	.232**	.250**	.309**	.305**	.339**	.324**	1	.285**	.490**	.286**	.155	.271**
Facilities of Model Pharmacy	.179*	.250**	.169*	.268**	.237**	.342**	.218**	.245**	.285**	1	.232**	.359**	.354**	.173*
Selling skill of Medical Representatives	-.116	.483**	.076	.377**	.327**	.387**	.397**	.312**	.490**	.232**	1	.295**	.340**	.435**
Continuous Medical Education Program	.150	.271**	.165*	.332**	.113	.365**	.306**	.352**	.286**	.359**	.295**	1	.433**	.116
Awareness campaign	.150	.215**	.058	.187*	.176*	.309**	.157	.176*	.155	.354**	.340**	.433**	1	.326**
Promotional policies	.069	.338**	.094	.195*	.461**	.190*	.238**	.105	.271**	.173*	.435**	.116	.326**	1

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

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

Source: Prepared by Researcher

To explore the response, patterns between items and dimension of satisfaction statements were reduced to a manageable number of variables for analysis. Principal Component Factor Analysis with Varimax Rotation was applied. Four factors have been extracted with Eigen value greater than 1 and equal to 1. Variables with higher loading were loaded on

respective factors. The table 4.12 shows the interdependent of independent 14 variables of MST and dependent variable Doctors' satisfaction

4.3.4 Communalities (Doctors' Satisfaction)

The variance in a variable is explained by the extracted factors. For each variable the value of the communality is expected to be more than 0.40. It has been shown in table 4.13 of Communalities.

Table 4.13: Communalities (Doctors' Satisfaction)

	Initial	Extraction
Efficacy	1.000	0.668
Brand	1.000	0.488
Safety	1.000	0.699
Company reputation	1.000	0.552
New cardiac medicines	1.000	0.655
Price	1.000	0.489
Competitors' pricing	1.000	0.563
Availability	1.000	0.609
Place	1.000	0.465
Facilities of Model Pharmacy	1.000	0.463
Selling skill of Medical Representatives	1.000	0.701
Continuous Medical Education program	1.000	0.605
Awareness campaign	1.000	0.705
Promotional policies	1.000	0.687
Extraction Method: Principal Component Analysis.		

4.3.5 Factor Extraction by Principal Component Analysis

Table 4.14 indicates that 4 factors with Eigen values greater than 1 explain 59.64 %variation of the total14 variables. The communalities of present data set are perfect enough to go for further analysis according to the table 4.13 as all the variables are greater than 0.40. The principal components method using Varimax Rotation reduced the 14 explanatory variables into 4 factors having Eigen values greater than 1.0. It has been shown in figure 4.4.

For the purpose of interpretation, each factor was composed of variables that loaded 0.40 or higher on that factor. Factor analysis helps reducing the number of total items and selects the relevant ones under the specific factors. It measures the interrelationships among the variables. On the contrary, a few assumptions and preconditions are supposed to confirm the fitness of data for applying the analysis. The objective of factor analysis is to find the appropriate variables of the specific factors included in MST.

Table 4.14: Extracted Communalities from Extraction Method by Principal Component Analysis Total Variance Explained (Doctors' satisfaction)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
	1	4.428	31.630	31.630	4.428	31.630	31.630	2.703	19.310
2	1.427	10.196	41.826	1.427	10.196	41.826	2.271	16.219	35.528
3	1.334	9.532	51.358	1.334	9.532	51.358	1.995	14.248	49.777
4	1.160	8.283	59.641	1.160	8.283	59.641	1.381	9.864	59.641(60)

Source: Prepared by Researcher (Extraction Method: Principal Component Analysis)

4.3.6 Rotated Component Matrix (Doctors' Satisfaction)

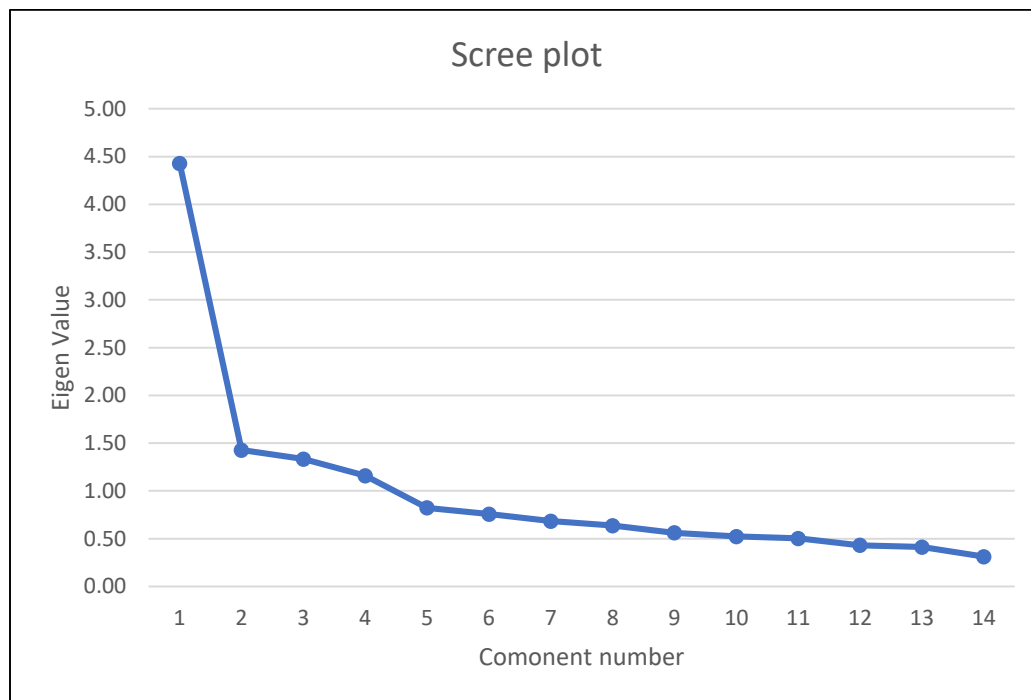
Table 4.15 implies that the items of satisfaction statements AV8, CR4, CP7, and PQ6 are related to Factor 1. These items actually indicate medicinal economic consideration of the doctors while prescribing the medicines. So, Factor 1 was defined as Economic -Medicinal benefit.

Availability, Company Reputation, Competitive Price and Price-Quality relationship have attracted doctors' preference for the economic consideration of the patients' affordability. Company Reputation plays an important role in their prescribing decision and satisfaction. Competitive price for the cardiac patients to purchase cardiac medicines have an impact on doctors' satisfaction. Another variable loaded in Factor1 Price signal the Quality of medicines. Marketing Professionals of Pharmaceutical companies who formulate the

Marketing Strategies and Techniques need to consider the variables as the most important items for selling medicines.

Factor 2 labeled as Medicinal- Communication relation benefit consists of items PP14, NC5, SSMR11, BI2 and LP9. Factor 3 is labeled as Communication benefit and contains variables AC13, CME12, FM10. Medicinal benefit tagged as Factor 4 comprises of SI3 and EF1.

Figure 4.4 Scree plot of Eigenvalue and variable components (Doctors)



Factor 3 was interpreted as communication benefit in the sense that it deals with the items such as AWC13, CME9, and FMP10 that influences doctors to prescribe medicine. Awareness Campaigns to prevent cardiac diseases for patients and the public, Continuous Medical Education about new and existing medicine for doctors and Facilities of newly introduced Model Pharmacy for ensuring the quality of the medicines are the crucial variables for the doctors that impact on their satisfaction to prescribe the medicines.

Table 4.15: Rotated Factor Matrix (Doctors' Satisfaction)

Factor Name	Component variables of statement	Factor loading on rotated component matrix (components)			
		1	2	3	4
Economic-medical Benefit					
AV 8	Availability	0.754			
CR 4	Company Reputation	0.708			
CP 7	Competitive Price	0.683			
PQ 6	Price signal Quality	0.483			
Medicinal-communication Benefit					
PP14	Promotional Policies		0.806		
NC5	New Cardiac Medicines		0.726		
SSMR 11	Selling Skill Of MR		0.628		
BI 2	Brand Image		0.505		
LP 9	Location of Pharmacy		0.480		
Communication Benefit					
AWC 13	Awareness Campaign			0.786	
CME 9	Continuous Medical Education			0.664	
FMP 10	Facilities Of Model Pharmacy			0.599	
Medicinal Benefit					
S13	Safety information				0.770
NM5	Efficacy				0.643

Source: Prepared by Researcher

Factor 4 was presented as Medicinal benefit that includes the items S13 and NM5. The safety of medicines is an imperative issue and has a very important impact on doctors' decision-making process while prescribing. The safety information of the medicine and new medicines in the market attract doctors for the trial of new medicines. So, the items loaded in factor 4 have been considered as 'Medicinal benefit'. Table 4.15 shows the loading of items were ranged from 0.643 to 0.770.

The objective of the study was to evaluate the impact of Marketing Strategies and Techniques of Pharmaceutical companies on the cardiac market and to assess the overall satisfaction on the relative importance of the variables. Factor analysis was performed on the explanatory variables with the primary goal of dimension reduction.

4.3.7 Test of Research Hypotheses of Doctors' Satisfaction

To achieve the research objectives for illustrating the impact of Marketing Strategies and Techniques on Doctors' Satisfaction to prescribe medicines for sales performance of Pharmaceutical companies, the following research hypotheses were constructed and tested by Regression analysis which are presented in the tables 4.16, 4.17 and 4.18 respectively.

H₁: Efficacy of medicine has positive impact on Doctors' Satisfaction.

H₂: Brand image of medicine has positive impact on Doctors' Satisfaction.

H₃: Safety information of medicine has positive impact on Doctors' Satisfaction.

H₄: Company reputation positive impact on Doctors' Satisfaction.

H₅: New medicine has positive impact on Doctors' Satisfaction.

H₆: Price signal quality has positive impact on Doctors' Satisfaction.

H₇: Competitive pricing has positive impact on Doctors' Satisfaction.

H₈: Availability of medicines has positive impact on Doctors' Satisfaction.

H₉: Location of Pharmacy has positive on Doctors' Satisfaction.

H₁₀: Facilities of Model Pharmacy have positive impact on Doctors' Satisfaction.

H₁₁: Selling Skill of Medical Representative has positive impact Doctors' Satisfaction.

H₁₂: Continuous Medical Education (CME) program has positive impact Doctors' Satisfaction.

H₁₃: Awareness Campaign to prevent cardiac disease has positive impact Doctors' Satisfaction.

H₁₄: Promotional Policies have positive impact on Doctors' Satisfaction.

Table 4.16: Summary of Regression Analysis (Doctors' Satisfaction)

R	0.663
R Square	0.440
Adjusted R Square	0.425
F-test	29.653
P value	0.000

Source: Prepared by Researcher

Predictors: F₄, F₃, F₂, F₁ and Dependent Variable: Overall Satisfaction

Table 4.17: Coefficients of Factors

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		Beta	Std. Error	Beta		
1	(Constant)	3.891	0.060		64.908	0.000
	F1	0.337	0.060	0.341	5.601	0.000
	F2	0.456	0.060	0.462	7.579	0.000
	F3	0.301	0.060	0.304	5.000	0.000
	F4	0.132	0.060	0.134	2.193	0.030

Source: Prepared by Researcher (Dependent Variable: Overall satisfaction)

4.3.9 Relationship of independent variables of MST with Doctors' Satisfaction (Dependent Variable)

The table 4.16 shows that the value of R, 0.663 represents a moderate relationship between dependent and independent variables. R^2 value is 0.44 implies 44% change in dependent variable which is Doctors' satisfaction about MST can be explained by the changes in the independent variables (Factors), F₁= Economic-Medicinal benefit, F₂= Medicinal-Communication Relationship Benefit, F₃= Communication Benefit, F₄= Medicinal Benefit. The summary of Coefficients of the factors and Research Hypothesis for Doctors' Satisfaction to prescribe cardiac medicines are given in the table 4.17 and 4.18 respectively.

Table 4.18: Results of Research Hypotheses for Doctors' Satisfaction about MST

S1	Research Hypotheses	P values	Results
H₁	Efficacy of Cardiac Medicine has positive impact on Doctors' Satisfaction	0.030	Accepted
H₂	Brand Image of cardiac medicine has positive impact on Doctors' Satisfaction	0.000	Accepted
H₃	Safety Information of cardiac medicine has significant impact on Doctors' Satisfaction	0.030	Accepted
H₄	Company Reputation has significant impact on Doctors' Satisfaction	0.000	Accepted
H₅	New Cardiac Medicine has positive impact on Doctors' Satisfaction	0.000	Accepted
H₆	Price signal Quality of cardiac Medicine has positive impact on Doctors' Satisfaction	0.000	Accepted
H₇	Competitors' Pricing has significant impact on Doctors' Satisfaction	0.000	Accepted
H₈	Availability of Cardiac Medicine has positive impact on Doctors' Satisfaction	0.000	Accepted
H₉	Location of Pharmacy place has significant impact on Doctors' Satisfaction	0.000	Accepted
H₁₀	Facilities of Model Pharmacy has significant impact on Doctors' Satisfaction	0.000	Accepted
H₁₁	Selling Skill of Medical Representatives has significant impact on Doctors' Satisfaction	0.000	Accepted
H₁₂	Continuous Medical Education(CME) program for doctors have significant impact on Doctors' Satisfaction	0.000	Accepted
H₁₃	Awareness Campaign to prevent cardiac disease has positive impact on Doctors' Satisfaction	0.000	Accepted
H₁₄	Promotional Policies (incentives) has significant impact on Doctors' Satisfaction	0.000	Accepted

Source: Prepared by Researcher

4.4 Impact of Marketing Strategies and Techniques on Marketing Professionals' Satisfaction about sales

Impact of Marketing Strategies and Techniques on Marketing Professionals' Satisfaction about Sales was carried out for the study. A total of 180 marketing professionals of different Pharmaceutical companies were made to participate to answer the satisfaction statement questionnaires of the research. The table 4.19 shows the frequency distribution of the Marketing Professionals evaluation about the attributes of MST.

4.4.1 Descriptive analysis (Marketing Professionals' Satisfaction):

It is found that 90% of the marketing professionals agreed that the efficacy of cardiac medicine is an important attribute for the doctors to prescribe the medicines, 4% of the respondents disagreed about the statement (Mean score=4.53). About 72% of the Marketing Managers and Officers agreed that companies supplied enough safety information about the cardiac medicine; 24% were undecided or neutral. (Mean score=4.02). Mean Scores of Marketing Professionals' Satisfaction about Marketing Strategies and Techniques (MST) about Sales Performance are given in the table 4.19 and figure 4.5 respectively.

Managers expressed their positive response in the statement that Company Reputations really influence doctors to prescribe and sales of cardiac medicine is 76% (Mean score=4.06). While 41% Managers replied that newer cardiac medicine are more preferable than existing (older) medicines (Mean score=3.36). Only 18% marketing people disagreed and 41% neither disagree nor disagrees about the statement.

To assess the attributes of Pricing Strategy, Marketing Professionals responded the statements according their perception. Regarding the Pricing Strategy, 52% of Managers agreed that price of cardiac medicines is reflected in quality and 28% were neutral about the statement.

