
The Role of Special Libraries for Building Knowledge-based Economy in Bangladesh

by

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A thesis submitted to the University of Dhaka in partial fulfillment of the requirements for the degree of Master of Philosophy

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Supervisor's Certificate

This is to certify that the research project was prepared under my direct supervision. Thesis entitled ***The Role of Special Libraries for Building Knowledge-based Economy in Bangladesh*** represents the original research work of the student.

I hereby confirm that this thesis is sufficient in terms of scope and quality for the award of the degree of Masters of Philosophy in Information Science and Library Management at University of Dhaka.

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Declaration

I hereby declare that the research study titled ***The Role of Special Libraries for Building Knowledge-based Economy in Bangladesh*** submitted by me is based on my actual and original work. Any reference to work done by any other person or institution or any material obtained from other sources have been properly cited and referenced and the collaborative contributions have been indicated clearly and acknowledged.

I further certify that the research work has not been published or submitted for any other degree or professional qualification. It does not infringe on the right of others and does not contain any unlawful statements.

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Dedication

To my dear parents, brother and sisters,
my beloved husband and
my angel 'Mitin'

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Table of Contents

| | |
|--|-------------|
| Supervisor’s Certificate | i |
| Declaration | ii |
| Dedication | iii |
| Acknowledgements | iv |
| Table of Contents | v |
| List of Figures | xiii |
| List of Tables | xv |
| List of Acronyms and their elaborations | xvi |
| Abstract | xviii |
| Chapter 1: Introduction | 1-25 |
| 1.1 Background of the study | 2 |
| 1.2 Statement of problem | 4 |
| 1.3 Objectives of the research | 5 |
| 1.4 Research questions | 6 |
| 1.5 Significance of the study | 6 |
| 1.6 Research design and methodology | 8 |
| 1.6.1 Face-to-face and telephonic interview | 10 |
| 1.7 Data collection techniques | 11 |
| 1.8 Research sampling | 11 |
| 1.8.1 Interviews with the respondents’ of special libraries | 12 |
| 1.8.2 Distribution of gender of the respondents | 13 |
| 1.8.3 Education level of the respondents | 14 |
| 1.8.4 Geographic distribution of the respondents | 15 |
| 1.8.5 Total respective organizations | 16 |
| 1.8.6 The percentages of different special libraries | 18 |
| 1.8.7 Respondents’ current roles in the respective organizations | 18 |
| 1.9 Data analysis methods | 20 |
| 1.10 Definition of research terms in this study | 20 |
| 1.11 Structure of the thesis | 23 |

| | |
|---|--------------|
| Chapter 2: Literature Review | 26-51 |
| 2.1 Introduction | 27 |
| 2.2 Concept of knowledge economy (KE) | 27 |
| 2.3 Data, information, knowledge, wisdom and their relationships | 28 |
| 2.4 Types of knowledge | 29 |
| 2.5 Intellectual capital (IC)/ human capital (HC) | 30 |
| 2.6 Understanding KM and organization learning | 32 |
| 2.7 Understanding KE and KBE | 34 |
| 2.8 KBE in the world | 37 |
| 2.9 KS and KBE | 43 |
| 2.10 Review of building KBE: perspective Bangladesh | 45 |
| 2.11 Building KBE: review of the role of libraries and IPs | 47 |
| 2.12 Review of KS initiatives in the libraries | 50 |
| 2.13 Chapter summary | 50 |
| Chapter 3: Perceptions of the IPs in Special Libraries regarding KBE in Bangladesh | 52-80 |
| 3.1 Introduction | 53 |
| 3.2 Data collection techniques | 53 |
| 3.3 Data analysis methods | 53 |
| 3.4 Respondents' understandings on KBE | 54 |
| 3.4.1 Knowledge working as a capital for the economic growth and development | 54 |
| 3.4.2 Process to overcome the problems and improve the productivity growth in the future | 56 |
| 3.4.3 KBE based on IC to develop organizational economy | 56 |
| 3.4.4 Creates an opportunity to encourage from national economy to international level | 57 |
| 3.4.5 Highly skilled people working as HC for the economic growth and development | 57 |

| | |
|---|----|
| 3.4.6 Based on entrepreneurship, innovation, R&D, education and skills for growth and competitiveness in the global economy | 58 |
| 3.4.7 Improves competitiveness of science & technology, research and innovation for social development and creation of wealth | 59 |
| 3.4.8 The World Bank's K4D program based on four pillars | 59 |
| 3.5 Respondents' perceptions on KBE | 60 |
| 3.5.1 New phenomenon for the IPs of special libraries | 60 |
| 3.5.2 Difficult to understand for the IPs of special libraries | 61 |
| 3.5.3 Promoting professional capacity for LIS professional | 61 |
| 3.5.4 Including KBE in the LIS curriculum | 61 |
| 3.5.5 Special Libraries' role for building KBE in Bangladesh | 62 |
| 3.6 Building KBE in Bangladesh | 62 |
| 3.6.1 Enhance the part of government to help and empower KBE | 63 |
| 3.6.2 Develop political stability for better control and combating corruption | 63 |
| 3.6.3 Include more in global economic system | 64 |
| 3.6.4 Improve efficiency or quality of the labor force | 64 |
| 3.6.5 Increase HC for an advanced Bangladesh | 66 |
| 3.6.6 Grow public-private associations | 66 |
| 3.6.7 Improve quality of education | 67 |
| 3.6.8 Develop education for more lifelong learning | 67 |
| 3.6.9 Increase education system for better employment opportunity | 68 |
| 3.6.10 Build-up world-class universities and focuses in R & D with innovative work | 68 |
| 3.6.11 Understand the potential of innovation in the service sector | 69 |
| 3.6.12 Nurture "innovative entrepreneurs" | 69 |
| 3.6.13 Increase investment for innovation | 69 |
| 3.6.14 Move from speculation-driven economy to innovation-driven Economy | 70 |
| 3.6.15 Put resources into science and innovation for ability improvement | 70 |
| 3.6.16 Set-up progress ICT foundation for better access | 70 |
| 3.6.17 Ensure general, moderate and fast broadband | 71 |

| | |
|---|----|
| 3.6.18 Create gainful plans of action to scale up ICT-based applications | 71 |
| 3.6.19 Advance e-government and public sector reform | 72 |
| 3.7 The IPs functional roles of special libraries to accelerate KBE in Bangladesh | 72 |
| 3.7.1 Meet information needs to achieve the mission and goals of the organization | 73 |
| 3.7.2 Preserve information to facilitate accurate decision making | 74 |
| 3.7.3 Provide the right information to the right people at the right time | 74 |
| 3.7.4 Develop knowledge creation and innovation | 75 |
| 3.7.5 Provide training to improve efficiency of the user | 75 |
| 3.7.6 Build a dynamic and digitized collection of information resources | 75 |
| 3.7.7 Promote media and digital literacy in the organization | 76 |
| 3.7.8 Analyze, interpret and use the information | 76 |
| 3.7.9 Compete intelligence and market research for business development | 76 |
| 3.7.10 Support for R&D | 77 |
| 3.8 Desired modern and expanded roles of special librarian or the IPs for KBE | 77 |
| 3.9 Chapter summary | 79 |

Chapter 4: Skills and competencies needed in special libraries for building KBE **81-118**

| | |
|--|----|
| 4.1 Introduction | 82 |
| 4.2 Data collection techniques | 82 |
| 4.3 Data analysis methods | 83 |
| 4.4 Key skills and competencies needed for the IPs of special libraries | 84 |
| 4.5 Qualities of the IPs in the KE era | 86 |
| 4.5.1 Communicate both orally and in writing | 86 |
| 4.5.2 Provide strong level of customer services | 87 |
| 4.5.3 Adapt to new tools, systems, and situations | 88 |
| 4.5.4 Work as a strong team player maintaining effective working relationships | 88 |
| 4.5.5 Overcome issues by focusing on solutions instead of on the problems | 89 |
| 4.5.6 Understand the importance of IT and flows of Information | 89 |

| | |
|--|-----|
| 4.5.7 Manage the environment, physical and digital assets | 90 |
| 4.5.8 Involve in knowledge creation and innovation | 91 |
| 4.5.9 Exercise new initiative and work independently | 92 |
| 4.5.10 Find information quickly using online catalog, digital resources and databases | 92 |
| 4.5.11 Identify and evaluate information services, sources and products | 92 |
| 4.5.12 Integrated and widespread ICT applications | 93 |
| 4.6 Characteristics or attributes on hiring to accelerate KBE | 93 |
| 4.6.1 Applicants' educational qualifications | 93 |
| 4.6.2 Applicants' attitude & manner | 94 |
| 4.6.3 Applicants' communication skills | 94 |
| 4.6.4 Previous employer references | 95 |
| 4.6.5 Previous work experiences | 95 |
| 4.6.6 Academic performance | 96 |
| 4.6.7 Recommendations | 96 |
| 4.6.8 ICT skills | 97 |
| 4.6.9 Analytical knowledge | 97 |
| 4.6.10 Information management skills | 97 |
| 4.7 The number of professionals worked in the respective special libraries | 98 |
| 4.8 Barriers for the IPs to accelerate KBE in Bangladesh | 99 |
| 4.9 Different ways to develop skills | 101 |
| 4.9.1 ICT Training and knowledge | 102 |
| 4.9.2 Higher Education | 103 |
| 4.9.3 English proficiency training or courses | 103 |
| 4.9.4 Innovation | 103 |
| 4.9.5 R&D | 104 |
| 4.9.6 Attend workshops, seminars, symposium with follow-up and relevant courses | 104 |
| 4.9.7 Visiting different libraries and information centers | 105 |
| 4.9.8 Adequate training, entrepreneurship and KS | 105 |