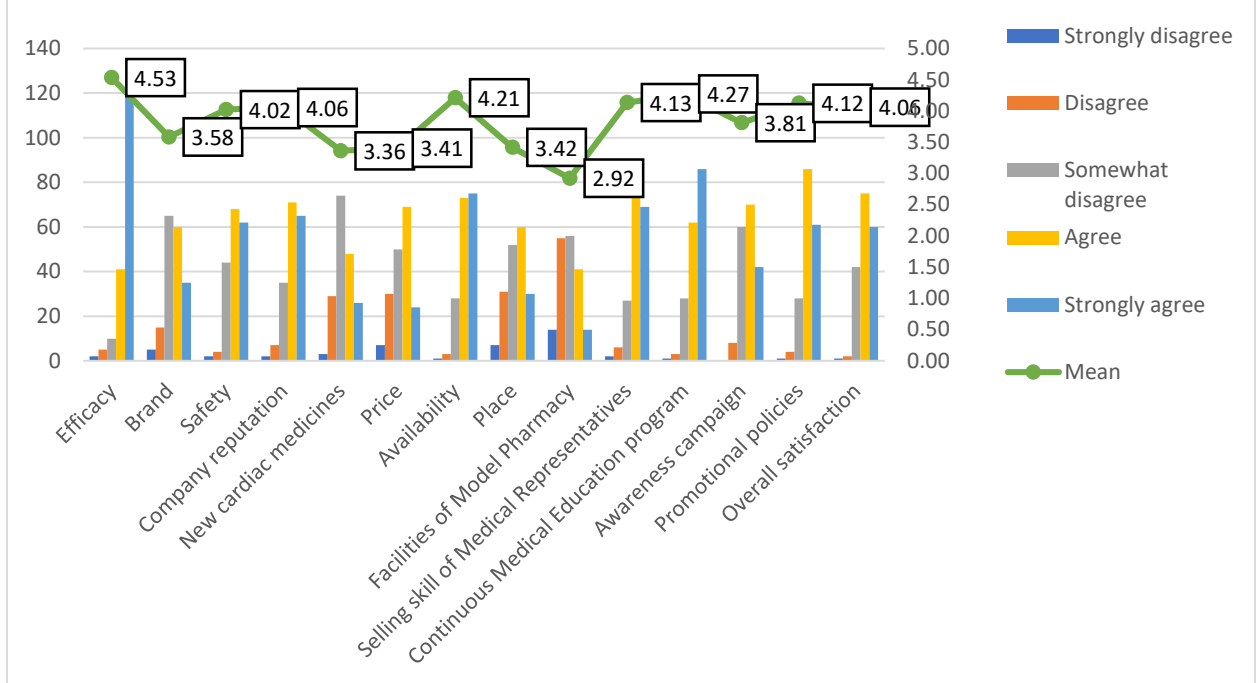
Table 4.19: Mean Scores of Marketing Professionals' Satisfaction about Marketing Strategies and Techniques on Sales Performance

Variables of MST	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD
Efficacy	2	5	10	41	122	4.53	0.81
	(1.11)	(2.78)	(5.56)	(22.78)	(67.78)		
Brand Image	5	15	65	60	35	3.58	0.99
	(2.78)	(8.33)	(36.11)	(33.33)	(19.44)		
Safety Information	2	4	44	68	62	4.02	0.88
	(1.11)	(2.22)	(24.44)	(37.78)	(34.44)		
Company Reputation	2	7	35	71	65	4.06	0.90
	(1.11)	(3.89)	(19.44)	(39.44)	(36.11)		
New cardiac Medicines	3	29	74	48	26	3.36	0.97
	(1.67)	(16.11)	(41.11)	(26.67)	(14.44)		
Price-Quality	7	30	50	69	24	3.41	1.04
	(3.89)	(16.67)	(27.78)	(38.33)	(13.33)		
Availability	1	3	28	73	75	4.21	0.80
	(0.56)	(1.67)	(15.56)	(40.56)	(41.67)		
Location of Pharmacy	7	31	52	60	30	3.42	1.08
	(3.89)	(17.22)	(28.89)	(33.33)	(16.67)		
Facilities of Model Pharmacy	14	55	56	41	14	2.92	1.08
	(7.78)	(30.56)	(31.11)	(22.78)	(7.78)		
Selling Skill of Medical Representatives	2	6	27	76	69	4.13	0.87
	(1.11)	(3.33)	(15.00)	(42.22)	(38.33)		
Continuous Medical Education program	1	3	28	62	86	4.27	0.82
	(.56)	(1.67)	(15.56)	(34.44)	(47.78)		
Awareness Campaign	0	8	60	70	42	3.81	0.84
	(.00)	(4.44)	(33.33)	(38.89)	(23.33)		
Promotional Policies	1	4	28	86	61	4.12	0.79
	(.56)	(2.22)	(15.56)	(47.78)	(33.89)		
Overall satisfaction	1	2	42	75	60	4.06	0.81
	(.56)	(1.11)	(23.33)	(41.67)	(33.33)		

Source: Prepared by Researcher

statement and 20% disagreed (Mean score=3.41). When they were asked about the impact place or distribution networks strategy has on customer's satisfaction and sales, a total number of 82% respondents replied in favor of the statement that availability of cardiac medicine in retail pharmacy provide better satisfaction and sale. Only 2% of them disagreed (Mean score=4.21) and 16% of respondents were found to be neutral.

Figure 4.5 :Satisfaction level of Marketing Professional about Sales



Managers are highly concerned about the Availability of medicine at retail pharmacies and hospital pharmacies as cardiac medicine is life-saving and required daily. About 50% of respondents replied that the location of pharmacy affects sales; 21% disagreed and 29% were neutral (Mean score=3.42). When asked about whether the Facilities of Model Pharmacy affect sales, 31% of Marketing Professionals agreed on the statement and 38% disagreed while 31% remain neutral (Mean score=2.92).

Impact of Promotional strategies was observed from the survey among different elements of Promotional Mixed Strategies. Promotion has the highest level of influence on customer’s satisfaction that influence doctors to prescribe and sale cardiac medicine. Amongst different attributes of Promotion Strategies, knowledge and Selling Skill of Medical Representatives were found to be the most effective tool to influence doctors to prescribe cardiac medicines. Managers and officers (81%) agreed to this statement, only 4% disagreed (Mean score=4.13). Another most important attribute of Promotion Strategy is Continuous Medical Education through seminar and conference for the doctors. 82% of the respondents agreed that CME influences doctors to prescribe cardiac medicine and has a significant impact on sales (Mean score=4.27). The respondents agreed that Awareness

Campaign for the cardiac patients to prevent cardiac disease is crucial for publicity and goodwill is 62% and 33% of them were found to be neutral (Mean score=3.81). Almost 82% of Managers acknowledge that Promotional incentives impact doctors' satisfaction to prescribe; 11% were neutral and 7 % disagreed to this statement (Mean score=4.12). Mean score of Overall satisfaction of Marketing Professionals about sales is 4.06 which indicates high satisfaction.

4.4.2. Sample Adequacy (Marketing Professionals' Satisfaction)

Table 4.20 KMO value is 0.746 which is more than 0.60 and significant value of Bartlett's test of sphericity is good enough. All these indicate the study can carry on Factor analysis.

Table 4.20 KMO and Bartlett's Test (Marketing Professionals' Satisfaction)

KMO and Bartlett's Test	
Kaiser-Meyer-Olkin Measure of Sampling	0.746
Approximate chi-Square	414.357
df	78
Sig	0.000

Source: Prepared by Researcher

4.4.3: Correlation Matrix (Marketing Professionals' Satisfaction about Sales)

Correlation Matrix of Marketing Professionals shows interdependence of independent variables of MST and dependent variable Marketing Professionals' satisfaction in the table 4.21.

Table 4.21 Correlation Matrix (Marketing Professionals)

	Efficacy	Brand	Safety	Company reputation	New cardiac medicines	Price	Availability	Place	Facilities of Model Pharmacy	SMR	Continuous Medical Education program	Awareness campaign	Promotional policies
Efficacy	1	.195 ^{**}	.286 ^{**}	.309 ^{**}	-.040	.113	.253 ^{**}	.000	-.099	.104	.240 ^{**}	.172 [*]	.107
Brand	.195 ^{**}	1	.319 ^{**}	.259 ^{**}	.134	.046	.217 ^{**}	.312 ^{**}	.207 ^{**}	.203 ^{**}	.299 ^{**}	.227 ^{**}	.059
Safety	.286 ^{**}	.319 ^{**}	1	.118	.192 ^{**}	.081	.307 ^{**}	.242 ^{**}	.131	.113	.275 ^{**}	.223 ^{**}	.100
Company reputation	.309 ^{**}	.259 ^{**}	.118	1	.041	.190 [*]	.376 ^{**}	.103	-.065	.248 ^{**}	.265 ^{**}	.190 [*]	.053
New cardiac medicines	-.040	.134	.192 ^{**}	.041	1	.230 ^{**}	.159 [*]	.245 ^{**}	.219 ^{**}	.154 [*]	.114	.247 ^{**}	.117
Price	.113	.046	.081	.190 [*]	.230 ^{**}	1	.117	.148 [*]	.318 ^{**}	.231 ^{**}	.151 [*]	.183 [*]	-.006
Availability	.253 ^{**}	.217 ^{**}	.307 ^{**}	.376 ^{**}	.159 [*]	.117	1	.188 [*]	-.084	.375 ^{**}	.317 ^{**}	.191 [*]	.214 ^{**}
Place	.000	.312 ^{**}	.242 ^{**}	.103	.245 ^{**}	.148 [*]	.188 [*]	1	.380 ^{**}	.102	.148 [*]	.345 ^{**}	.025
Facilities of Model Pharmacy	-.099	.207 ^{**}	.131	-.065	.219 ^{**}	.318 ^{**}	-.084	.380 ^{**}	1	.041	.074	.224 ^{**}	-.055
Selling skill of Medical Representatives	.104	.203 ^{**}	.113	.248 ^{**}	.154 [*]	.231 ^{**}	.375 ^{**}	.102	.041	1	.472 ^{**}	.317 ^{**}	.188 [*]
Continuous Medical Education program	.240 ^{**}	.299 ^{**}	.275 ^{**}	.265 ^{**}	.114	.151 [*]	.317 ^{**}	.148 [*]	.074	.472 ^{**}	1	.419 ^{**}	.198 ^{**}
Awareness campaign	.172 [*]	.227 ^{**}	.223 ^{**}	.190 [*]	.247 ^{**}	.183 [*]	.191 [*]	.345 ^{**}	.224 ^{**}	.317 ^{**}	.419 ^{**}	1	.136
Promotional policies	.107	.059	.100	.053	.117	-.006	.214 ^{**}	.025	-.055	.188 [*]	.198 ^{**}	.136	1
**. Correlation is significant at the 0.01 level (2-tailed).													
*. Correlation is significant at the 0.05 level (2-tailed).													

4.4.4 Communalities (Marketing Professionals' satisfaction about sales)

Communalities define the estimation of shared variance of the overall variables. The variable is explained by the extracted factors. For each variable of MST, the value of the communality is expected to be 0.40 or more. (Table 4.22)

Table 4.22: Communalities

Variables	Initial	Extraction
Efficacy	1.000	.543
Brand	1.000	.521
Safety	1.000	.556
Company reputation	1.000	.588
New cardiac medicines	1.000	.411
Price	1.000	.691
Availability	1.000	.496
Place	1.000	.569
Facilities of Model Pharmacy	1.000	.659
Selling skill of Medical Representatives	1.000	.620
Continuous Medical Education program	1.000	.520
Awareness campaign	1.000	.450
Promotional policies	1.000	.591

Source: Prepared by Researcher (Extraction Method: Principal Component Analysis.)

4.4.5 Factor Extraction (Marketing Professionals' Satisfaction about Sales)

After running the Factor Analysis, the table 4.23 has been shown below where total four factors are extracted. About 55.488% variance is explained with the help of extracted factors in the dataset.

Table 4.23. Factor Extraction (Marketing Professionals' Satisfaction)**Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
	1	3.282	25.243	25.243	3.282	25.243	25.243	2.065	15.886
2	1.695	13.040	38.283	1.695	13.040	38.283	1.928	14.827	30.713
3	1.161	8.935	47.218	1.161	8.935	47.218	1.897	14.590	45.303
4	1.075	8.271	55.488	1.075	8.271	55.488	1.324	10.185	55.488

Source: Prepared by Researcher (Extraction Method: Principal Component Analysis.)

4.4.6 Rotated Factor Matrix (Marketing Professionals' Satisfaction about Sales)

The Marketing Professionals develop Marketing Strategies to persuade doctors to prescribe cardiac medicines. The attributes or variables of Marketing Strategies do not hold the same impact on doctors' preferences. The strategies that the managers find appropriate do not necessarily serve the purpose of the doctors' need. It has been found in this research that certain variables of Marketing Strategies loaded in the significant factors are well-accepted by the doctors but not all. For example, factor-1 is accepted by both doctors and managers alike whereas factor-3 was found to be highly significant for doctors' satisfaction but only moderately significant for the managers.

Factor 1 consists of items or variables LP8, FMP9, BI2, SI3, AC12, and NM5. The variables are Location of Pharmacy, Facilities of Model Pharmacy, Brand Image, Safety Information, Awareness Campaign for the patients and New Medicines. It has been shown in the table 4.24. In the pharmaceutical market, there is intense competition to capture market shares. The Pharmaceutical companies try their level best to invent new medicines with better effectiveness through research. Pharmaceutical companies of Bangladesh try to import new medicine molecules for increasing sales. New medicine (NM5) has positive loading on this factor. These variables are related to Convenience and Medicinal Strategies. Opinion and perception of Marketing Professionals about the satisfaction statements of these variables were evaluated as important attributes of Marketing Strategies and Techniques that impact doctors' preference to prescribe a medicine of the respective

company and sales. Hence Factor 1 can be labeled as Convenience-Medicinal benefit because most of product and place variables have been loaded on Factor 1.

Factor 2 states that variables PP13, SSMR10, CME11 and AV7 are related to Promotional Policy, Selling Skill of Medical Representatives, Continuous Medical Education for the doctors, and Availability of medicines. These are very important consideration for the doctors while prescribing the medicines. In table 4.24, Factor 2 represents variables of Satisfaction statements that are related to Communication relationship of Marketing. Thus, Factor 2 is labeled as Communication relationship benefit.

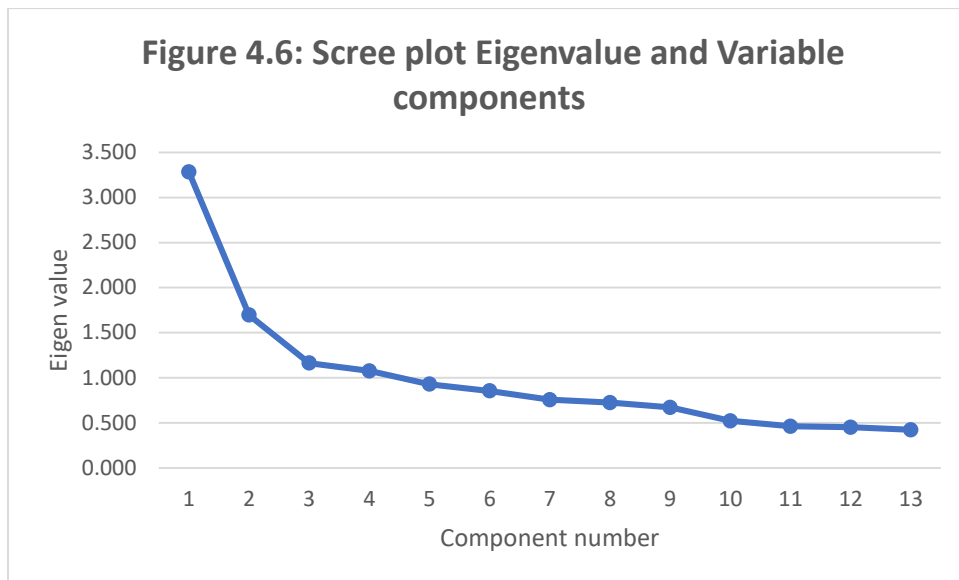
Factor 3 implies the items of Satisfaction statement questions are EF1 and CR4. These variables are Efficacy and Company Reputation related to Medicinal benefit.

Factor 4 contains variable Price - Quality relationship which is labeled as Economic benefit of Marketing Strategy. The figure 4.6 of Scree Plot Eigenvalue and Variable components of Marketing Professionals shows the four factors having Eigen values greater than one. 13 explanatory variables were reduced into 4 factors having Eigen values greater than 1.0 by the Varimax Rotation.

Each factor was composed of variables that loaded 0.4 or higher on that factor. About 56% of the total variation can be explained by the four factors which has been shown in table 4.23.

The dependent variable is Marketing Professionals' Satisfaction about sales. 5 point Likert scale was used to evaluate the satisfaction statement of MST. It is already mentioned that the objective of factor analysis is to find the appropriate variables of the specific factors included in Marketing Strategies that have significant impact on overall satisfaction of Marketing Professionals about sales

Table 4.22 shows that the communalities of the present data set are perfect enough to go for further analysis according to the table as all the variables are greater than 0.40.



The entire variables are loaded in the Rotated Component Matrix into four factors are given in the table 4.24. Additionally, few of the items were also cross loaded under more than one factor. The rotated factor loading defines the possibility of the consequential factors.

Table 4.24. Rotated Factor Matrix (Marketing Professionals' Satisfaction about Sales)

Factor Name	Component variable of statements	Factor loading on rotated component matrix			
		1	2	3	4
Factor1: Convenience-Medicinal benefit					
LP 8	Location of Pharmacy	0.74			
FMP 9	Facilities of Model Pharmacy	0.64			
BI2	Brand Image	0.58			
SI 3	Safety information	0.57			
AC 12	Awareness Campaign	0.44			
NCM 5	New Cardiac Medicines	0.43			
Factor 2:Communication relationship benefit					
PP 13	Promotional Policies		0.70		
SSMR 10	Selling Skill of MR		0.68		
CME 11	Continuous Medical Education		0.58		
A V 7	Availability		0.49		
Factor3: Medicinal benefit					
	Efficacy			0.73	
	Company Reputation			0.69	
Factor4: Economic benefit					
PQ 6	Price signal Quality of Product				0.81

Source: Prepared by Researcher

4.4.7 Test of Research Hypotheses (Marketing Professionals' Satisfaction about Sales)

To achieve the research objective for illustrating the impact of Marketing Strategies and Techniques on Marketing Professionals' Satisfaction about Sales performance of Pharmaceutical companies, the following research hypotheses were constructed.

H₁: Efficacy of medicine has positive impact on Marketing Professionals' Satisfaction about Sales.

H₂: Brand Image of medicine has positive impact on Marketing Professionals' Satisfaction about Sales.

H₃: Safety Information of medicine has positive impact on Marketing Professionals' Satisfaction about Sales.

H₄: Company Reputation has positive impact on Marketing Professionals' Satisfaction about Sales.

H₅: New Medicine has positive impact on Marketing Professionals' Satisfaction about Sales.

H₆: Price signal Quality has positive impact on Marketing Professionals' Satisfaction about Sales.

H₇: Availability of medicine has positive impact on Marketing Professionals' Satisfaction about Sales.

H₈: Location of Pharmacy has positive impact on Marketing Professionals' Satisfaction about Sales.

H₉: Facilities of Model Pharmacy have positive impact on Marketing Professionals' Satisfaction about Sales.

H₁₀: Selling Skill of Medical Representative has positive impact on Marketing Professionals' Satisfaction about Sales.

H₁₁: Continuous Medical Education (CME) program for doctors has positive impact on Marketing Professionals' Satisfaction about Sales.

H₁₂: Awareness Campaign to prevent cardiac disease and Sales has positive impact on Marketing Professionals' Satisfaction about Sales.

H₁₃: Promotional Policies have positive impact on Marketing Professionals' Satisfaction about Sales.

The factors of exploratory factor analysis were tested by Regression analysis. The results of the analysis were shown in the tables 4.25 and 4.26 respectively.