| | |
|---|----------------|
| 4.9.9 Gather subject and economic knowledge as well as Knowledge-based training | 106 |
| 4.10 Recommended skills and competencies for the students of LIS education | 107 |
| 4.10.1 Communication skills | 108 |
| 4.10.2 ICT skills with practical experiences | 109 |
| 4.10.3 Experiences on library management databases and e-resources | 109 |
| 4.10.4 Behavior skills, attitudes, manners and etiquette and motivation | 110 |
| 4.10.5 Higher education and research methodology | 110 |
| 4.10.6 Creative and innovation skills | 111 |
| 4.10.7 Subject knowledge and continued learning | 111 |
| 4.10.8 Visit libraries and information centers | 111 |
| 4.10.9 Internship | 112 |
| 4.10.10 Classification, cataloguing and indexing skills | 112 |
| 4.11 Respondents' responses regarding special libraries play a significant role for building KBE in Bangladesh | 113 |
| 4.12 Respondents' recommended opportunities regards the IPs role could be more effective to develop KBE in Bangladesh | 113 |
| 4.12.1 Special libraries can arrange training, workshops, and seminar and orientation program | 113 |
| 4.12.2 ICT-knowledge and relevant software operating skills | 114 |
| 4.12.3 Overcome the challenges | 114 |
| 4.12.4 Innovation and innovation project in the special library | 115 |
| 4.12.5 KM and economic oriented knowledge | 115 |
| 4.12.6 Create awareness, clear concept and understanding about KBE | 116 |
| 4.12.8 More desired and expanded roles of the IPs | 116 |
| 4.12.9 Female library professional participation and development | 117 |
| 4.13 Chapter summary | 117 |
| Chapter 5: State-of-the art of initiatives taken to KS activities for KBE in Bangladesh | 119-137 |
| 5.1 Introduction | 120 |

| | |
|---|-----|
| 5.2 Data collection techniques | 120 |
| 5.3 Data analysis methods | 121 |
| 5.4 Respondents' perceptions of sharing knowledge in the organization | 121 |
| 5.4.1 Facilitates knowledge creation, storage, retrieval and transfer | 121 |
| 5.4.2 Accomplishes development of tasks | 123 |
| 5.4.3 Improves job performance | 123 |
| 5.4.4 Speeds decision making | 124 |
| 5.4.5 Increases performance management | 124 |
| 5.4.6 Ensures transparency and accountability of the work | 125 |
| 5.4.7 Provides training and development for the colleagues | 125 |
| 5.4.8 Enhances team member knowledge | 125 |
| 5.4.9 Develops personal interaction with the colleagues | 126 |
| 5.4.10 Increases job effectiveness | 126 |
| 5.4.11 Improves creativity or innovation | 127 |
| 5.5 Challenges in sharing knowledge in the organizations | 127 |
| 5.5.1 Lack of immediate response by the colleagues to share information | 127 |
| 5.5.2 Lack of trust of sharing knowledge | 128 |
| 5.5.3 Lack of proper IT platform to share | 129 |
| 5.5.4 Lack of organizational guidelines on sharing | 129 |
| 5.5.5 Lack of encouragement of the IPs to initiate ideas | 129 |
| 5.5.6 There is no reward system for KS in the organization | 130 |
| 5.5.7 Lack of initiative for collaboration in the institutions | 130 |
| 5.5.8 Lack of international-mindedness | 131 |
| 5.6 Different ways to share knowledge in the respective organization | 131 |
| 5.7 KS activities play vital role to develop organizational economy | 132 |
| 5.7.1 KS embeds in the organization's vision and strategy | 132 |
| 5.7.2 KS increases effectiveness and sustainability of service | 133 |
| 5.7.3 KS builds success to improve livelihoods and shared prosperity | 133 |
| 5.7.4 KS solves operational problems by continually evaluating | 134 |
| 5.7.5 KS improves organizational performance in the core business | 135 |
| 5.7.6 KS implements and encourages more innovations | 135 |

| | |
|--|----------------|
| 5.7.7 KS provides a clear communicable plan to go and how to get there | 135 |
| 5.7.8 KS increases awareness and understanding across the organization | 136 |
| 5.8 Chapter summary | 136 |
| Chapter 6: Conclusion | 138-153 |
| 6.1 Introduction | 139 |
| 6.2 Answers to research questions | 139 |
| 6.3 Practical implications of the research | 149 |
| 6.3.1 Implications of the IPs of special Libraries | 149 |
| 6.3.2 Implications for LIS education and professionals | 150 |
| 6.3.3 Implications of LIS students | 150 |
| 6.4 Research limitations | 151 |
| 6.5 Directions for further research | 151 |
| 6.6 Chapter summary | 152 |
| References | 154-192 |
| Appendices | 193-200 |
| Appendix A: Questionnaire on 'The Role of Special Libraries for Building Knowledge-based Economy in Bangladesh | 193-199 |
| Appendix B: Letter of Permission | 200 |