Table 4.25: Summary Regression Analysis (Marketing Professionals' Satisfaction)

R	0.392
R Square	0.154
Adjusted R Square	0.135
F Statistics	7.956
P value	0.000

Source: Prepared by Researcher (Predictors: F4, F3, F2, F1

Dependent Variable: Overall Satisfaction)

Table: 4.26. Coefficients of Factors (Marketing Professionals)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	Beta	Std. Error	Beta		
(Constant)	4.061	0.056		72.034	0.000
F1	0.190	0.057	0.233	3.356	0.001
F2	0.128	0.057	0.157	2.259	0.025
F3	0.149	0.057	0.183	2.629	0.009
F4	0.165	0.057	0.203	2.924	0.004

Source: Prepared by Researcher (Dependent Variable: Overall satisfaction)

4.4.8 Relationship of Independent variables of MST with dependent variable Marketing Professionals' Satisfaction about sales:

Relationship of Independent variables of MST with dependent variable Marketing Professionals' Satisfaction about Sales has been shown in the table 4.27

Table: 4.27: Results of Hypothesis testing of Marketing Professionals' Satisfaction about Sales

Sl	Research Hypotheses	p value less than 0.05	Result
H ₁	Efficacy of cardiac medicine has positive impact on Marketing Professionals' Satisfaction about Sales.	0.009	Accepted
H ₂	Brand Image of cardiac medicine has positive impact on Marketing Professionals' Satisfaction about sales.	0.001	Accepted
H ₃	Safety Information of cardiac medicine has significant impact on Marketing Professionals' Satisfaction about Sales.	0.001	Accepted
H ₄	Company Reputation has significant impact on Marketing Professionals' Satisfaction about Sales.	0.009	Accepted
H ₅	New Cardiac Medicine has positive impact Marketing Professionals' Satisfaction about Sales.	0001	Accepted
H ₆	Price signal Quality of cardiac medicine has positive impact on Marketing Professionals' Satisfaction about Sales.	0.004	Accepted
H ₇	Availability of cardiac medicine has positive impact on Marketing Professionals' Satisfaction about Sales.	0.025	Accepted
H ₈	Location of Pharmacy has significant impact on Marketing Professionals' Satisfaction about Sales.	0.001	Accepted
H ₉	Facilities of Model Pharmacy have significant impact on Marketing Professionals' Satisfaction about Sales.	0.001	Accepted
H ₁₀	Selling Skill of Medical Representatives has significant impact on Marketing Professionals' Satisfaction about Sales.	0.025	Accepted
H ₁₁	Continuous Medical Education (CME) program for doctors has significant impact on Marketing Professionals' Satisfaction about Sales.	0.025	Accepted
H ₁₂	Awareness Campaign to prevent cardiac disease has positive impact on Marketing Professionals' Satisfaction about Sales.	0.001	Accepted
H ₁₃	Promotional Policies(incentives)have significant impact on Marketing Professionals' Satisfaction about Sales..	0.025	Accepted

Source: Prepared by Researcher

4.4.9. Assessment of practice of MST in different Pharmaceutical companies according to Marketing Professionals

The approach of Pharmaceutical companies setting the marketing strategies are not same. In this research, it has been revealed that 42% companies follow a top-down approach where top company executives design the marketing strategies and communicate it directly to the sales team. The marketing professionals out of 186 surveyed, expressed their opinion that skilled marketing and sales managers formulate strategies for everyone to follow a bottom-up approach is 16%. Both top-down and bottom up approach are followed by 42% companies to ensure a both way communication for a better performance. The research has

found that the marketing strategies of the pharmaceutical companies are based on to becoming the market share leaders (40%) and to penetrate the market (16.5%) and to achieve product branding (43.5%).

The question was asked to different marketing professionals about the tactics or techniques that are helpful to implement the strategies. About 40.6% of respondents responded to prepare efficient sales force; 43.4% replied to provide CME for doctors through seminar and conference and 14.2% of respondents gave opinion about cardiac disease awareness campaigns for the cardiac patient to prevent cardiac disease are the main tactics to convince doctors to prescribe their medicines.

The main objectives of the marketing professionals of pharmaceutical companies that were discovered are that 30.1% of the respondents want to be a top-five national companies in cardiac market, 39% want to be a cardiac market leader in Bangladesh whereas 9.6% responded to adjust with competitors' marketing mix activities.

The mean scores about the MST of 180 Marketing Professionals of the 18 companies are given below where it has been revealed that there is scope to further improve the 4Ps strategies to attract customers (Doctors & Patients) for sustainable profitability of the companies. Mean scores of Marketing Professionals' about 4Ps of MST are quality, affordability, availability and communication relationship are 4.2, 3.8, 3.4 and 3.6 respectively which is shown in the table 4.28.

Table 4.28: Marketing Professionals' Satisfaction about 4Ps

4Ps of Marketing strategies	Mean scores of Marketing Professionals' Satisfaction
Quality	4.2
Affordability	3.8
Availability	3.4
Communication	3.6

Source: Prepared by Researcher

4.5. Impact of Marketing Strategies and Techniques on Patients' Satisfaction

Cardiac patients are the end users of cardiac medicines and pay for it. They go to cardiologists for the treatment of cardiac diseases. Doctors prescribe the cardiac medicines

for curing or managing the cardiac problems. The table 4.29 and figure 4.7 of descriptive Analysis show the Patients' Satisfaction about MST.

4.5.1 Descriptive Analysis of Patients' Satisfaction about MST

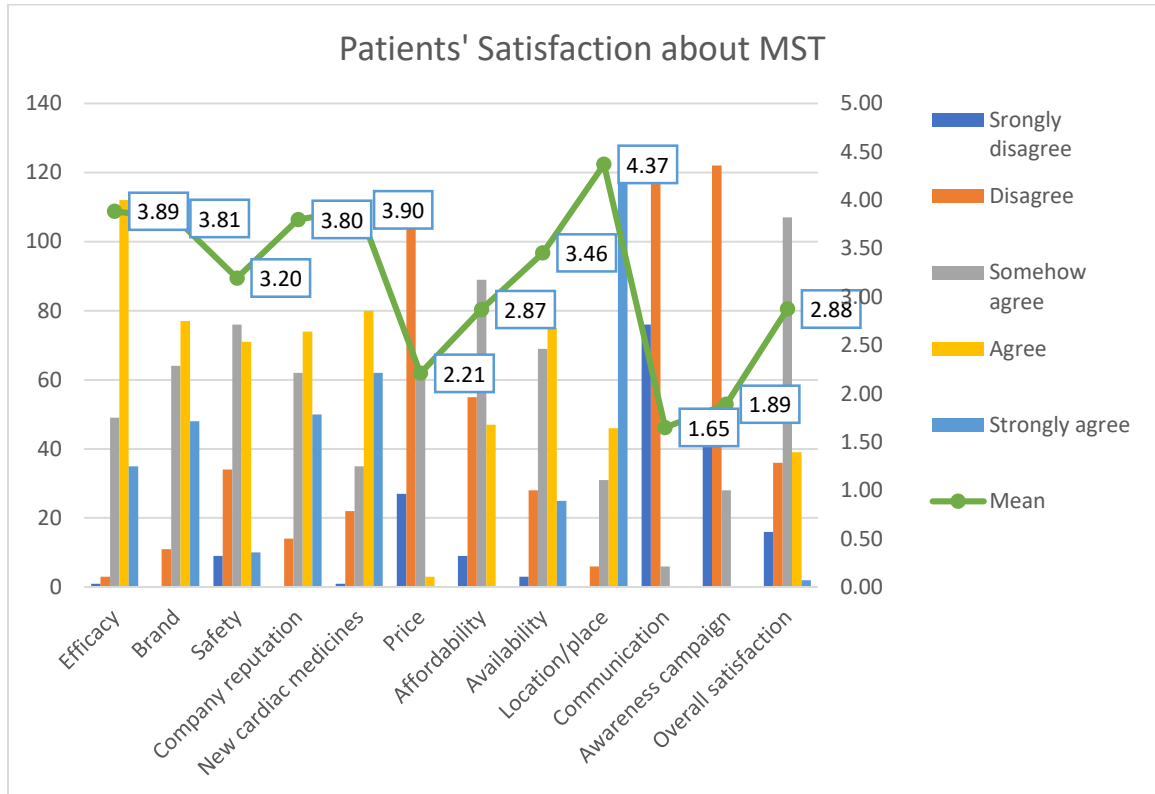
Efficacy and Quality of the medicine helps to manage the cardiac problem. Cardiac patients are the most valuable customers for the doctors and Pharmaceutical companies. 200 cardiac patients were requested to express their opinion about the attributes or 11 elements of Marketing Strategies and Techniques. The table 4.29 and figure 4.7 show that 73% agreed that efficacy and quality is well accepted (Mean=3.89). Around 63% agreed that Brand name of cardiac medicine attract patients and doctors (Mean=3.81).

Table: 4.29 Descriptive Analysis: Mean Scores of Patients' Satisfaction about MST

Variables of MST	Strongly disagree	Disagree	Somehow agree	Agree	Strongly agree	Mean	SD
Efficacy	1	3	49	112	35	3.89	0.72
	(.50)	(1.50)	(24.50)	(56.00)	(17.50)		
Brand	0	11	64	77	48	3.81	0.86
	(.00)	(5.50)	(32.00)	(38.5)	(24.00)		
Safety	9	34	76	71	10	3.20	0.93
	(4.50)	(17.00)	(38.00)	(35.50)	(5.00)		
Company reputation	0	14	62	74	50	3.80	0.90
	(.00)	(7.00)	(31.00)	(37.0)	(25.00)		
New cardiac medicines	1	22	35	80	62	3.90	0.98
	(.50)	(11.00)	(17.50)	(40.00)	(31.00)		
Price	27	107	63	3	0	2.21	0.68
	(13.50)	(53.50)	(31.50)	(1.50)	(.00)		
Affordability	9	55	89	47	0	2.87	0.82
	(4.50)	(27.50)	(44.50)	(23.5)	(.00)		
Availability	3	28	69	75	25	3.46	0.93
	(1.50)	(14.00)	(34.50)	(37.5)	(12.50)		
Location/place	0	6	31	46	117	4.37	0.85
	(.00)	(3.00)	(15.50)	(23.0)	(58.50)		
Communication	76	118	6	0	0	1.65	0.54
	(38.00)	(59.00)	(3.00)	(.00)	(.00)		
Awareness campaign	50	122	28	0	0	1.89	0.62
	(25.00)	(61.00)	(14.00)	(.00)	(.00)		
Overall satisfaction	16	36	107	39	2	2.88	0.85
	(8.00)	(18.00)	(53.50)	(19.5)	(1.00)		

Source: Prepared by Researcher

Figure 4.7 Patients' Satisfaction about MST



About 40% agreed that Pharmaceutical Companies provide enough safety information about the medicine (Mean=3.20). Almost 62% respondent replied affirmative in favor of Company Reputation (Mean=3.80). Around 71% agreed that newer drugs attract more than older ones (Mean=3.90). Cardiac patients disagreed that price is reflected in quality of cardiac medicine was 67% (Mean=2.21). Only 32% patients did not agree that the company considers the affordable price of the cardiac the patients (Mean=2.87). Respondents found neutral about competitive price of cardiac medicines were 45.%. While 51% cardiac patients agreed and 15.2% of them disagreed about the statement availability of medicines in retail pharmacy is satisfactory (Mean=3.46). About 33.8% respondent neither agreed nor disagreed in this regard.

When the cardiac patients were asked about the place or distribution network strategies, 81% replied in favor of location being important for retail pharmacy in Dhaka City (Mean=4.37). Promotional strategy is a very effective tool to attract customers to use the product of the producers. For pharmaceutical products, doctors and retailers are direct customers who get the benefit of promotional incentives but for healthcare patients, the ultimate buyers who pay for the medicines, are not influenced by the tools. They were invited to express their opinion about the statement that companies communicate to know the benefits of the medicines for promotion. Almost 97% disagreed that MR of the companies communicate with them (Mean=1.65). The cardiac patients were asked about the Awareness Campaign of the Pharmaceutical companies to prevent the cardiac disease is noticed for the patients. Around 74.1% disagreed that the Pharmaceutical companies do not offer any awareness campaign for the cardiac patients. Only 6.6% of the respondents agreed ;19.2% somewhat agreed (Mean=1.89). Overall satisfaction of Patients about MST is 2.88.

4.5.2 Sample Adequacy (Patients' Satisfaction to consume)

Table 4.30 shows that the sample is adequate for Factor Analysis as KMO value is more than 0.60 and significant value of Bartlett's test of Sphericity is good enough. All these indicate the study can carry on Factor analysis.

Table 4.30: KMO and Bartlett's Test

KMO and Bartlett's Test	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	= 0.604
Approximate chi-Square	= 246.678
Bartlett's Test of Sphericity	
df	= 55
Sig	= 0.000

Source: Prepared by Researcher

4.5.3: Correlation Matrix (Patients' Satisfaction about MST)

The important issues are taken as basic factors of the research like Medicinal benefit, Economic benefit, Convenience benefit and Communication benefit.

Relative important factors of Marketing Strategies and Techniques for Patients' satisfaction were identified by order of entry into Factor analysis.

The objective of the study was to evaluate the impact of Marketing Strategies and Techniques of Pharmaceutical companies on cardiac patients' satisfaction on the relative importance of variables. The figure 4.8 of Scree plot of Eigen value and Variables Components (Patients). The four factors explained 57.246% of the total variance in the table 4.33.

The dependent variable is Patients' satisfaction and independent variables of MST which are shown in the tables 4.31 and 4.32 respectively as Correlation Matrix and Communalities.

Table 4.31: Correlation Matrix (Patients' satisfaction)

	Efficacy	Brand	Safety	Company reputation	New cardiac medicines	Price	Affordability	Availability	Location pharmacy	Communication	Awareness campaign
Efficacy	1.000	0.102	.266**	0.136	.198**	0.060	.196**	.296**	0.127	-0.027	-0.006
Brand	0.102	1.000	0.115	.417**	0.019	0.059	0.022	-0.029	.232**	-0.090	-0.039
Safety	.266**	0.115	1.000	0.047	-0.121	.179*	.262**	.232**	0.073	0.007	.195**
Company reputation	0.136	.417**	0.047	1.000	0.137	0.118	-.165*	-0.017	.235**	-0.136	-0.122
New cardiac medicines	.198**	0.019	-0.121	0.137	1.000	-	-0.060	.198**	.194**	0.048	-0.035
Price	0.060	0.059	.179*	0.118	-0.021	1.000	.209**	.196**	-0.022	.187**	0.138
Affordability	.196**	0.022	.262**	-.165*	-0.060	.209**	1.000	.319**	0.033	0.067	0.091
Availability	.296**	-0.029	.232**	-0.017	.198**	.196**	.319**	1.000	.236**	-0.042	0.026
Location/place	0.127	.232**	0.073	.235**	.194**	-0.022	0.033	.236**	1.000	-	-0.056
Communication	-0.027	-0.090	0.007	-0.136	0.048	.187**	0.067	-0.042	-.166*	1.000	.262**
Awareness campaign	-0.006	-0.039	.195**	-0.122	-0.035	0.138	0.091	0.026	-0.056	.262**	1.000

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

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

Source: Prepared by Researcher

4.5.4 Communalities (Patients' Satisfaction to consume)

Estimation of shared variance of the overall variables are explained by the extracted factors. For each variable of MST, the value of the communality is expected to be 0.40 or more. (Table4.32)

4.5.4 Communalities (Patients' Satisfaction to consume)		
Table 4.32: Communalities (Patients)		
Variables	Initial	Extraction
Efficacy	1.000	0.430
Brand	1.000	0.643
Safety	1.000	0.571
Company reputation	1.000	0.703
New cardiac medicines	1.000	0.778
Price	1.000	0.439
Affordability	1.000	0.548
Availability	1.000	0.638
Location/place	1.000	0.427
Communication	1.000	0.667
Awareness campaign	1.000	0.454
Extraction Method: Principal Component Analysis.		

Source: Prepared by Researcher

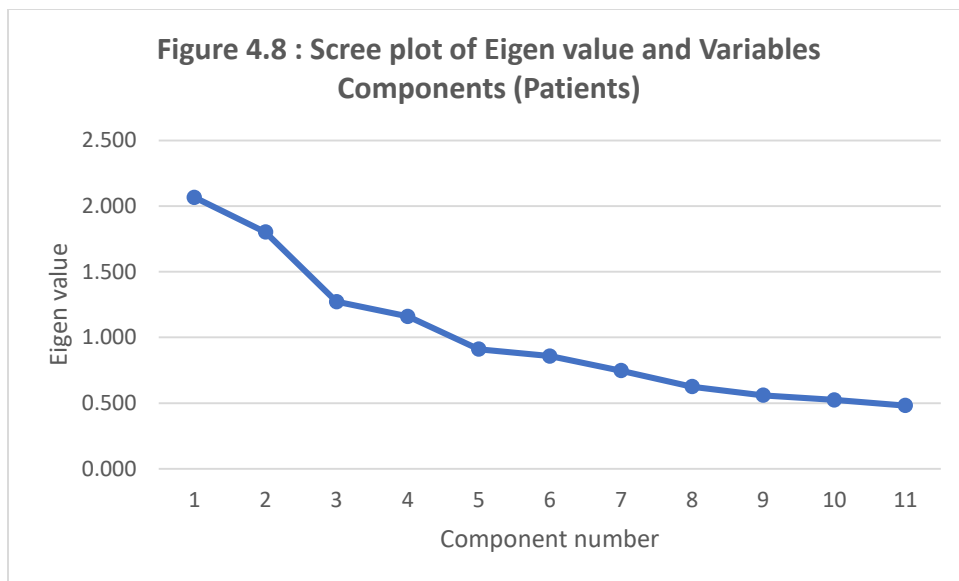
4.5.5 Factor Extraction (Patients' Satisfaction)

From table 4.33 and figure 4.8 it is found that first and second components have Eigen values greater than 1 which are 2.066 and 1.801 respectively. These two components explained only 32.001% variation. Third and fourth components with Eigen values are 1.271 and 1.159 respectively explained variation to 57.246% along with first and second components.

Table 4.33: Extracted Communalities by Principal Component Analysis(Patients)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.066	18.781	18.781	2.066	18.781	18.781	1.881	17.097	17.097
2	1.801	16.372	35.153	1.801	16.372	35.153	1.649	14.994	32.091
3	1.271	11.556	46.709	1.271	11.556	46.709	1.458	13.251	45.342
4	1.159	10.537	57.246	1.159	10.537	57.246	1.309	11.903	57.246

Source: Prepared by Researcher (Extraction Method: Principal Component Analysis.)



4.5.6 Rotated Component Matrix (Patients' Satisfaction)

The Rotated Factor Matrix of Patients' Satisfaction is shown in the table 4.34. The factor consists of items AV8, CP7, SI3 and EF1 and is labeled as Economic Medicinal benefit. Loading items were ranged from 0.561-0.714. Factor 2 states CR4, BI2, LP9 which is

labeled as Medicinal convenience benefit and loading were ranged from 0.408 to 0.819. Factor 3 represents PP10, AC11, PQ6 and is named as Medicinal-Communication relationship benefit (items loading from 0.556-0.774). Factor 4 is labeled as Medicinal benefit which contains item loading is 0.879 and item NM5.

Table 4.34: Rotated Factor Matrix (Patients' Satisfaction)

Factor Name	Rotated Component Matrix Patients' Satisfaction				
		Component			
F1:Economic-Medicinal Benefit		1	2	3	4
Av 8	Availability	0.714			
CP 7	Competitive Price	0.694			
SI 3	Safety	0.626			
EF 1	Efficacy	0.561			
F2: Medicinal-Convenience Benefit					
CR 4	Company Reputation		0.819		
BI 2	Brand Image		0.796		
LP 9	Location of Place		0.408		
F3:Medicinal-Communication Benefit					
PP 10	Promotional Policy			0.774	
AC 11	Awareness campaign			0.659	
PQ 6	Price Quality			0.556	
F4: Medicinal benefit					
NM 5	New cardiac medicines				0.879

Source: Prepared by Researcher

4.5.7 Test of Research Hypotheses Patients' Satisfaction about MST

Hypothesis Testing by Regression Analysis of Factors (Patients) and Coefficients (Patients' Satisfaction) are given in the table 4.35 and 4.36 respectively.

H₁: Efficacy of medicine has positive impact on Patients' Satisfaction.

H₂: Brand Image of medicine has positive impact on Patients' Satisfaction.

H₃: Safety Information of medicine has positive impact on Patients' Satisfaction.

H₄: Company Reputation has positive impact on Patients' Satisfaction.

H₅: New medicine has positive impact on Patients' Satisfaction.

H₆: Price signal Quality has positive impact on Patients' Satisfaction.

H₇: Competitive pricing has positive impact on Patients' Satisfaction.

H₈: Availability of medicines has positive impact on Patients' Satisfaction.

H₉: Location of Pharmacy has positive impact on Patients' Satisfaction.

H₁₀: Promotional Policies of Medical Representative has positive impact on Patients' Satisfaction.

H₁₁: Awareness Campaign to prevent cardiac disease has positive impact on Patients' Satisfaction.

Table 4.35: Summary of Regression Analysis of (Patients' Satisfaction)

R	0.521
R Square	0.271
Adjusted R Square	0.256
F-test	18.150
P value	0.000

Source: Prepared by Researcher (Predictors: F₄, F₃, F₂, F₁
Dependent Variable: Overall Satisfaction)

Table 4.36: Coefficients (Patients' Satisfaction)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	Beta	Std. Error	Beta		
(Constant)	2.875	.052		55.450	.000
F1	.384	.052	.451	7.385	.000
F2	.063	.052	.074	1.210	.228
F3	.167	.052	.196	3.209	.002
F4	.131	.052	.153	2.511	.013

Source: Prepared by Researcher (Dependent Variable: Overall satisfaction)

From the table 4.35 it is seen that overall impact of 3 factors is significant ($F_{df1,df2}=18.150$ and p value =0.000). The Coefficient table 4.36 indicates that F1, F3 and F4 have significant effect on Overall Satisfaction of Patients. The variables loaded Factor1 named Economic-Medicinal benefit are Availability, Competitive price, Safety Information and Efficacy have β value 0.384 with p value 0.000. The variables Company Reputation, Brand Image, Location of Pharmacy loaded Factor 2 named as Medicinal –Convenience benefit have insignificant impact on Patients' Satisfaction where β coefficient is 0.063 and p value is 0.228. Factor3 named Medicinal- Communication benefit includes variables Promotional Policy, Awareness Campaign and Price Signal Quality have significant impact on Patients' satisfaction with β coefficient 0.167 and p value 0.002. Factor 4 labelled as Medicinal benefit includes variable New Medicine which has positive impact on Patients' Satisfaction (β value= 0.131 and p value=0.013)

4.5.8: Relationship between independent variables of MST and Patients' Satisfaction

Results of test of research hypotheses with p-values are given in the table 4.37

Table 4.37 Results of Hypotheses Testing of Patients' Satisfaction about MST

S1	Research Hypotheses	p value	Result
H ₁	Efficacy of cardiac medicine has positive impact on patients' satisfaction	0.000	Accepted
H ₂	Brand Image of cardiac medicine has no positive impact on patients' satisfaction	0.228	Rejected
H ₃	Safety Information of cardiac medicine has significant impact on patients' satisfaction	0.000	Accepted
H ₄	Company Reputation has no significant impact on patients' satisfaction	0.228	Rejected
H ₅	New Cardiac medicine has positive impact on patients' satisfaction	0.013	Accepted
H ₆	Price signal Quality of cardiac Medicine has positive impact on patients' satisfaction	0.002	Accepted
H ₇	Competitive pricing has positive impact on patients' satisfaction	0.000	Accepted
H ₈	Availability of cardiac medicine has positive impact on patients' satisfaction	0.000	Accepted
H ₉	Location of Pharmacy has no positive impact on patients' satisfaction	0.228	Rejected
H ₁₀	Promotional Policies of company MR has positive impact on patients' satisfaction	0.002	Accepted
H ₁₁	Awareness campaign to prevent cardiac disease has positive impact on patients' satisfaction	0.002	Accepted

4.6 Patients' Satisfaction about Model Pharmacy Recent Place Strategy introduced by New Drug Policy 2016

Model pharmacy is a new place strategy introduced by the new drug policy 2016 which maintains specific standards or attributes different from conventional retail pharmacies. To evaluate the impact of model on patients' satisfaction to purchase medicines instead of retail pharmacies, an empirical research was carried out in Dhaka city in 2017. The

important seven independent variables of Model Pharmacies that impact on Patients' Satisfaction (dependent variable) to purchase medicines are location, quality of medicine, modern environment, variety of stock, data base system and reasonable price of medicine.

The result of the Correlation Matrix and stepwise multiple linear regression is found to be statistically significant. Four independent variables out of seven that have found significant impact on Patients' Satisfaction to purchase medicines from Model Pharmacy are counseling by 'A' grade pharmacists, quality of medicines, data base system and reasonable price. Findings of this research motivate researcher to add an element into the Place Strategy of Model Pharmacy to evaluate the impact of the Facilities of Model Pharmacies on Stakeholders' Satisfaction and Sales.

Structured Questionnaires were created which includes 5-point Likert scale based statements having seven variables that represent the satisfaction level of patients to select Model Pharmacy instead of retail pharmacy. Research Questions were asked about how the patient's purchasing decisions are being influenced by concept of Model Pharmacy, what are the important Facility attributes of Model Pharmacies that impact on Patient's Satisfaction to buy medicines.

Reputed national and international journals, books, websites, articles and discussions with 'A' grade pharmacists of Model Pharmacies and legal bodies of Model Pharmacies were collected as secondary source of information.

4.6.1 Test of Research hypotheses (Model Pharmacy)

H₁: Location of Model Pharmacy has positive impact on patients' satisfaction.

H₂: Quality of medicine has positive impact on patients' satisfaction.

H₃: Modern environment of model pharmacy has positive impact on patients' satisfaction.

H₄: Variety of stock has positive impact on patients' satisfaction.

H₅: Database system has positive impact on patients' satisfaction.

H₆: Reasonable price has positive impact on patients' satisfaction.

H₇: Counseling by 'A' grade pharmacists have positive impact on patients' satisfaction.

The SPSS output of final result of step-wise regression is shown below.

Table 4.38: Regression Analysis of Patients' Satisfaction about Model Pharmacy

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	0.743	0.552	0.533	0.46479

Predictors: (Constant), Counseling by A grade pharmacist, Quality medicines, Data Base System, Reasonable price. Dependent Variable: Overall satisfaction

Table 4.39: ANOVA table of Regression Analysis

	Sum of Squares	df	Mean Square	F	Sig.
Regression	25.317	4	6.329	29.299	0.000
Residual	20.523	95	0.216		
Total	45.840	99			

Dependent Variable: Overall satisfaction

Predictors: (Constant), Counseling by A grade pharmacist, Quality medicines, Data Base System, Reasonable price

Table 4.40: Coefficients of Variables of Model Pharmacy

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	Beta	Std. Error	Beta		
(Constant)	1.419	0.467		3.041	0.003
Counseling by A grade pharmacist	0.182	0.049	0.379	3.697	0.000
Quality medicines	0.209	0.090	0.178	2.313	0.023
Data Base System	0.138	0.060	0.211	2.282	0.025
Reasonable price	0.178	0.084	0.171	2.113	0.037

Source: Prepared by Researcher

Dependent Variable: Overall satisfaction Predictors: Counseling by A grade pharmacist, Quality medicines, Data Base System, Reasonable price

Although overall model is significant but individual effects of all independent variables are not significant. Quality of medicine, counseling by A grade pharmacist, data base system and reasonable price have positive impact on patient’s satisfaction which p values are less than 0.05. Summary of Results of Research Hypothesis for patients’ satisfaction to purchase cardiac medicines from Model Pharmacy has been given in the table 4.41 below:

Table 4.41: Summary of Results of Research Hypothesis for Patients’ Satisfaction about Facilities of Model Pharmacy to purchase cardiac medicines has been given below:

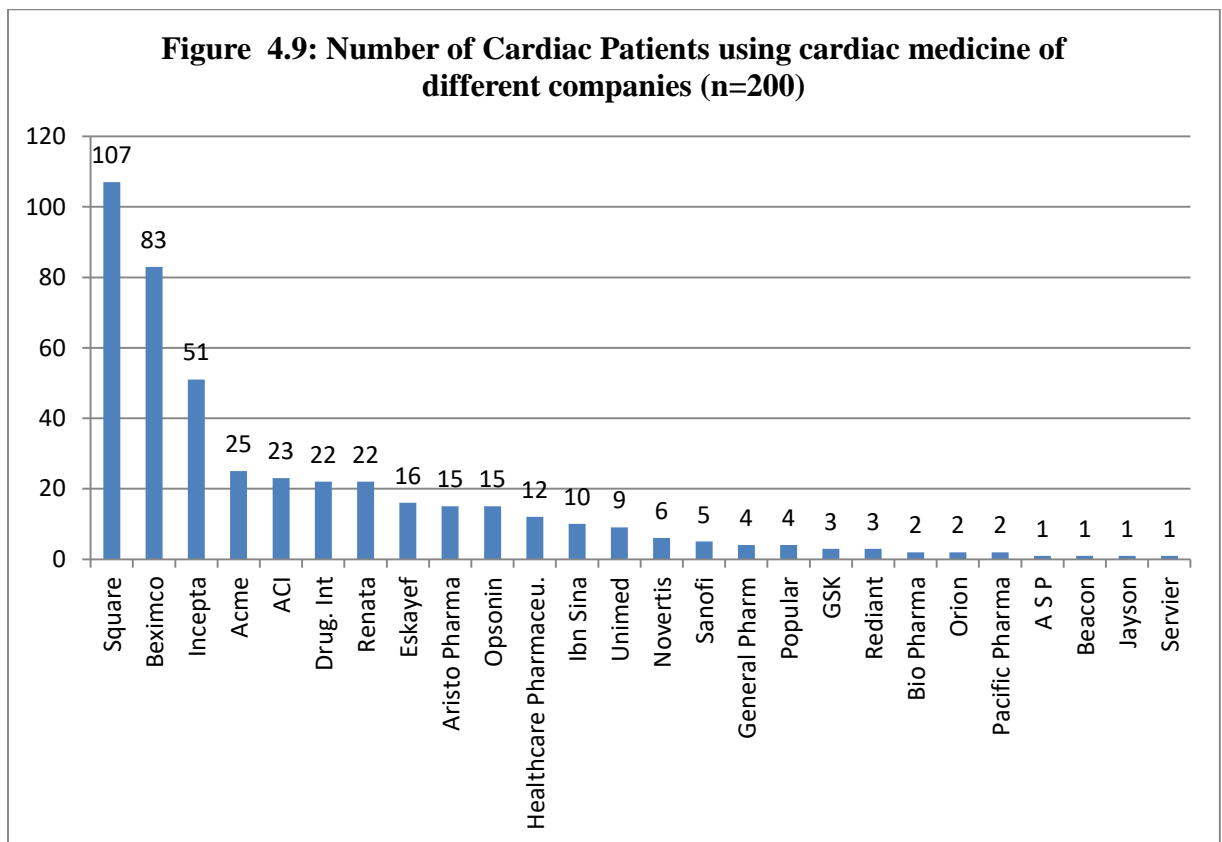
S1	Research Hypotheses	Results
H1	Location of Model Pharmacy has positive impact on Patients’ Satisfaction	Rejected
H2	Quality of medicines has positive impact on Patients’ Satisfaction	Accepted
H3	Modern environment of Model pharmacy has positive impact on Patients’ Satisfaction	Rejected
H4	Variety of stocks has significant impact on Patients’ Satisfaction	Rejected
H5	Data base system has positive impact on Patients’ Satisfaction	Accepted
H6	Reasonable price of Medicine has positive impact on Patients’ Satisfaction	Accepted
H7	Counseling by ‘A’ grade pharmacists has significant impact on Patients’ Satisfaction	Accepted

Source: Prepared by Researcher

4.7 Patients’ Satisfaction about Cardiac Medicines of Market Leader, Challengers, Followers and Niches according to survey of 200 Cardiac patients.

The study of patient’s needs, wants and rights is a very important issue. Medicine compliance and noncompliance, not filling or refilling a prescription, taking too much or too little medication, not completing treatment, self-medication are also very crucial issues that need serious attention. To remove these barriers, good compliance, “holistic” or good healthcare system including disease management initiative by healthcare and pharmaceutical companies are necessary which improve treatment guidelines, compliance improving tools, education, information, products and service. From this research, it has been found that there exists significant gap between the company offers and the patient’s need and wants. Satisfaction level of patients about the 4Ps strategies is not satisfactory.

The most important attributes of MST that impacts patients' satisfaction are efficacy, safety, affordability, communication and availability of cardiac medicines which are found need to be improved to achieve satisfactory level in Bangladesh. Pharmacists in developed countries play an important role to maintain communication with pharmaceutical companies about the price and pharmaceutical co-equivalence data that can meet the requirements of their patients' satisfaction. In our country these services are not sufficient. The figure 4.9 of number of Cardiac Patients using cardiac medicines of different companies are given below.



Leader

The highest percentage of market share belongs to the market leader. Generally, the leader holds 20% market share while the nearest competitors called challengers hold 60% market share. Remaining shares (20%) are captured by followers & niches. Marketing Strategies (4Ps) are mainly influenced by the market leader while strong contestants challenge the leader's position. The market leader tends to maintain its position by following competitive strategic objectives such as attract new users, discover new uses and encourage more usage.

Another major motive of the leader is to expand market share by product modification, marketing mix modification & market modification. To defend market share, they limit competitor possibilities to attack the main product. The leader might launch a counterattack before being attacked by challengers for example, massive sales for expansion, price cut or new product launching.

Challengers like Beximco, Incepta , ACI, ACME, have similar resources & capabilities to challenge the leader (Square) to gain market share by following tactics such as front attack leapfrog, flaunt encircle & guerilla attack.

Followers such as Aristro Pharma Drug International, Renata, Eskayef, Opsonin, Ibsina, Aristopharma, HealthCare, focus mainly on survival by following competitive strategies like cloning which focuses on cost leadership imitating identical strengths and formulation of products.

Specialists (Niches) in accordance to cardiac market companies such as Radiant, Servier, Novertis can be labeled as Niches as they focus on a specific market segment chosen on the basis of cost or innovation differentiation. They produce specific products with limited resource offering superior quality of customized cardiac medicine for specific cardiologists.

Mean scores Patients satisfaction about variables of MST of different categories of Pharmaceutical companies (July 2017-July2018) and 4Ps have been shown in the tables 4.36 and 4.37 respectively. From the present primary research, it has been found the consumption of cardiac medicines of different Pharmaceutical companies is not the same. The ranking of the Pharmaceutical companies is made by findings of surveyed patients (n=200).