List of Figures

| | |
|--|----|
| Figure 1.1: The research design in this study | 9 |
| Figure 1.2: Distribution of interviews with the respondents | 13 |
| Figure 1.3: Distribution of gender of the respondents | 14 |
| Figure 1.4: Respondents levels of education | 15 |
| Figure 1.5: Geographic distribution of the respondents in Bangladesh | 16 |
| Figure 1.6: The percentages of different special libraries included for this study | 18 |
| Figure 1.7: Respondents' current role in the respective special libraries of Bangladesh | 19 |
| Figure 1.8: The structure of the thesis | 24 |
| Figure 2.1: The big data Maslow's pyramid. (Source: Popescu, 2011) | 29 |
| Figure 2.2: What is knowledge management (KM). (Source: Riders, 2011) | 30 |
| Figure 2.3: Intellectual capital: The intangible assets of a modern organization. (Source: Stewart, 2011) | 31 |
| Figure 2.4: Using modeling in intellectual capital. (Source: Nahas, 2016) | 32 |
| Figure 2.5: Content management in a knowledge management context. (Source: Prescient Digital Media, 2012) | 33 |
| Figure 2.6: Knowledge economy: characteristics and dimensions. (Source: Hadad, 2017, p. 204) | 34 |
| Figure 2.7: Management of knowledge acquisition from human sources in innovation transfer. (Source: Zwiefka, 2012, p. 42) | 35 |
| Figure 2.8: Managing national innovation systems (Source: OECD, 1999, p. 23) | 36 |
| Figure 2.9: Towards knowledge-based economy: modelling knowledge expression assessment. (Source: Daugélienė, 2004) | 38 |
| Figure 2.10: Peculiarities of knowledge-based economy assessment: theoretical approach. (Source: Daugeliene, 2004) | 39 |
| Figure 2.11: Knowledge for development (K4D): The world bank institute's program on building knowledge economies. (Source: The World Bank, 2007, p. 5) | 41 |
| Figure 2.12: The World Bank: knowledge economy index (KEI). (Source: The World Bank, 2012) | 42 |

| | |
|--|-----|
| Figure 2.13: Moving toward knowledge-based economies: Asian experiences. (Source: Asian Development Bank, 2007. P.7) | 43 |
| Figure 2.14: Knowledge sharing: assessment of factors affecting employee' motivation and behavior in the Lebanese organizations. (Source: Hejase et al., 2014, p. 1562) | 44 |
| Figure 2.15: Becoming a knowledge sharing organization. (Sources: Janus, 2016, p.7) | 45 |
| Figure 2.16: Comparative science, technology, and innovation systems in developing-country agriculture what can we measure and what can we not? (Source: Spielman, 2013) | 46 |
| Figure 2.17: Competency frameworks. (Source: Parker & Lobo, 2011) | 49 |
| Figure 3.1: Desired expanded modern roles for the IPs of special libraries to contribute KBE | 78 |
| Figure 4.1: Key skills and competencies needed for the IPs of special libraries | 85 |
| Figure 4.2: Professionals working in the respective special libraries of Bangladesh | 99 |
| Figure 4.3: Barriers for the IPs of special libraries to accelerate KBE | 100 |
| Figure 5.1: Different ways of sharing knowledge in the respective organization | 132 |

List of Tables

| | |
|---|-----|
| Table 1.1: Distribution of questionnaires | 12 |
| Table 1.2 List of total respective organizations | 17 |
| Table 3.1: Respondents' levels of agreements based on KBE | 55 |
| Table 3.2: Respondents' perceptions on KBE | 60 |
| Table 3.3: Respondents' opinions on building KBE in Bangladesh | 65 |
| Table 3.4: The IPs functional roles in special libraries to accelerate KBE | 73 |
| Table 4.1: Expected qualities of the IPs in the KE era | 87 |
| Table 4.2: Expected characteristics or attributes among the IPs on hiring | 94 |
| Table 5.1 Respondents' perceptions on sharing knowledge in their respective organization | 122 |
| Table 5.2 Challenges in sharing information for the IPs in the organization | 128 |
| Table 5.3: KS play a vital role to develop organizational economy | 134 |