Leader = Square

Challengers = Beximco, Incepta, ACME, ACI

Followers = Drug International, Renata, SK&F, Opsonin, Ibsina, Aristopharma, HealthCare

Niches= Unimed and Unihealth, Novertis, Popular, General, Radiant, Sanofi, GSK, Biopharma, Eskayef, Pacific, Jayson, Servier, ASP

The mean scores 3.85 and 3.84 of patients' satisfactions about niche and follower companies regarding the quality of product were found to be better than that of the leader and challengers which are 3.73 and 3.74 respectively. Similarly, the cardiac medicines of niche and follower companies were found more affordable than the leader and challenger companies which is shown in the table 4.47. The mean scores of patients' satisfaction about the availability of medicines of niches and followers were more appreciated than leader and challengers which are 4.16 and 3.99 respectively. The research revealed that the leader and challengers of pharmaceutical companies maintain less communicative relationship with patients than niches and followers that impact on patients' satisfaction level. Mean scores are shown in the table 4.43 which is the summary of the table 4.42.

Table: 4.42: Mean Score of Patients' Satisfaction about 4Ps of the Top Ranking Pharmaceutical companies according to 200 Patients' perception.

Rank	Company	Product	Price	Place	Promotion
Leader	Square	3.73	2.51	3.88	1.78
Challengers	Beximco	3.76	2.59	3.92	1.78
	Incepta	3.73	2.46	4.02	1.74
	ACME	3.78	2.54	3.96	1.74
	ACI	3.70	2.63	4.00	1.91
Followers	Renata	3.91	2.75	4.11	1.84
	Drug. Int	3.63	2.55	3.77	1.93
	Aristo Pharma	4.07	2.83	4.13	2.07
	Opsonin	3.99	2.63	3.90	1.87
	SKF	3.66	2.50	4.07	1.68
	Healthcare Pharmaceu.	4.02	2.71	3.75	1.54
	Ibn Sina	3.58	3.05	3.85	2.30
	Unimed	3.80	2.61	3.94	1.72
	Novertis	3.93	3.08	4.42	2.08
Niches	Sanofi	3.72	2.30	4.10	1.60
	Popular	3.80	2.63	4.25	1.88
	General Pharm	3.90	2.50	4.25	1.88
	Radiant	3.87	2.67	3.83	1.67
	GSK	3.80	2.83	3.67	2.00
	Eskayef	3.70	2.50	3.75	1.75
	Bio Pharma	3.50	3.50	4.50	2.25
	Pacific Pharma	4.20	3.00	4.75	2.00
	Orion	4.00	2.50	4.00	2.00
	Jayson	4.20	3.50	4.50	1.00
	Beacon	3.40	3.50	3.50	1.50
	Servier	4.40	3.00	5.00	2.00
	A S P	3.60	2.00	4.00	2.50

Source: Prepared by Researcher

Table 4.43 Summary: Mean Scores of Patients' Satisfaction perception regarding quality, affordability, availability and communication relationship of cardiac medicines of four categories companies according to market shares July2017-July2018

Category of Companies	Quality (Product)	Affordability (Price)	Availability (Place)	Communication (Promotion)
Leader	3.73	2.51	3.88	1.78
Challengers	3.74	2.56	3.98	1.79
Followers	3.84	2.75	3.99	1.89
Niches	3.85	2.80	4.16	1.85

Source: Prepared by Researcher

4.8 Gap Analysis between Overall Satisfactions about MST and Stakeholders

Marketing Strategies and Techniques are activities designed by the team of Marketing Professionals that can be considered as successful when the needs of the target customers are fulfilled by the strategic offers of the pharmaceutical companies. The research has been carried out to analyze the overall satisfaction level of three categories of stakeholders of the cardiac market in the pharmaceutical sector about the attributes of the Marketing Strategies and Techniques. The satisfaction of doctors, patients and managers were found to be significantly different.

The gap was analyzed by one-way ANOVA test. Null hypothesis of means regarding overall satisfaction of 3 stakeholders is rejected.

$F(d_{f1}, d_{f2}) = 100.640, p = 0.000$ (Table 4.44). The Overall Satisfaction score of Marketing Professionals (MP) is found highest (mean=4.06, SD=0.81) while it is lowest for Patients' Satisfaction (mean=2.88 and SD=0.85). The Overall Satisfaction score of doctors is moderate (mean=3.89, SD=0.99) which are given in the table 4.44 and figure 4.10.

Table 4.44: Comparison of Overall Satisfaction of Stake-holders about MST by one-way ANOVA

Overall satisfaction

	N	Mean	SD	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
					Doctors	156		
Patients	200	2.8750	0.8502	.06012	2.7564	2.9936	1.00	5.00
Marketing Professionals	180	4.0611	0.8130	.06060	3.9415	4.1807	1.00	5.00
Total	536	3.5690	1.03169	.04456	3.4815	3.6566	1.00	5.00

Source: Prepared by Researcher

Table 4.45 : F test (ANOVA)

Overall satisfaction					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	156.096	2	78.048	100.640	.000
Within Groups	413.350	533	0.776		
Total	569.446	535			

Source: Prepared by Researcher

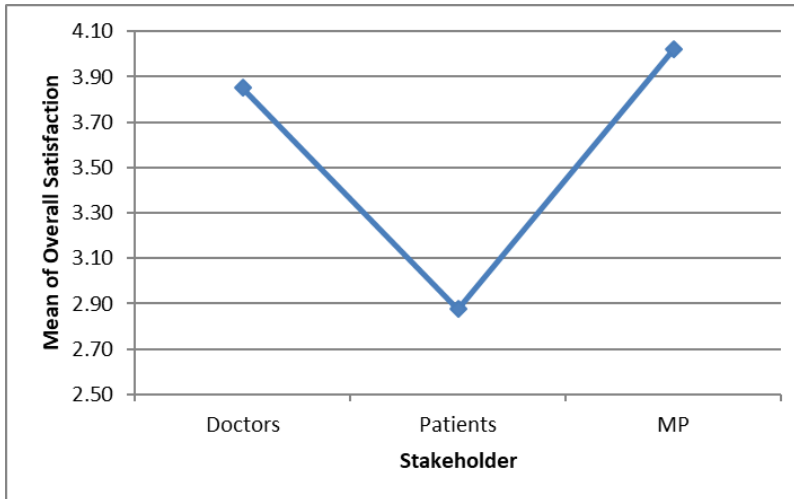
Table 4.46: Multiple Comparisons Overall Satisfaction about MST and Stakeholder
Dependent Variable: Overall satisfaction

Tukey HSD

(I) Stakeholder	(J) Stakeholder	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Doctors	Patients	1.01603*	.09407	.000	.7949	1.2371
	MP	-.17009	.09633	.182	-.3965	.0563
Patients	Doctors	-1.01603*	.09407	.000	-1.2371	-.7949
	MP	-1.18611*	.09048	.000	-1.3988	-.9735
MP	Doctors	.17009	.09633	.182	-.0563	.3965
	Patients	1.18611*	.09048	.000	.9735	1.3988

Source: Prepared by Researcher (*. The mean difference is significant at the 0.05 level.)

Figure 4.10 Mean difference of Overall Satisfaction and Stakeholders



If the managers of Pharmaceutical companies seek to increase sales, they should emphasize on the variables of 4Ps for the customers' satisfaction. Patients' care needs to be improved by considering their needs such as affordability, availability, efficacy and safety of cardiac medicines. Patients are the ultimate end users of cardiac medicines. If they are not satisfied and cured, that also has an effect on our national health and productivity as well. Pharmaceutical companies should ensure they put ethical principles of the healthcare business into practice.

4.9: Demographic Characteristics of Respondents

Data were collected from three groups of stakeholders. First group is cardiologists and direct customers who prescribe medicines for the patients. Second group is cardiac patients who are consumers but not decision makers to purchase. Third group is Marketing Professionals who sell the medicines in the pharmaceutical market. The details of sample characteristics are separately presented for discussion into demographic profile in the table 4.47, 4.48 and 4.49 respectively. Out of 536 total respondents 156 are cardiologists, 200 cardiac patients of the hospitals providing cardiac treatment and 180 marketing professionals of the pharmaceutical companies. The demographic characters of three

categories stakeholders consist of Gender, Age, and Academic qualification and Experience.

4.9.1 Demographic profile of Doctors (n=156)

Majority of the cardiologists are males comprising 76.6% of the total 156 and the rest 23.4 are females. Most of the cardiologists who participated in the survey fall below 30 years is 7%. Next major group between 30-40 years is 44.9%. On the other hand, age group 41-50 years is 37.2%, above 50 years is 10.3% respectively. Mean of overall satisfaction about MST represents that young and senior cardiologists are more satisfied than medium age group of 30-40 years.

Table 4.47: Demographic profile of Doctors

Demographic Characteristics of Doctors	Frequency (N)	Percent (%)	Mean of overall Satisfaction
Gender			
Male	121	76.6	3.84
Female	35	23.4	4.06
Age			
Below 30	12	7.7	4.17
30-40	70	44.9	3.19
41-50	58	37.2	3.94
Above 50	16	10.3	3.89
Education			
MBBS	60	38.5	3.87
FCPS	24	15.4	4.04
MD	44	28.2	3.57
D.CARD and other	28	17.9	4.32
Experience			
Less than 10	92	59	3.92
Above 10	64	41	3.84

Source: Prepared by Researcher

Academic Qualification of the cardiologists who are participated was found to be 38.5% MBBS,15.4% FCPS,28.2% MD, D. CARD and others17.9%. Overall satisfaction having academic qualification FCPS and D. CARD are found higher than MBBS and MD about the Marketing Strategies and Techniques of Pharmaceutical companies. Cardiologists who have experience prescribing cardiac medicines less than 10 years show higher satisfaction than experience group more than above 10 years.

4.9.2: Demographic profile of Patients (n=200)

A total of 200 patients who participated in the survey are 59.5% male and 4.5 % female. Majority of the cardiac patients suffering from Cardiac disease are females. Among the participants 20-30 years and 41-51years moderately satisfied about the marketing strategies of pharmaceutical companies than age group 31-40 years. Patients with higher education qualification are less satisfied with the marketing strategies of pharmaceutical companies rather than patients with lower educational qualification. Patients who had been using cardiac medicines for a longer period of time are less satisfied with the marketing strategies of pharmaceutical companies than the patients with fewer years of cardiac medicine usage.

Table 4.48: Demographic profile of Patients

Demographic Characteristics of Patients	Frequency (N)	Percent (%)	Mean of overall Satisfaction
Gender			
Male	119	59.5	2.88
Female	81	40.5	2.86
Age			
20-24	7	3.5	3.0
25-30	5	2.5	3.0
31-35	14	7	2.93
36-40	21	10	2.67
41-50	57	28	2.82
Above 51	96	48	2.93
Education qualification			
S.S.C	27	13.5	2.93
H.S.C	40	20	3.00
Honors	81	40.5	2.89
Others	52	26	2.73
Experience using cardiac medicine			
2-3 years	73	36.5	4.03
4-7 years	73	36.5	4.09
Above 8 years	54	27	4.00

Source: Prepared by Researcher

A total of 200 patients who participated in the survey are 59.5% male and 40.5 % female. Majority of the cardiac patients suffering from Cardiac disease are females. Among the participants 20-30 years and 41-51years moderately satisfied about the Marketing Strategies of Pharmaceutical companies than age group 31-40 years.

Patients with higher education qualification are less satisfied with the Marketing Strategies of Pharmaceutical companies rather than patients with lower educational qualification.

Patients who had been using cardiac medicines for a longer period of time are less satisfied with the Marketing Strategies of Pharmaceutical companies than the patients with fewer years of cardiac medicine usage.

4.9.3 Demographic characteristics of Marketing Professionals (n=180)

A total of 180 Marketing Professionals participated in the survey. Among them, 85% are male and 15 % are female. Majority of the Marketing Professionals dealing with cardiac medicines are male. Among the participants, the age group of 36-40 years is highly satisfied about the Marketing Strategies of Pharmaceutical companies. Marketing Professionals of other age groups are also satisfied to a good extent regarding these strategies.

Marketing Professionals with education qualification of MS. Pharm Tech are more satisfied with the Marketing Strategies of Pharmaceutical companies rather than Marketing Professionals with other educational qualification.

Professionals who had been dealing with cardiac medicines for 11-15 years are more satisfied with the Marketing Strategies than the Marketing Professionals with below 10 years and above 15 years' experience of selling cardiac medicine.

Table 4.49: Demographic Profile of Marketing Professionals

Demographic Characteristics	Frequency (N)	Percent (%)	Mean of overall Satisfaction
Gender			
Male	153	85	4.03
Female	27	15	4.26
Age			
Below 25	5	2.78	4.0
25-30	93	51.63	4.0
31-35	56	31.11	4.04
36-40	19	10.56	4.42
Above 40	7	3.88	4.06
Education qualification			
MS. Pharm Tech	144	80	2.93
B.Pharm	25	14	3.00
MBBS, MBA, BSS, MPH	11	6.11	2.89
Experience of selling cardiac medicine			
Below 5 years	123	68	4.03
5-10 years	45	25	4.09
11-15 years	8	4.4	4.38
Above 15 years	4	2.2	4.00

Source: Prepared by Researcher

List of hospitals in Dhaka city surveyed for cardiologists and cardiac patients are NICVD, BSMMU, DMCH, BIRDEM, SSMCH, SHSHCH, Mirpur Heart Foundation, Urobangla Heart Foundation, IBN SINA Hospital, Anwar Khan modern Medical College, Labaid, National Heart Foundation, CMH, Bangladesh Medical College Hospital, Mugdda Medical Hospital.

List of Pharmaceutical companies where this survey has been conducted are as follows- Unimed, Popular, Nuvista, Renata, Incepta, Aristopharma, Biopharma, Radiant, General Pharmaceutical, ACI, ACME, Square, Beximco, Beacon, SKF, Sevier, Healthcare Pharmaceutical, Orion.

CHAPTER 5

FINDINGS, CONCLUSION & RECOMMENDATIONS

5.1 Introduction

Finding of the present study will be discussed in two sections. In the first section, the discussion will be on the impact of variables of MST on Overall Satisfaction of Stakeholders and the second section will represent the impact of variables of MST on Marketing Professionals' Satisfaction about Sales of cardiac medicines.

The main findings of the research within the conceptual frame and relevant literatures have been explained based on established theories. The present research has revealed the impact of variables of Marketing Strategies and Techniques on Pharmaceutical Market (e.g. cardiac market segment) where the Cardiologists, Cardiac Patients and Marketing Professionals are considered as important components of the market. They are the three Stakeholders out of many and the main influential elements of the Pharmaceutical Market where the Sellers are the Marketing Professionals and the Customers and Consumers are the Doctors and Patients respectively.

5.2 Discussion on the findings of relationship between variables of MST with Stakeholders' Satisfaction

Firstly, the comparative analysis of the impact of the variables of MST on Stakeholders' Satisfaction combined and individual stakeholder's satisfaction is presented here. Secondly, the major findings of the research include hypotheses which have been analyzed by Factor Analysis and Regression Analysis. The variables of the hypotheses have been loaded into four factors such as Medicinal, Economic, Convenience and Communication Benefits. Results of test of hypotheses have been given below in table no. 5.1 where most of the hypotheses were found to have significant impact on Stakeholders' Satisfaction and a few hypotheses have insignificant impact on Stakeholders' Satisfaction (Facility of Model Pharmacy, Location of Pharmacy Place, Brand Image and New Cardiac Medicines)

Conversely, the magnitude of the effects is not the same for each independent variable on Stakeholders' Satisfaction. This can be found clearly by the value of β . Among the four factors, Medicinal issue is the most significant for Stakeholders' Satisfaction as it has the highest β value (0.567).

The second important factor is the Communication issue which has second highest β value (0.268). The Economic issue was found to be the third important significant factor with the lower β value (0.210) than first two significant factors. These three factors have good value and have significant effect on Stakeholders' Satisfaction. Medicinal benefit is found as most important factor because Stakeholders are highly concerned about the efficacy, safety, price quality relation of the medicine as it is a lifesaving medicine. At the same time, communicational relationship is crucial to them where Selling Skill of Medical Representatives, Promotional incentive policies, Continuous Medical Education program and Company Reputation are considered as important attributes of the MST that impact Stakeholders' Satisfaction. Similarly, they take the economic issue very seriously as it is a lifelong medication. So, the important variables of affordable price and availability of cardiac medicines have an impact on Stakeholders' Satisfaction.

The factor labeled as Convenience benefit has insignificant impact on Stakeholders' Satisfaction which has lowest β value (0.058) with greater p value 0.089 than 0.05 of alpha level of significance. Impact of MST on Pharmaceutical Cardiac Market and findings of Satisfaction of Stakeholders combined and individual Stakeholder (Doctors, Marketing Professionals and Patients) have been given in the table 5.1. Relative important variables of MST according to Stakeholders combined and individual Stakeholder (Doctors, Patients and Marketing professionals) were found to be different. The fourteen variables such as Efficacy, Brand Image, Safety Information, Company Reputation, New Medicines, Price-Quality relation, Competitive Price, Availability, Location of Pharmacy, Facility of Model Pharmacy, Selling Skill of Medical Representatives, Continuous Medical Education, Awareness Campaign to prevent cardiac disease, and Promotional Policies are loaded into four factors (F1, F2, F3 and F4) according to correlation.