List of Acronyms

| <u>Acronyms</u> | <u>Elaborations</u> |
|------------------------|--|
| AERE | : Atomic Energy Research Establishment |
| ADB | : Asian Development Bank |
| AERE | : Atomic Energy Research Establishment |
| ABS | : Australian Bureau of Statistics |
| ADB | : Asian Development Bank |
| APEC | : Asia-Pacific Economic Cooperation |
| BCSIR | : Bangladesh Council of Scientific & Industrial Research |
| BARD | : Bangladesh Academy for Rural Development |
| BANSDOC | : Bangladesh National Scientific Technical Documentation Center |
| BAEC | : Bangladesh Atomic Energy Commission |
| BARI | : Bangladesh Agricultural Research Institute |
| BARC | : Bangladesh Agricultural Research Council |
| BANSDOC | : Bangladesh National Scientific Technical Documentation Center |
| BARI | : Bangladesh Agricultural Research Institute |
| BARC | : Bangladesh Agricultural Research Council |
| CPD | : Centre for Policy Dialogue |
| CIRDAP | : Centre on Integrated Rural Development for Asia and the Pacific |
| CIO | : Chief Information Officers |
| GDP | : Gross Domestic Product |
| HC | : Human Capital |
| ICT | : Information and Communication Technology |
| IC | : Intellectual Capital |
| IELTS | : International English Language Testing System |
| ICDDR | : International Centre for Diarrhoeal Disease Research, Bangladesh |
| IPs | : Information Professionals |
| KE | : Knowledge Economy |
| KBE | : Knowledge-Based Economy |
| KM | : Knowledge Management |

| | |
|---------|--|
| KS | : Knowledge Sharing |
| KEI | : Knowledge Economy Index |
| KI | : Knowledge Index |
| K4D | : The Knowledge for Development |
| KAM | : The Knowledge Assessment Methodology |
| LIS | : Library and Information Science |
| MRQ | : Major Research Question |
| M.Phil. | : Master of Philosophy |
| NSI | : National System of Innovation |
| NGO | : Non-Government organization |
| OECD | : The Organisation for Economic Co-operation and Development |
| PKSF | : Palli Karma-Sahayak Foundation |
| PIB | : Press Institute Bangladesh |
| Ph.D. | : Doctor of Philosophy |
| PTE | : Pearson Test of English |
| PPPs | : Public Private Partnerships |
| R & D | : Research and Development |
| SRQs | : Subsidiary Research Questions |
| SPSS | : Statistical Package for the Social Sciences |
| S & T | : Science and Technology |
| STEM | : Science, Technology, Engineering, and Mathematics |
| TOEFL | : Test of English as a Foreign Language |
| USAID | : United States Agency for International Development |
| UNICEF | : The United Nations Children's Fund |
| UNECE | : United Nations Economic Commission for Europe |

Abstract

The study examines the role of special libraries for building knowledge-based economy (KBE) in Bangladesh. To ascertain the current scenario of the role of special libraries to build KBE, the study explores the perceptions of information professionals (IPs) of special libraries regarding KBE in Bangladesh. This study also identifies the key skills and competencies that are needed for the IPs of special libraries for successfully contributing KBE in Bangladesh. Furthermore, this study expands from the traditional role of IPs of special libraries to modern role in the knowledge economy (KE) era, including Library and Information Science (LIS) professionals, with greater opportunities for building KBE in Bangladesh. In addition, it also finds out the initiatives taken to facilitate knowledge sharing (KS) activities for KBE in Bangladesh.

The review of literatures reveals that Bangladesh is moving to knowledge-based country; and the country has a bigger plan to make a 'Digital Bangladesh' by 2021. Many scholars and international reports have investigated about how KBE can be established in Bangladesh from different perspectives. Furthermore, many authors and librarians internationally show how libraries and IPs are connected to build KBE in the country. Special libraries are significantly changing rather than other libraries in Bangladesh. Moreover, the roles of special librarian or IPs of special libraries are changing rapidly, because of the user demand of modern information services using digital technology, digital applications in the organization. Therefore, there is a substantial gap in the literature to explore the scenario of the role of special libraries for building KBE in Bangladesh.

To achieve research objectives of the study, we employed survey method in an inductive approach using a structured questionnaire consisting of open and closed-ended questions. Face-to-face and telephonic interview techniques were used as the instrument of data collection. The research design was a mixed method approach that is a combination of qualitative and quantitative approaches. We used the descriptive analysis techniques of Statistical Package for the Social Sciences (SPSS) 25.0 to analyze data and compare the mean and standard deviations. Microsoft excels was also used to represent the data graphically.

We selected different special libraries of Bangladesh based on their involvement in knowledge management (KM), and KBE as well as modern library and information services, and skilled and experienced professionals with modern technology and digital applications in Bangladesh. This study has been carried out with thirty-nine (39) respondents who are working in the different special libraries as an IP in diverse positions in Bangladesh took part as the respondents.

This study also indicates that perceptions of IPs of special libraries and key skills and competencies that are needed for the IPs to involve KBE in Bangladesh. Moreover, it also reveals that IPs of special libraries including LIS professionals, their traditional role to modern role, with greater opportunities for building KBE in Bangladesh. Furthermore, it also investigates the present scenario of KS activities for KBE in Bangladesh.

This study also shows the practical implications of the research for the IPs of special libraries, LIS education and professionals, and LIS students. The current study provides guidelines and recommendations for further research to investigate another research including all special libraries of Bangladesh with adequate time and sufficient fund. In addition, further research project may be undertaken covering all libraries as well as all LIS professionals, LIS students, and KM experts in LIS education to explore the potentialities and massive contributions of LIS professional for converting Bangladesh into knowledge-based society and her economy will be knowledge-based economy.

Keywords: Knowledge Economy; Knowledge-based Economy; Knowledge Management; KBE Indicators; Special Library; Perceptions of Information Professionals; Skills and Competencies of Information Professionals; Knowledge Sharing; National System of Innovation.

Chapter 1

Introduction

1.1 Background of the study

In the last couple of decades, many countries have made significant economic gains by knowledge creation and diffusion to the various sectors of the economy. The term 'Knowledge Economy' (KE) refers either to an economy of knowledge or to a 'Knowledge-Based Economy' (KBE) focuses on the production and management of knowledge within the framework of economic constraints (Qamruzzaman & Ferdous, 2014). KBE had been introduced first by the Organisation for Economic Co-operation and Development (OECD). OECD (1996) stated that the term "knowledge-based economy" stems from the fuller recognition of the place of knowledge and technology in modern OECD economies. The importance of knowledge and technology diffusion requires better understanding of knowledge networks and "national innovation systems" and the implications of KBE for employment and the role of governments in the development and maintenance of the knowledge-base. Powell & Snellman (2004) defined that KE as production and services based on knowledge-intensive activities that contribute to an accelerated pace of technical and scientific advance, as well as rapid obsolescence. The key component of a KE is a greater reliance on intellectual capabilities than on physical inputs or natural resources. There is an argument that whether KE and KBE are the same or not. Cooke & Leydesdorff (2006) stated that KE and KBE are common terms now-a-days and those are often used synonymously. However, this does not settle the question of whether or not the two expressions actually mean the same thing. KE is the older of the two concepts, with its origins in the 1950s. It focused mainly on the composition of the labor force. The term KBE has added the structural aspects of technological trajectories and regimes from a system perspective.

The identification, understanding and development of knowledge capital are vital to compete within international markets and the knowledge economy (Keogh, Mulvie & Cooper, 2005). In KBE, knowledge is working as a capital for economic growth and development. Moreover, intellectual capital (IC) has become the buzzword of a KBE and is the ultimate source of competitive advantage (Kostagiolas, & Asonitis, 2011). IC is a prime value driver in today's KBE (Marr, 2004). KBE also based on entrepreneurship, innovation, research and development (R&D), education and skills for creation of wealth and economic

Chapter 1: Introduction

development for the country. Moreover, KBE will help to move Bangladesh developing to developed countries in the world in future.

The knowledge age has created a new context and challenges for different organizations and professional groups. Understanding the forces and trends that are shaping the future of the knowledge territory is very important for librarians (Materska, 2004). The libraries, librarians and information professionals (IPs) are playing a vital role for developing KBE. There are a wide-range of existing literatures that showed how Library and Information Science (LIS) professionals are connected to build KE and KBE in the country (Saarti, Laitinen & Vattulainen, 2017; Michael-Nolin, 2013; Maponya, 2005). It has been discussed more in the literature review section of this study. This study shows why KBE is important for the development of a country and how KBE can be established in Bangladesh. The primary main aim of this study is to examine the role of special libraries for building KBE in Bangladesh. Therefore; the study explores the understanding and perception of the IPs regarding KBE in Bangladesh. The study also shows improving in certain areas including innovation, education, and information and communication technology (ICT), political economy, innovative entrepreneur, and government help and initiatives for building KBE in Bangladesh. Hence, the study shows from traditional role to the desired modern and expanded role for the information professionals (IPs) of special libraries in this KE. In addition, the key skills, competencies or advanced skills that are necessary for the IPs of special libraries to contribute KBE in Bangladesh. Besides, the study indicates the expected qualities for the IPs of special libraries in the KE era.