Table 5.1: Impact of Marketing Strategies and Techniques on Stakeholders' Satisfaction Combined and Individual (Doctors, Marketing Professionals and Patients)

Sl. no	Research hypotheses	Stakeholders combined	Doctors	Marketing Professionals	Patients
H ₁	Relationship between Efficacy and Stakeholders' Satisfaction	Significant (p=0.000) Accepted	Significant (p = 0.030) Accepted	Significant (p = 0.009) Accepted	Significant (p=0.000) Accepted
H ₂	Relationship between Brand Image and Stakeholders Satisfaction	Insignificant (p = 0.089) Rejected	Significant (p = 0.000) Accepted	Significant (p = 0.001) Accepted	Insignificant (p=0.228) Rejected
H ₃	Relationship between Safety Information and Stakeholders Satisfaction	Significant impact (p = 0.000) Accepted	Significant (p = 0.030) Accepted	Significant (p = 0.001) Accepted	Significant(p=0.000) Accepted
H ₄	Relationship between Company Reputation and Stakeholders Satisfaction	Significant (p = 0.000) Accepted	Significant (p = 0.000) Accepted	Significant (p = 0.009) Accepted	Insignificant (p=0.228) Rejected
H ₅	Relationship between New medicine & Stakeholder Satisfaction	Insignificant (p = 0.089) Rejected	Significant (p = 0.000) Accepted	Significant (p = 0.001) Accepted	Significant (p=0.013) Accepted
H ₆	Relationship between Price -Quality relation and Stakeholders' Satisfaction	Significant impact (p = 0.000) Rejected	Significant (p = 0.000) Accepted	Significant (p = 0.004) Accepted	Significant (p=0.002) Accepted
H ₇	Relationship between Competitive pricing and Stakeholder Satisfaction	Significant (p = 0.000) Accepted	Significant (p = 0.000) Accepted		Significant (p=0.000) Accepted
H ₈	Relationship between Availability and Stakeholders' Satisfaction	Significant (p = 0.000) Accepted	Significant (p = 0.000) Accepted	Significant (p = 0.025) Accepted	Significant (p=0.000) Accepted

Sl. no	Research hypotheses	Stakeholders combined	Doctors	Marketing Professionals	Patient
H ₉	Relationship between Locations of Pharmacy Place & Stakeholders Satisfaction	Insignificant impact (p = 0.089) Rejected	Significant (p = 0.000) Accepted	Significant (P=0.001) Accepted	Insignificant (p=0.228) Rejected
H ₁₀	Relationship between Facilities of Model Pharmacy and Stakeholders Satisfaction	Insignificant impact (p = 0.089) Rejected	significant impact (p = 0.000) Accepted	significant impact (p = 0.001) Accepted	significant impact (p=0.003) Accepted
H ₁₁	Relationship between Selling Skill of MR and Stakeholders Satisfaction	Significant (p = 0.000) Accepted	Significant (p = 0.000) Accepted	Significant (p = 0.025) Accepted	
H ₁₂	Relationship between Continuous Medical Education for doctors and Stakeholders Satisfaction	Significant (p = 0.000) Accepted	Significant (p = 0.000) Accepted	Significant (p = 0.025) Accepted	
H ₁₃	Relationship between Awareness Campaign to prevent cardiac disease and Stakeholders Satisfaction	Significant (p = 0.000) Accepted	Significant (p = 0.000) Accepted	Significant (p = 0.001) Accepted	Significant (p = 0.002) Accepted
H ₁₄	Relationship between Promotional Policies and Stakeholders Satisfaction	Significant (p = 0.000) Accepted	Significant (p = 0.000) Accepted	Significant (p = 0.025) Accepted	Significant (p=0.002) accepted

Source: Prepared by Researcher

The factors are labelled as Medicinal, Economical, Convenience and Communication benefits. Result of Rotated Factor Matrix has been shown in the table 5.2.

Table 5.2: Results of Rotated Factor Matrix on Satisfaction of Stakeholders combined and individual (Doctors, Marketing Professionals and Patients.)

Stakeholders combined(536)	Doctors (156)	Marketing Professionals(180)	Patients (200)
F1* =Medicinal Benefit	F1*=Economic-Medicinal Benefit	F1*=Convenience Medicinal Benefit	F1*=Economic-medicinal Benefit
Awareness Campaign	Availability	Location of Pharmacy	Availability
Price -Quality	Company reputation	Facilities of Model pharmacy	Competitive Price
Safety Information	Competitive price	Brand Image	Safety Information
Efficacy	Price-quality	Safety Information	Efficacy
		Awareness Campaign	
		New Cardiac medicine	
F2*=Communication relationship Benefit	F2*=Medicinal-Communication Benefit	F2*= Communication Benefit	F2=Medicinal-Convenience Benefit
Selling Skill of Medical Representative	Promotional Policies	Promotional Policies	Company reputation
Promotional Policies	New cardiac medicines	Continuous Medical Education	Brand Image
Continuous Medical Education	Selling Skill of Medical Representatives	Availability	Location of Pharmacy
Company Reputation	Brand Image	Selling Skill of Medical Representatives	
	Location of Pharmacy		
F3=Convenience Benefit	F3*=Communication Benefit	F3*= Medicinal Benefit	F3*= Medicinal-Communication Benefit
Facilities of Model pharmacy	Awareness campaign	Efficacy	Promotional Policies
Location of Pharmacy	Continuous Medical Education	Company Reputation	Awareness Campaign
Brand Image	Facilities of Model pharmacy		Price-Quality
New Cardiac medicine			
F4* = Economic benefit	F4*= Medicinal Benefit	F4*= Economic benefit	F4*= Medicinal Benefit
Competitive Price	Safety Information	Price -Quality	New Medicine
Availability	Efficacy		

Source: Prepared by Researcher (* indicates that the factors have significant impact on overall satisfaction)

The factor 3 labeled as Convenience benefit was found to have an insignificant impact on Stakeholders' Satisfaction and has the smallest β value. Convenience issues are Facilities of Model Pharmacy, Location of Pharmacy Place, New Medicine and Brand Image. The dependent variable of the study is Stakeholders' Satisfaction and 14 attributes of MST loaded into four factors have been considered as independent variables. Individual Stakeholder's Satisfaction was found to be different.

5.2.1. Relationship between Medicinal Variables and Stakeholders' Satisfaction

H₁: Relationship between Efficacy and Stakeholders' Satisfaction:

Efficacy of medicine is vital for all level of Stakeholders and accepted in this research ($p = 0.001$ & $\beta = 0.567$). This is matched with relevant literatures Murshed AM (2014) mentioned the main element of product strategy is efficacy and effectiveness that results in the remedy of the disease and has an effect on doctor's satisfaction. Kalaskar et al., (2012), Sultana et al., (2011) and Obaridat et al., (2011) carried out empirical study and found positive influence on physicians' satisfaction. It was tested through quantitative analysis and was found to have a significant impact on stakeholders' satisfaction of 3 categories (Doctors, Patients and Marketing professionals).

H₂: Relationship between Brand Image and Stakeholders' Satisfaction:

Regression analysis test shows the p value is 0.089 for this case that demonstrates that this is not statistically significant. Therefore, the hypothesis is rejected. Generic name is more accepted than brand name, Ang Hoo Bee (2009) explained that strong brands build loyal customers but consumers look for generic drugs with similar function at a lower price. Guhl et al., (2015) and Irina P et al., (2009) found generic medicines are more preferred than branded ones.

H₃: Relationship between Safety Information and Stakeholders' Satisfaction

Safety Information has a direct positive influence on Stakeholders' Satisfaction, which includes both combined and individual stakeholders (Doctors, Patients and Marketing Professionals). It was developed on relevant literatures and is supported by the recent study. The Doctors try to get Safety Information regarding the side effect, contradiction with other drugs, frequency of use, dosage form and formulation standard of the cardiac medicines.

The Cardiac Patients who are ultimate users of medicines need to know about Safety Information regarding medicines in the form of leaflets. The main responsibility of Marketing Professionals is to inform all of these information to Cardiologists and Cardiac Patients. Use of medicines depend on Safety Information (Bednark et al., 2005). Therefore, it is clear that the Safety Information of cardiac medicines affects the satisfaction of stakeholder. There are several studies which support the hypothesis. In this study, this hypothesis is accepted ($p = 0.000$ and $\beta = 0.567$).

H4: Relationship between Company Reputation and Stakeholders' Satisfaction

Company Reputation has been found to exert a significant influence on Stakeholders' Satisfaction as the beta value of 0.567 with a p value of 0.000. Company Reputation is a very important element of MST for Cardiologists and creates a point of difference, especially for a lifesaving cardiac medicine which is supplied by the company to the patients under a doctor's prescription. Patients are not aware about the company. Therefore, this hypothesis is accepted for stakeholders' satisfaction of both doctor and managers combined with the exception of patients. Murshid, AM (2014) mentioned in his empirical study that Company Reputation has strong relationship with physicians' satisfaction.

H5: Relationship between New Medicine and Stakeholders' Satisfaction.

H5 was not supported. Impact of New Medicines on Stakeholders' Satisfaction is found to be insignificant as New Medicines face challenges for acceptance due to effectiveness and safety reasons. But this hypothesis is supported by individual Stakeholder's Satisfaction. Relationship between Satisfaction of Doctor, Manager and patient, regarding New Medicine shows the significant p value, which is statistically significant. This is shown in table 5.1. Therefore, the hypothesis is accepted. This finding was consistent indirectly with the study conducted by Anthony C et al., (1999)

5.2.2 Relationship between Economic Variables and Stakeholders' Satisfaction

H6: Relationship between Price Quality Relationship and Stakeholders' Satisfaction.

One of the most important objectives of the study is to find the impact of Price Quality relationship of Pricing Strategy on Stakeholders' Satisfaction. This hypothesis is strongly

supported by significant p value=0.001 and β value= 0.567, based on previous study conducted by Murshid, et al., (2014). The Price Quality relationship has a positive influence on Stakeholders' (doctors) satisfaction and individual stakeholder's satisfaction.

H₇: Relationship between Competitive Price and Stakeholders' Satisfaction.

This hypothesis is developed based on a certain literature where it is shared that the affordable price or competitive price has a positive impact on Stakeholders' Satisfaction that is also validated for individual Stakeholder's Satisfaction (Doctors, Patients). The Regression analysis shows that $p = 0.000$, and $\beta = 0.567$ based on these results. Therefore, H₇ is supported and accepted which is statistically significant. Kalaskar et al., (2012), Sultana et al., (2011), Kotler and Amonstrong (2008), Sayandhan et al., (2008) explained that the Price Quality relationship has positive impacts on customers' satisfaction which is accepted worldwide for all type of industries.

5.2.3 Relationship between Convenience Variables and Stakeholders' Satisfaction.

H₈: Relationship between Availability and Stakeholders' Satisfaction.

The study also investigated the impact of Availability of cardiac medicines on Stakeholders' Satisfaction and found a positive relationship between these two variables. (As shown in table 5.1)

The coefficient of overall satisfaction ($\beta = 0.210$, p -value = 0.000) demonstrates that Availability of medicines is one of the strong attributes of MST that impacts the Satisfaction of the Stakeholders combined and individual Stakeholder (Doctor, Patient and Marketing Professional). Thus, the hypothesis is accepted. Sayandhan et al. (2008) investigated the empirical study and found that the Availability of medicines has a positive influence on physicians' (Ophthalmologists') satisfaction.

H₉: Relationship between Location of Pharmacy Place and Stakeholders' Satisfaction.

The study as shown in table 5.1 demonstrates that the impact of Location on Stakeholders' Satisfaction is found to have no strong effect as coefficient of β is found to be 0.058 with p value=0.089. This hypothesis is not accepted. In the case of Patients' Satisfaction, it is

also not accepted as cardiac medicines are lifesaving drugs, patients will purchase it from anywhere it is available. The p value is 0.228 which is greater than α value of 0.05.

In case of individual stakeholder like Doctors and Marketing Professionals, the hypothesis is accepted. This study has found that the Location of Pharmacy Place is an important variable of MST that impacts the Satisfaction of Doctors and Marketing Professionals. The p value is 0.000 for both doctors and Marketing Professionals. However, the doctors and Marketing professionals are not actual customers as the patients are the main consumers who purchase the quality medicine wherever they can get it. Guhl et al. (2016) found the positive relationship between Location of Pharmacy Place and Customers' Satisfaction.

H₁₀: Relationship between Facility of Model Pharmacy and Stakeholders' Satisfaction.

The comparative study, as shown in table 5.1, that β is 0.058 and ρ value is 0.089 for satisfaction of stakeholders (combined). The hypothesis regarding Impact of Model Pharmacy on combined Stakeholders' Satisfaction is rejected. But impact of Facility of Model Pharmacy newly introduced Place Strategy in Bangladesh is found to have a significant influence on quality management of medicines in all aspect. Therefore, this hypothesis is accepted by each individual stakeholder. The values of p for satisfaction of doctors, managers and patients are found to be 0.000, 0.001 and 0.003 respectively. In this study, it is clear that there is a strong effect of Model Pharmacy on the Satisfaction of the 3 categories of stakeholders separately.

5.2.4 Relationship between Communication Relationship Variables and Stakeholders' Satisfaction.

H₁₁: Relationship between Selling Skill of Medical representatives and Stakeholders' Satisfaction.

Selling or Communication Skill of Medical Representatives (MR) is very important for both Doctors and Pharmaceutical Companies because MRs work as a bridge between them to convey all types of medicinal information from companies to doctors who prescribe medicines on the basis of the information. This study found that the impact of the Selling Skill of Medical Representatives has a very strong relation with Stakeholders' Satisfaction

and Doctor's satisfaction with p value = 0.000 and p value = 0.000 respectively. Whereas the table 5.1 has shown the relationship in the case of Marketing Professionals to be, $p = 0.025$ and for patients' satisfaction, it is found to be $p = 0.000$. This hypothesis is accepted. The result of the findings is consistent with the past literature by Sayandhan et al., (2008)

H₁₂: Relationship between Continuous Medical Education program for the Doctors(CME) and Stakeholders' Satisfaction

CME plays an important role on the prescribing behavior of Doctors. It has a positive impact on Doctors' mind and Satisfaction. Taneja et al., (2008) investigated the impact of promotional mix on doctors' prescribing behavior and found a positive relationship with CME and prescribing behavior. Wang and Wallander (2006) revealed that CME has a positive influence on doctors to prescribe. This hypothesis is accepted by the Stakeholder's Satisfaction, Doctors and Managers, with the p value is 0.000, 0.000 and 0.025 respectively. CME has exerted a positive relation in Stakeholders' Satisfaction.

H₁₃: Relationship between Awareness Campaign to prevent cardiac disease and Stakeholders' Satisfaction.

Awareness Campaign has shown a significant influence on Stakeholders' Satisfaction and Satisfaction of individual Stakeholder. H₁₃ was supported this finding and was consistent with that of previous literature mentioned by Sayandhan et al., (2008). It asserted a positive correlation with $\beta=0.567$ and p value= 0.000.

H₁₄: Relationship between Promotional Policies and Stakeholders' Satisfaction.

This study found that Promotional Policy which represents promotional incentive has exerted a positive correlation with stakeholders' satisfaction. The value of p is 0.000 with $\beta=0.268$ for all stakeholders' satisfaction. This finding is important for Pharmaceutical industry and consistent with the past literature by Sayandhan et al., (2008)

5.3 Discussion on the findings of relationship between variables of MST and Marketing Professionals' Satisfaction about Sales

Section Two: Findings of Impact of MST on Sales Performance of Cardiac medicines in Bangladeshi Pharmaceutical Market according to Marketing Professionals satisfaction.

5.3.1 Relationship between Medicinal variables of MST and Marketing Professionals' Satisfaction about Sales

H1: Efficacy of cardiac medicine has positive impact on Marketing Professionals' Satisfaction about Sales.

In this research, the hypothesis is accepted. It was tested by quantitative analysis and was statistically significant where p value is 0.009 and β value is 0.183 The Efficacy of cardiac medicine has positive impact on Sales and Market Share. It has been accepted in this research and validated by previous literatures. Ang Hooi Bee (2008) emphasized that the quality and efficacy of medicines are the crucial elements that need to match with certain specific standards and is the only way to get rid of the cardiac problem. It has a positive impact on Sales and Market Share.

H2: Brand Image of cardiac medicines have positive impact on Marketing Professionals' Satisfaction about Sales.

Brand Image has direct positive impact on Sales of cardiac medicines. It is developed based on few relevant literatures which is significantly supported by this study. The p value is 0.001 and β value is 0.190. It is clear that in this study there is strong relationship of Brand Image and Sales. Guhl et al., (2015) studied the impact of Brand and Generic drugs on Doctors' prescribing behavior and Sales and it is found to have a significant effect.

H3: Safety Information of cardiac medicine has positive impact on Marketing Professionals' Satisfaction about Sales.

It is similar with the findings of other relevant literatures. Safety Information regarding side effects, contra indication, frequency of uses, are very important elements for the doctors and the patients (Dimitris,2004). Cardiac medicines are lifesaving. In this study, it is clear that there is a strong correlation between Safety Information supplied by the

pharmaceutical companies and sales. Thus, the hypothesis is accepted and p value is 0.001 with β value 0.190

H4: Company Reputation has significant impact on Marketing Professionals' Satisfaction about Sales.

Company Reputation exerts a significant influence on sales as β value 0.190 and p value 0.001. Company Reputation creates a difference for the cardiac medicines. This finding is also supported by other relevant literatures. The hypothesis is accepted by quantitative regression analysis. Sayandhan et al., (2008) revealed the influence of organizational image on physicians' prescribing decision and sales.

H5: New Cardiac Medicine has significant impact Marketing Professionals' Satisfaction about Sales.

New Cardiac Medicines which add new alternative and better efficacy and dual effect attract cardiologists to prescribe new medicines for quick effectiveness. New medicine is the most significant variable with the highest β value 0.190 and p value 0.001. This hypothesis is accepted in previous study mentioned by Chaganti SR (2005) and Dogramatiz D (2004) that new medicine with better outcomes is a major contributing element that impacts doctors' prescription and sales.

5.3.2 Relationship between Economic Variables of MST and Marketing Professionals' Satisfaction about Sales

H6: Price signal quality has positive impact on Marketing Professionals' Satisfaction about Sales.

That price quality relationship directs a positive influence on sales that was developed in relevant literatures. The hypothesis is significantly supported by this present study. Price is an economic issue and cardiac medicines are life- saving drugs. Quality is important element for effectiveness of medicine and price signals quality of the medicines. β value is 0.165 and p value is 0.004 This hypothesis is accepted and can be explained by the fact that patients look for affordable price for cardiac treatment. Ang Hooi Bee (2008) carried

out an exploratory empirical research on impact of marketing mix on market share and found that price-quality relation has a positive influence on sales and market share.

5.3.3 Relationship between Convenience variables of MST and Marketing Professionals' Satisfaction about Sales

H7: Availability of cardiac medicines has positive impact on Marketing Professionals' Satisfaction about sales.

This study investigated the impact of availability of cardiac medicines found positive on sales according to Marketing Professionals of the Pharmaceutical Companies. The coefficient of overall satisfaction about sale is $\beta = 0.128$ and $p = 0.025$. This hypothesis is accepted and indicates that there is moderate relationship between availability of cardiac medicines and sales performance. Ang Hooi Bee (2008) and T.sayandhan et al., (2008) found that availability has positive impact on sales and market share.

H8: Location of Pharmacy has positive impact on Marketing Professionals' Satisfaction about Sales.

The study as shown in table 5.1 illustrates the impact of Location of Pharmacy has strong positive correlation with the sales performance. The value of β is found to be 0.190 and p value is 0.001 which is less than α value 0.05. Thus the hypothesis is accepted by quantitative regression analysis which is statistically significant. Kotler P (2002), Mc Carthy (1999) explained that the Location of Retail shop has significant impact on sales for any kinds of products.

H9: Facility of Model Pharmacy has positive impact Marketing Professionals' Satisfaction about Sales.

Facility of Model Pharmacy newly introduced Place Strategy in Bangladesh (2017) is found to have a significant impact on distribution network and sales. To maintain quality, availability, researchable price and consulting by 'A' grade pharmacists, the role of Model Pharmacy has shown a positive impact on patients' perception (Sultana, 2018). In this present study, it has been found that the Facility of Model Pharmacy has significant impact on sales. The β and p value are 0.190 and 0.001 respectively.

5.3.4 Relationship between Communication variables of MST and Marketing Professionals' Satisfaction about Sales

H10: Selling or Communication Skill of Medical Representatives has positive impact Marketing Professionals' Satisfaction about Sales.

In this study, the Selling Skill of MR was found to have a moderate relationship with sales performance of cardiac medicines. MR plays an important role to convey the medicinal information from pharmaceutical companies to doctors for the decision process of prescribing medicines. The hypothesis is supported by previous study. The value of β is 0.128 and p is 0.025 which are within the significant limit of $\alpha < 0.05$.

Rizwan, et al., (2014) studied on Marketing Mix Strategy in the Pharmaceutical industry and found Promotional Policies and spending on skill development have a positive influence on the selling of medicines.

H11: Continuous Medical Education program for doctors has positive impact Marketing Professionals' Satisfaction about Sales.

Continuous Medical Education program through seminar conference for the doctors has a significant impact on doctors' prescribing decision and helps to position medicines in doctors' mind to prescribe. The researchers Rizwan et al., (2014) revealed that it is one of the important elements of MST to motivate doctors to prescribe medicines of certain Pharmaceutical Companies. Thus, it helps to influence Sales Performance of the medicines. It has been found that CME has positive impact on sales. The value β is 0.128 and p value is 0.025. Thus the hypothesis is accepted.

H12: Awareness Campaign to prevent cardiac disease has positive impact on Marketing Professionals' Satisfaction about Sales.

This hypothesis is supported and has a significant influence on sales. The finding is found to be consistent with the previous literature. It exerted a positive strong correlation on Sales. It was found that the β value is 0.190 and p value is 0.001 which are statistically significant. Sayandhan et al., (2008) revealed the influence of awareness campaign on prescription decision and sales.

H13: Promotional Policies have positive impact Marketing Professionals' Satisfaction about Sales.

This study has shown that there is moderate positive correlation between promotional incentives and sales. The p value is 0.025 and β value is 0.128. This finding is also consistent with past research carried out by Ang Hooi Bee (2008), Rizwan RA et al., (2014) and Sayandhan, T. et al., (2008).

5.4 Conclusion

This study has been conducted in order to meet some objectives. These objectives may include finding out the significant factors that affect stakeholders' satisfaction and sales of Pharmaceutical cardiac market segment in Bangladesh. The research has measured the significant level of relationship between Stakeholders' Satisfaction and variables of Marketing Strategies and Techniques offered by the Pharmaceutical companies. As the study was conducted on three categories of stakeholders such as Cardiologists, Cardiac Patients and Marketing Professionals of cardiac market segment, it gives us opportunities to compare the relative important variables of MST with different influential stakeholders on the medicinal, economic, convenience and communication issues. From this, it is easy to find out whether there is any significant difference among the three categories of Stakeholders' Satisfaction or not. By using Factor Analysis several results have been achieved. Based on several statistical scientific researches and results found by this study, a conclusion can be made-

It is found by the study that there is significant correlation of satisfaction level of the three categories of stakeholders (combined) with three out of the four factors. These three factors are medicinal, economic and communication relationship benefits with the exception of the convenience benefit factor. There is a significant difference between mean scores of Overall Satisfaction about MST and Stakeholders. The impact of variables of MST on Sales according to Marketing Professionals' Satisfaction was found to have statistical significance.

5.5 Recommendation

Recommendations have been based on the findings of this current research. The most important attributes of MST have a significant impact on Stakeholders' Satisfaction and Sales of cardiac medicines. The variables are loaded into four factors labeled as medicinal, communication, economic and convenience benefits. Analysis via Rotated Factor Matrix have found significant impact of three of these factors (medicinal, communication, economic benefit) on stakeholders' satisfaction. The relative important variables are Awareness campaign to prevent cardiac disease, Price Quality relationship, Safety information, Efficacy of cardiac medicines, Selling Skill or Communication Skill of Medical Representatives, Promotional Policy, Continuous Medical Education for the doctors, Company Reputation, Affordability and Availability.

Model Pharmacy, a relatively new concept introduced into Place Strategy in 2017 in Bangladesh, has been found to have a significant impact on Patients' Satisfaction regarding quality, reasonable price, data base system and counseling by "A" grade pharmacists.

Overview of overall discussion in this study and conclusions that were derived from the statistical analysis of research hypotheses are presented here. The implications of the research outcomes can be recommended in the following perspectives:

5.5.1 Theoretical Implications

This research was undertaken to understand the impact of factors of Marketing Strategies and Techniques on Pharmaceutical Market in Bangladesh. The Pharmaceutical industry is one of the most promising and second largest sectors that contribute to the national income. The sales growth of the pharmaceutical companies depends on Marketing Strategies and Techniques to gain competitive advantages over competitors. This study aimed to find the factors relevant to Stakeholders' Satisfaction and develop relationship between them. The current study has found important factors such as medicinal, economic, convenience and communication relationship benefits that impact on satisfaction of doctors, patients and marketers and sales. This research has used factor analysis which has given more credible evidence in the analysis of the relationship between the independent variables of Marketing

Strategies and Techniques and the satisfaction of three categories stakeholders in the pharmaceutical cardiac market. This research may inspire further study of other therapeutic segments of the pharmaceutical market. This research could guide the researchers to better understand how MST, benefits and stakeholders' satisfaction interact in pharmaceutical industry in Bangladesh. Collaborative researches of Pharmaceutical companies and Universities of home and abroad for new medicines and Pharmaceutical Marketing are very much needed in order to compete in highly competitive markets, both nationally and internationally.

The present study has revealed that marketers have lack of information about their customers and consumers (e.g. Doctors and Patients). This result indicates that important factors evaluated by managers were not always very good at recognizing the major causes of dissatisfaction of doctors and patients. The researchers carry out the market research, particularly in Bangladesh, to identify the customers' perception towards MST and recommend the managers to revise Marketing Strategies from the point of view of doctors and patients

5.5.2 Managerial Implications

Awareness campaigns to prevent cardiac disease is the number one finding among all variables of MST that need to be practiced in Bangladesh. All stakeholders unanimously agree that it will help to reduce death, and alleviate overall health quality of the masses.

Pharmaceutical companies can take initiative to prevent the occurrence of cardiac diseases through media advertisement, sponsoring sports or physical activities through games and competition. Media advertisement on changing the food habit and life styles that causes cardiac diseases can help to create an impact on the mind of the Bangladeshi people. Social Media Marketing is a cost effective alternative that can be used for creating awareness about the diseases to reach the large number of people and educate them easily. The use of internet based marketing, e-detailing, sale analytical software can help them to optimize the use of Medical Representatives and decrease the cost of the product. Animated videos, research articles, advertisements on journals and awareness campaigns can have a positive

impact on doctors, patients and other stakeholders that helps them to understand the information in a very simple way.

Price Signal Quality represents the relationship of price and quality, efficacy and safety information of cardiac medicines as lifesaving drugs which are prescribed for lifelong medication. Premium pricing strategy which indicates high quality medium price adopting flexible approach to pricing will be suitable. Pharmacological effectiveness of the medicines and affordable pricing exert a significant impact on the satisfaction of doctors and patients. Brand image is not preferable more than generic low price medicines. Cardiac medicines are prescribed by the doctors to cardiac patients who are the end consumers and in turn, they (patients) accept the doctors' prescription in good faith. The doctor should also consider the affordability of the drugs they prescribe by taking into account the purchasing power of his individual patient and follow ethical practice while prescribing.

Perceived value or benefits of Marketing Strategies and Techniques impact doctors' satisfaction which influences the sales of medicines. So the positive effect of medicine quality, efficacy, low price, availability and promotional policies make cardiologists satisfied. Managers of pharmaceutical companies should have planning to ensure medicine quality within an affordable price. It is crucial to create value of money for the patients' treatment along with other stakeholders.

Managers of pharmaceutical companies can use the current findings to develop their strategies that will enhance doctors' perceived value regarding the benefits of MST and to improve their satisfaction.

The significant impact of promotional policies (Product samples, product literature, gift items or gimmicks), Selling Skill of Medical Representatives and Continuous Medical Education (CME) program for doctors through seminar and conference on doctors' satisfaction have been found in the current study. Pharmaceutical companies should ensure ethical practice in marketing medicine at all times. They need to innovate new ways to deal with the customers' and consumers' requirements. The impact of social media is very effective now-a-days and a very powerful promotional tool which has reshaped the whole pharmaceutical industry in Bangladesh.

The Selling Skills and Scientific Knowledge regarding medicines of Medical Representatives play an important role to persuade doctors to prescribe medicines and maintain relationships with pharmaceutical companies and impacts their satisfaction. Regular visits of Medical Representatives to doctors is an important tool or technique for Pharmaceutical companies to keep a vigilant eye on the requirements of doctors and patients.

Cardiac medicines are lifelong medications yet cardiac patients are not satisfied about the price of cardiac medicines. Pharmaceutical companies can reduce the promotional budget for doctors and price for patients. They invest more on Awareness Campaigns to prevent causes of cardiac diseases for the public.

The current study has found the important factors, medicinal and economic, that impact patients' dissatisfaction so that policy makers such as the Government and Marketing Managers can invest their effort to improve those issues. The findings of the present study indicate that patients are more prone to buying medicines which have high efficacy and have affordable price. Marketers need to deploy new forms of Strategy with experimental features that can exert positive impact on patients' perception and satisfaction. Marketing managers can enhance the satisfaction of doctors and patients by improving efficacy, offering affordable price and extending communication relationship to both doctors and patients.

5.5.3 Governmental Implications

Government should monitor the implementation of New Drug Policy 2016 by increasing manpower and drug testing laboratories in the Drug Administration to regulate standard quality of medicines. Government should also monitor the pricing policies of pharmaceutical companies ensuring the transparency of costs of inputs producing and marketing medicines.

The new concept of Place Strategy "Model Pharmacy", introduced by the new drug policy, can solve many problems by ensuring quality, availability, affordability and safety use of medicines through the counseling of "A" grade pharmacists. Monitoring of implementation of new concepts by DGDA authority will be helpful for patients' benefit.

Government can introduce health insurance policies for cardiac patients to reduce the cost of cardiac treatments.

Government through DGDA will encourage and support Pharmaceutical companies to take initiative for producing raw materials at API Parks in Munsigonj in Bangladesh to reduce the price of medicines.

Government of Bangladesh can provide support in collaboration researches of Pharmaceutical companies and Universities of home and abroad for new medicines better efficacy and dual effectiveness.

5.6 Contribution of the Research

This empirical study on the impact of Marketing Strategies and Techniques on Stakeholders' Satisfaction and Sales of Pharmaceutical Market is the first initiative so far known to researchers in a Bangladeshi context.

The research has evaluated a gap between the offer of Marketing Strategies and Techniques with overall satisfaction of stakeholders that were not done before in Bangladesh quantitatively for the cardiac market segment and other therapeutic segments.

The study has contributed to the theory as dissatisfaction of patients was not measured before in the context of Bangladesh. This research may contribute to the literature of developing countries.

Again, the research on the recent concept of Model Pharmacy under the newly introduced drug policy (2016), has shown important factors such as quality of medicines, data base systems, reasonable price counseling by “A” grade pharmacists of Model Pharmacies better than conventional retail pharmacy which was not quantitatively analyzed before in Bangladesh. This concept of Model pharmacy is rare in Bangladesh and other developing countries. These findings may contribute to the literatures.

On the other hand, this research has used factor analysis which has given more credible evidence in the analysis of the relationship between the independent variables of Marketing Strategies and Techniques on the satisfaction of three categories stakeholders in the

Pharmaceutical Cardiac market. This research may inspire further study of other therapeutic segments of the pharmaceutical market.

This study has tried to focus on the important attributes of Marketing Strategies and Techniques that impact on the satisfaction of doctors, patients and marketers. The Strategy makers of Pharmaceutical companies can revise their policies and take into consideration the relatively important factors needed to satisfy the needs of cardiac patients since the Pharmaceutical industry is a healthcare business which separates it from the industries of other consumer goods.

The present study has revealed the lack of detailed information of marketers about needs of their customers and consumers (e.g. Doctors and Patients). The relative important factors of MST evaluated by doctors and patients were found to be different from that of the Marketing Professionals of Pharmaceutical companies. This result indicates that important factors evaluated by managers were not always very good at recognizing the major causes of dissatisfaction of doctors and patients. The Managers of Pharmaceutical companies, particularly in Bangladesh, should better understand the customers' perception towards MST. The companies need to revise their perspective from the point of view of doctors and patients. These findings may contribute to the literatures of Pharmaceutical Marketing Research in Bangladesh and development of Marketing Strategies and Techniques for the Pharmaceutical companies.

5.7 Limitations of the Study

- Only cardiac segment of Pharmaceutical market in Bangladesh has been selected to evaluate the impact of MST using exploratory factor analysis due to constraint of resources.
- Only three categories of Stakeholders, such as Cardiologists, Cardiac patients and Marketing Professionals, have been selected as respondents. Other Stakeholders like wholesalers, retailers, regulators competitors etc. haven't been considered due to time constraints.
- Only Dhaka based Hospitals and Pharmaceutical companies were considered highlighting its geographical limitations.
- The respondents did not want to disclose all information due to confidentiality.

- The respondents like doctors, managers were found to be too busy with work pressure and not available for data collection. Constant reminders may have irritated to fill up the questionnaires in non-serious mood. Despite best efforts reluctance of respondents and response bias may have come.
- Results of the cardiac market cannot be generalized to other segments of industries like food, agriculture etc.

5.8 Direction for Future Research

This type of study is very important since the Pharmaceutical market produces medicinal products which are crucial for treatment regimen of patients. However, not sufficient work has been conducted in this context in Bangladesh although this type of research work is very common in the West and other developed nations. Gradually, Bangladesh has achieved a competitive and respectable position for producing and marketing different therapeutic groups of medicines home and abroad. Cardiologists, Cardiac patients and Marketing Professionals have only been surveyed in the context of Bangladesh. This can also be considered in the context of South East Asia for further studies. The topic of the study is to evaluate the impact of Marketing Strategies and Techniques on the satisfaction of doctors and patients. In order to improve this sector and sustain the credibility in the competitive world market, stakeholders' satisfaction and sales are two of the most important issues.

The study has identified the factors that are crucial to the doctors and patients for their satisfaction. So policy makers like pharmaceutical companies and the government of Bangladesh can invest their time, money and effort for the improvement of those factors. On the other hand, the study involves the cardiac market segment which has achieved the third position in sales in comparison to other the therapeutic segments of the Bangladeshi Pharmaceutical Market. By involving the cardiac market segment, a good comparison can be made on this issue and the outcome of the research may lead to proper guidelines for other therapeutic segments of the Pharmaceutical Market in Bangladesh.

The study has both theoretical and practical significance as the findings of the research may fill in the important research gaps that were identified in the literature.