Moreover, the study reveals the characteristics and attributes is important on hiring among the IPs of special libraries as a resource person for building KBE. It also investigates whether LIS professionals are working in the special libraries or not in Bangladesh. This study also examines the IPs of special libraries have any barrier to contribute in KBE. On the other hand, sharing knowledge is the most important part for building KBE; therefore, the study investigates the perceptions on sharing knowledge in the organization. Moreover, it also finds the challenges in sharing knowledge between the organizations. The study also reveals the different ways to share knowledge in the organization.

1.2 Statement of problem

KBE is the most important aspect to move Bangladesh forward with the developed countries. A body of literatures was based on building KBE in the different countries (Lung Ka-Lun, 2012; Ahmed & Al-Roubaie, 2012; Satti Osman Mohamed Nour, 2014). Moreover, ICT, innovation, education and training, entrepreneurships are playing a vital role to establish KBE (Gangi, 2017; Psarras, 2006; Ghosh & Ghosh, 2009; Westernen, 2012). Library is a knowledge eco-system (Ju & Shen, 2015). The opportunities for librarians are leveraging their IC in the knowledge society. Intellectual capital assets of librarians, considers how they align with professional competencies and the traditional functional competencies might shift in the KE and librarians might prepare for expanded roles in the knowledge society (Bedford, Donley & Lensenmayer, 2015). Knowledge innovation cultures of libraries are a kind of value, behavior and institutional system, which gains competitive advantages and sustainable development of libraries through knowledge creation. This kind of culture is different from traditional library culture including environment, resources and business. To establish knowledge innovation culture, enhance trust and cooperation within staffs, create a kind of learning culture, shape knowledge-based team organization, enhance human resource development and cultivate knowledge innovation talents are needed (Sheng & Sun, 2007). The research possesses three problems which are enumerated below:

First problem, the perception of KBE and KE is still vague in Bangladesh. Furthermore, there are lacks of studies exploring the perception of IPs about KBE in Bangladesh. On the other hand, the libraries and IPs need to be aware of their desired modern expanded role in this modern economy. But the demand of the organization is increasing day-by-day to follow up with KBE. The special library services are changing rapidly and becoming more innovative and digital in Bangladesh. Therefore, it is very important to know whether the IPs of special libraries are aware of these changes in Bangladesh.

Second problem, there is lack of empirical research for the libraries and the IPs of special libraries to know the skills that are required for contributing KBE in Bangladesh. There is a lack of proper guidelines or instruction also for the librarians and IPs to develop their skills

including for building KBE in Bangladesh as well. Moreover, IPs existing roles are enough for the corporative objectives in the organization or not. Furthermore, it needs to know whether the IPs of special libraries existing roles need to be expanded or not for involving KBE. In addition, if the IPs roles need to be expanded, how they can develop them to involve more in KBE of Bangladesh. It is also necessary to know for greater opportunities for the IPS of special libraries including LIS professionals could be more effective to develop KBE in Bangladesh.

Third problem, sharing knowledge is necessary to develop KBE in Bangladesh. If the IPs in the special libraries want to involve KBE, then what are the barriers and problems that they are going to face in their respective organization. Moreover, it is important to know whether the IPs in the special libraries are getting scope to share their knowledge in the organization or not. If they have opportunities to share, how they can share knowledge in the organization. Furthermore, it also needs to know about their opinion regarding KS that can play a vital role to develop organizational economy.

1.3 Objectives of the research

To overcome the problems and explore the perception, skills and KS activities involving KBE in Bangladesh, the study is an exploratory research. The aim of this research is to examine the role of special libraries for building KBE in Bangladesh. To achieve this aim, the following objectives were formulated:

1. To ascertain the perceptions of the IPs in special libraries regarding KBE in Bangladesh.
2. To identify the key skills needed for IPs of special libraries successfully engage KBE in Bangladesh.
3. To expand the modern role of the IPs of special libraries, including LIS professionals, with greater capacity for building KBE in Bangladesh.
4. To explore the initiatives taken to facilitate KS activities for KBE in Bangladesh.

1.4 Research questions

In pursuing the above aims and objectives, this study formulates one Major Research Question (MRQ) and four Subsidiary Research Questions (SRQs) which will guide the study:

MRQ: How do special libraries play a significant role for building KBE in Bangladesh?

SRQ-1: What are likely to be the perceptions of the IPs of special libraries regarding KBE in Bangladesh?

SRQ-2: What are likely to be the key skills needed for the IPs of special libraries to successfully engage in KBE in Bangladesh?

SRQ-3: What are the recommendations and suggestions for the creation of greater opportunities for the IPs of special libraries, including LIS professionals to build KBE in Bangladesh?

SRQ-4: What are likely to be the initiatives taken to facilitate KS activities in the organization of special libraries for KBE in Bangladesh?