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Appendix A

i. Questions for expert opinion of Doctors:

1. Do you think that Pharmaceutical companies provide quality efficacious medicines to cure cardiac diseases?
2. How do the Pharmaceutical companies develop brand image to satisfy your need better than generic name?
3. Does Company reputation influence you to prescribe?
4. Do Pharmaceutical companies supply you enough safety information about the medicines?
5. How do the Pharmaceutical companies introduce new medicines with better benefits which outsell old medicines?
6. How do the Pharmaceutical companies try to position medicine in your mind successfully?
7. Do you think that Prescription survey plays a vital role in understanding the sales performance?
8. Is quality of the medicines reflected actually in Price?
9. Are knowledge and communication skill of medical representatives about medicines important factors to you?
10. Does Medical representative's (MR) regular visit effect on your prescription?
11. How do seminars, new product launch program and study tour help doctors?
12. Is E-detailing of cardiac drug information very effective?
13. How do Continuous Medical Education program for doctors regarding medicine Impact on prescribing decision?
14. Do you think that Free samples, gifts with company's name, monographs help to remind doctors' the medicines to prescribe?
15. Do you think that public relation and publicity through awareness campaign for cardiac patients is essential? Why?

ii. Questions for expert opinion of Marketing Professionals:

1. How does Product portfolio analysis help to find the product position in BCG Matrix?
2. Do you set price on the basis of cost per unit of the medicines?
3. Is competitive price an important consideration for setting price?
 4. Are Medicines available when needed at retail and hospital pharmacies?
5. Do you think Locations of retail pharmacies are imperative to reduce customer transportation cost?
6. Is Regular assessment of sales data crucial for the companies' sales performance?
7. Is Term of payment important to attract retailers to keep the medicines of the companies?
8. Are Discount methods helpful for selling medicines?
9. Do you think that Distributors' feedback regarding competitors' strategies is very important?
10. Do you think that Company's own distribution system is crucial for sales performance?
11. How does training of marketing people help on sale?
12. Does Marketing budget (expenses) have an impact on sales?
13. Is Motivation of MR very important for sales?
14. What do you think that outsourcing of foreign investors to produce cardiac medicines in Bangladesh will increase the sales growth nationally and internationally?
15. Do your marketing department post in-detail marketing plans in its internal website to allow managers, employees in different locations to consult and change?
16. Please tell your company's strategies to compete with your competitors by
 - Expanding market by new uses, new doctors
 - Position defense
 - Flank defense
 - Counter offensive
 - Diversification

- Contraction defense
 - Specific attack
17. Does your company carry out market research to get up-to-date information about competitors and doctors to adjust its 4ps strategies?
18. Does your company apply the research finding to develop strategies to
- Segment
 - Target
 - Differentiate
 - Positioning
 - other
19. Is your marketing department organized by-
- Function
 - Geography
 - Product
 - Doctors
 - other
20. What percentage of their sales does your company spend on marketing?
21. Does year company practice total quality management (TQM) in team work of marketing department to share knowledge, experience and problem solving skill to satisfy their customers (doctors, retailers)?
22. Do you segment cardiologists according to -
- Experience
 - Reputation
 - Qualification
 - Age
 - Gender
 - Area of practice
 - Number of prescription
 - psychology
23. Do you segment patients according to
- Income

- Education
- Age
- Sex
- Psychology

24. How do you survey of patient's reaction to a change in price and why?

iii. Questions for expert opinion of Academicians:

1. The recent concept of model retail pharmacy in important places of Dhaka which have a huge stock of a wide range of medicines will be helpful for patients and companies. What do you think?
2. Collaboration program with pharmaceutical companies and universities will be helpful for market research and developing marketing strategies. What do you think?
3. API parks will produce the raw materials and reduce cost and price of medicines. What is your opinion?
4. Do you think the access and interaction of MRs with doctors without following code of ethics is making them lose the trust of public?
5. Health insurance policies can help patients' affordability of cardiac treatment.
6. New drug policy 2016 will assure the transparency of all transaction regarding medicine quality and pricing.
7. Patients can influence doctors to prescribe medicines of their choice through internet information and company reputation. What is your opinion?

iv. Questions for patients

1. What do you think about efficacy of cardiac medicines for your treatment?
2. What safety information do you get from the company in medicine package?
3. What information retailer gives you if you do not get prescribed medicines?
4. Will you purchase medicine of other company? Why?
5. Do you think reputation of the company influences on your purchasing?
6. Do you think the price of the medicines is affordable according to your income?
7. Brand names of medicines influence you to buy medicine. What is your opinion?

8. The location of retail pharmacies near your residence influences you to buy prescribed medicines to reduce your transportation cost.
9. Facilities of the recent concept of model pharmacies have impacted on your purchasing decision to purchase from model pharmacies than from retail pharmacies.
10. Do you think pharmaceutical companies provide awareness campaign to prevent causes of cardiac disease?
11. Do you think government rules and regulation is effective to reduce price of the medicine?
12. Do the pharmaceutical companies communicate with you about the outcome of medicine?
13. Do you get health insurance support for the treatment of cardiac disease from your employers and government?
14. Do you request doctors to prescribe medicines of your choice through internet information about cardiac medicines and company reputation?

APPENDIX B (Final Questionnaires)

i. Questionnaire for Doctors

a) Demographic information

1. Gender: 2. Age: 3. Academic Qualification:
4. Years of Experience dealing with cardiac medicines: 5. Designation:

b) Scale based Questionnaire: Please put tick (✓) marks against each statement to evaluate the impact of Marketing Strategies and Techniques of Bangladeshi Pharmaceutical companies on your satisfaction to prescribe the cardiac medicines.

[1. Strongly disagree , 2. Disagree, 3. Neutral, 4. Agree, 5. Strongly agree]

Statement	1	2	3	4	5
1. Efficacy of cardiac medicine is an important factor for your satisfaction.	1	2	3	4	5
2. Brand Image matters for selection of cardiac medicines on your prescription.	1	2	3	4	5
3. Safety Information about cardiac medicines supplied by the company is a key factor for your satisfaction.	1	2	3	4	5
4. Company reputation impacts your satisfaction.	1	2	3	4	5
5. New cardiac medicines are more acceptable than older ones.	1	2	3	4	5
6. Pricing is reflected in quality of cardiac medicines.	1	2	3	4	5
7. Competitors' pricing of cardiac medicines have an effect on your prescription.	1	2	3	4	5
8. Availability of cardiac medicines by company's distributors is important for your satisfaction.	1	2	3	4	5
9. Location of Retail pharmacy store is an imperative factor for your satisfaction to prescribe.	1	2	3	4	5

10. Facilities of Model Pharmacy effect on your prescribing decision.	1	2	3	4	5
11. Selling Skill of Medical Representatives impacts on your satisfaction to prescribe.	1	2	3	4	5
12. Continuous Medical Education program like seminar/conference about cardiac medicines is important factor for your satisfaction.	1	2	3	4	5
13. Awareness campaign to prevent cardiac disease by the company is an imperative factor for your satisfaction.	1	2	3	4	5
14. Promotional policies of companies impact your prescription of cardiac medicines.	1	2	3	4	5
15. Overall perception about product, price, place and promotional strategies of cardiac medicine suppliers is highly satisfactory.	1	2	3	4	5

ii. Questionnaire for Marketing Professionals**a) Demographic Information**

1. Gender: 2. Age: 3. Academic Qualification:
 4. Designation: 5. Years of Experience dealing with cardiac drugs:

b. Scale based Information: Please put tick (✓) marks against each statement to evaluate the impact of Marketing Strategies and Techniques of your company on your satisfaction about sales performance.

[1. Strongly disagree, 2. Disagree, 3. Neutral, 4. Agree, 5. Strongly agree]

Statement	1	2	3	4	5
1. Efficacy of cardiac medicine is an important factor for your satisfaction about sales.	1	2	3	4	5
2. Brand Image matters for selection of cardiac medicines on doctor's prescription for selling.	1	2	3	4	5
3. Safety Information about cardiac medicines supplied by the company is a key factor for your satisfaction about sales performance.	1	2	3	4	5
4. Company Reputation impacts your satisfaction about sales.	1	2	3	4	5
5. New cardiac medicines are more acceptable than older ones that influence sales.	1	2	3	4	5
6. Pricing is reflected in quality of cardiac medicines which impact on sales.	1	2	3	4	5
7. Availability of cardiac medicines is important for your satisfaction about sales.	1	2	3	4	5

8. Location of Retail pharmacy store is an imperative factor for your satisfaction to sell the cardiac medicines.	1	2	3	4	5
9. Facilities of Model Pharmacy effect on your satisfaction about sales.	1	2	3	4	5
10. Selling Skill of Medical Representatives impacts on your satisfaction to sell the cardiac medicines.	1	2	3	4	5
11. Continuous Medical Education program like seminar/conference for doctors about cardiac medicines is important factor for your satisfaction about sales.	1	2	3	4	5
12. Awareness campaign to prevent cardiac disease by the company is an imperative factor for your satisfaction about sales	1	2	3	4	5
13. Promotional Policies of company impact doctors' prescription of cardiac medicines for sales.	1	2	3	4	5
14. Overall Product, Price, Place and Promotional Strategies for cardiac medicine of your company is highly satisfactory for sales.	1	2	3	4	5

c) General Information: Please tick (✓) according to your practice in the organization.

1. Which approach sets the Marketing Strategies in your Organization?
 - Top- down approach (Top company executives design the marketing strategies and communicate directly to sales force)
 - Bottom-up approach (Skilled marketing and sales managers design marketing strategies for everyone to follow)
 - Both Top-Down and Bottom Up approaches
 - Other, Please Specify
2. What are your Marketing Strategies?
 - To be a Market share leader
 - To penetrate the market
 - To achieve product Branding

- Other, please specify

3. What are your Marketing techniques?

- To prepare efficient Sales force
- To provide Continuous Medical Information on medicines by seminar/ conference
- To create Cardiac Disease Awareness Campaign among customers
- Other, please specify

4. What are your objectives?

- To be a Top Five National companies in Cardiac Market
- To be a cardiac market leader in Bangladesh
- To adjust with competitors' marketing mix activities plan
- Other, please specify

5. Please rate (1-5) the following attributes of 4Ps strategies of your company according to your satisfaction.

(1=Very Dissatisfied, 2=Dissatisfied, 3= Neutral, 4= Satisfied and 5= Very Satisfied)

() Quality () Affordability () Availability () Communication
method

iii. Survey Questionnaire for Patients

Thank you for your opinions on the quality, price, availability and promotion of cardiovascular medicines provided by Pharmaceutical companies in our healthcare service. Your time and effort will contribute to the present research.

1. Male Female
2. Age: 20-24, 25-30, 31-35, 36-40, 41-50, 51-Above
3. Educational Qualification: S.S.C. H.S.C. Graduate Others, Write.....
4. How many years are you taking medication for high blood pressure and cardiovascular diseases 2-3 4-7 8-Above
5. Which companies do you buy your cardiac medicines from?
6. Where does your doctor prescribe the medicines? Government Hospital
 Private Hospital

7. Please put tick (✓) marks against each statement to evaluate the impact of Marketing Strategies and Techniques of the Pharmaceutical companies on your satisfaction to purchase the cardiac medicines.

[1. Strongly disagree, 2. Disagree, 3. Neutral, 4. Agree, 5. Strongly agree]

7.1	You are satisfied with the efficacy of the cardiac medicines	1	2	3	4	5
7.2	Brand Image effects your satisfaction to purchase medicines	1	2	3	4	5
7.3	The company provides adequate Safety Information of the cardiac medicines that impact on your satisfaction	1	2	3	4	5
7.4	Company Reputation influences your satisfaction on purchasing decisions	1	2	3	4	5
7.5	You prefer new medicines over old medicines if it is prescribed by your doctor	1	2	3	4	5
7.6	The price of the cardiac medicines reflects quality that satisfy you	1	2	3	4	5

7.7	Doctors take into account the competitive price that are affordable for your satisfaction	1	2	3	4	5
7.8	The doctor's prescribed medicine is easily available that impact on your satisfaction	1	2	3	4	5
7.9	Location of pharmacy stores are near residential areas that satisfy you	1	2	3	4	5
7.10	Medical Representatives communicate with you to promote the benefits of the medicines for your satisfaction.	1	2	3	4	5
7.11	The Pharmaceutical company arrange awareness campaign to prevent cardiac disease that impact on your satisfaction	1	2	3	4	5
7.12	Quality, Price, Availability and Promotion of the medicines of the Pharmaceutical company are satisfactory.	1	2	3	4	5

8. Please tick (1-5) in the following variables of facilities for selecting Model Pharmacies instead of conventional retail pharmacies according to your level of satisfaction. 1=Very Dissatisfied, 2=Dissatisfied, 3= Neutral, 4= Satisfied & 5= Very satisfied

Variables	Very Dissatisfied 1	Dissatisfied 2	Neutral 3	Satisfied 4	Very satisfied 5
Proper Location					
Quality Medicines					
Modern environment					
Counseling by A grade pharmacist					
Variety of stock					
Data based system					
Reasonable price					

APPENDIX C**i. Reliability Testing (Stakeholders).**

Cronbach's Alpha	N of Items
0.827	14

ii. Reliability Testing (Doctors)

Cronbach's alpha	Number of items
0.83	14

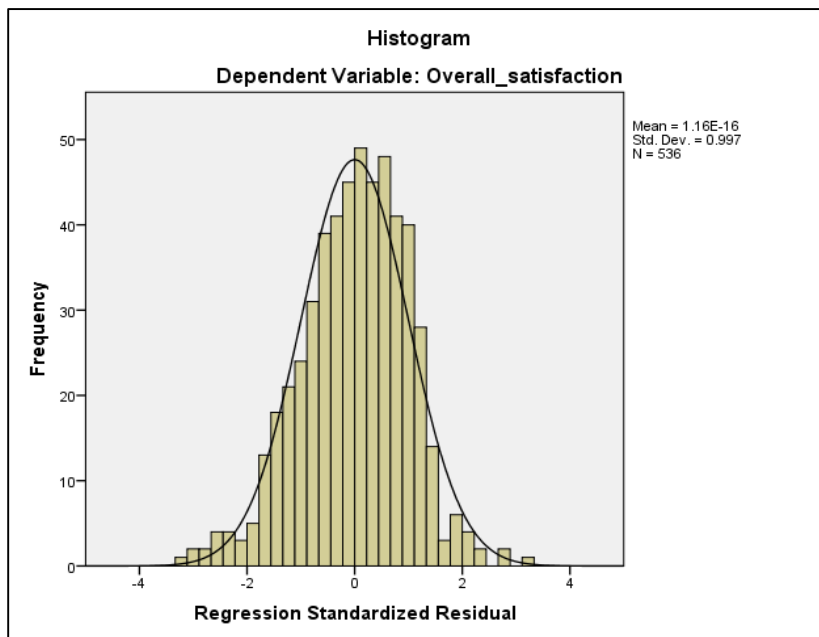
iii. Reliability Test (Marketing Professionals' Satisfaction):

Cronbach's alpha	N of items
0.733	13

iv. Reliability Testing(Patients)

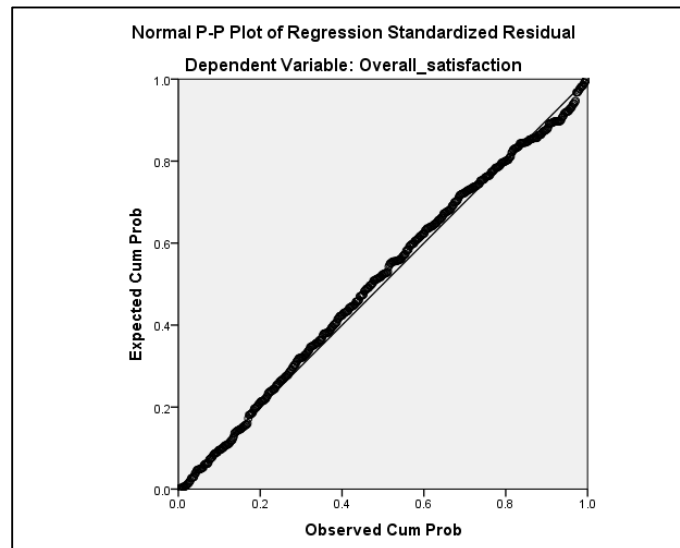
Cronbach's alpha	N of items
0.67	11

v. Normality of Regression Residual

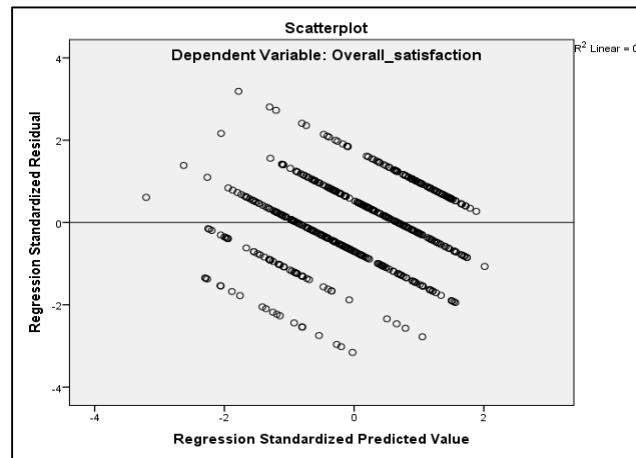


The standardized residual of regression model is approximately bell shaped/normally distributed implies good fit of the model

vi. Normal P-P plot of Regression Standardized Residual



Normal P-P plot of standardized residual also suggest normality of model residual since all points lie on a diagonal straight line (Figure 4.3)

vii. Scatter Plot

The scatter plot of standardized predicted value versus standardized residual shows no systematic pattern indicates that residual variance is homoscedastic (Figure 4.4)

Appendix D: Process Flow Chart of PhD Activities (Year 2015-2020)