1.5 Significance of the study

Bangladesh is moved to knowledge-based one and developing day-by-day. The current Honorable Prime Minister of Bangladesh, Sheikh Hasina (2016) stated that to make the population of the country into an asset rather than a burden through a people-centric development model, the young workforce as the most important agent in the development paradigm. Moreover, she also reported that Bangladesh is now producing everything from ships to chips and the country is moving up the value chain by developing a KBE, technical-capacity building, enterprise development and an integrated policy approach to investment. The strength of people's power to emerge as a middle-income country by 2021 and the country can join the ranks of the developed countries by 2041. Therefore, according to the current prime minister's vision 'Digital Bangladesh' 2021, the country is going to move forward with more digital rather than traditional activities. To build KBE in Bangladesh, the country needs highly skilled people, more intellectual people, more human capital, highly advanced technology, high technology investments, more digital apps and applications. To develop national system of innovation (NSI) in Bangladesh for the country performances, the service and products needs to be more innovative.

Chapter 1: Introduction

Asian Development Bank (2016) reported that the education and quality of Bangladesh's workforce needs to be improved urgently, as huge numbers of young people are entering into the job market just as the country is looking to diversify and modernize its economy. Noticeably, the skills of the workforce are not meeting the demands of developing or established industries. The broad range of LIS professionals are working in different organization in Bangladesh. Libraries and librarians or the IPs have a bigger role to develop KBE (Barker & Van-Brakel, 1998; Moahi, 2012; Kostagiolas, 2013). LIS professionals are working as IPs in the special organization and providing a very important service to the organizations to achieve their goal. Their role is very different from others academic, national or public information professionals. Special library service is also very different from others. Nevertheless, the special organization demand is changing rapidly because of the need to move forward digitally with activities with more digital. The organizations want free flow information to develop the lives of poor citizen. This information they want very urgently and more digitally. If the IPs of special libraries failed to provide this service, the organization cannot work towards building KBE in Bangladesh. To fulfill the demand, the organization needs to hire someone who can provide that respective service for their organization. Moreover, this is not a good sign for the LIS professionals.

We feel that it needs to be explored and need to know what areas the library professionals can improve including skills and competencies. Moreover, to share knowledge in the organization how their role could be more effective to contribute KBE. Therefore, this study is an endeavor, to examine the scenario the role of special libraries for building KBE in Bangladesh. Moreover, ascertains the perceptions of the IPs in special libraries to develop KBE in Bangladesh. In addition, identifies the key skills that are needed for the IPs of special libraries to successfully engage KBE in Bangladesh. Furthermore, expands the desired modern role of the IPs in special libraries, including LIS professionals, with greater capacity for building KBE in Bangladesh. Nevertheless, explores the initiatives taken to facilitate KS activities for building KBE in Bangladesh. The original views obtained from the IPs of the special libraries through survey and interview, which will contribute to develop the role of special libraries for building KBE in Bangladesh. It will minimize the existing gap as well. The research also subsidizes how the IPs of special libraries can develop their skills, what are the skills that the students of LIS education should develop before entering

into the workplace. Moreover, the recommendations about how the IPs role of special libraries can be more effective in Bangladesh.

1.6 Research design and methodology

Research methodology is a systematic way to solve a problem. It is a science of studying how research is to be carried out (Rajasekar, Philominathan & Chinnathambi, 2006). It provides an explanation of the context of the study, sample design, measurement tool, data collection procedure, and data analysis techniques used for the research findings (Mohapatra, 2016). This study is qualitative research with a mixed method design, i.e., a combination of qualitative and quantitative approaches. Because, qualitative research is in-depth research using a range of techniques, which aims to understand why people think, feel, react and behave in the way that they do (Talbot, 2015). The number of scholars recommended about qualitative research is an assessment of trustworthiness, experiences and perspectives (Krefting, 1991; Clandinin & Connelly, 2000; Dixon-Woods et al., 2006). The use of mixed method design including from both qualitative and quantitative frameworks by outlining not only logistic and pragmatic issues requiring the attention of researchers underlying philosophical tensions and project from the initial process of identifying a research problem through to data collection, analysis and publication (Gibson, 2012). The other researchers were also discussed about mixed method research in their study (Amaratunga et al., 2002; Arora & Stoner, 2009; Malina, Nørreklit & Selto, 2011; Golicic & Davis, 2012). An inductive approach and a survey method were used for this study with one structured questionnaire as the instrument of data collection. Inductive approaches are generally associated with qualitative research, whilst deductive approaches are more commonly associated with quantitative research (Gabriel, 2013). The researcher administered two times' pilot survey with the questionnaire to make it more relevant to make the study a success. The main objective of a pilot study is to determine whether conducting a large-scale survey is worth the effort. The questionnaire or interview format can be revised, or the type of survey may be altered into a more suitable one to fulfill the purpose of the study (Sincero, 2012).

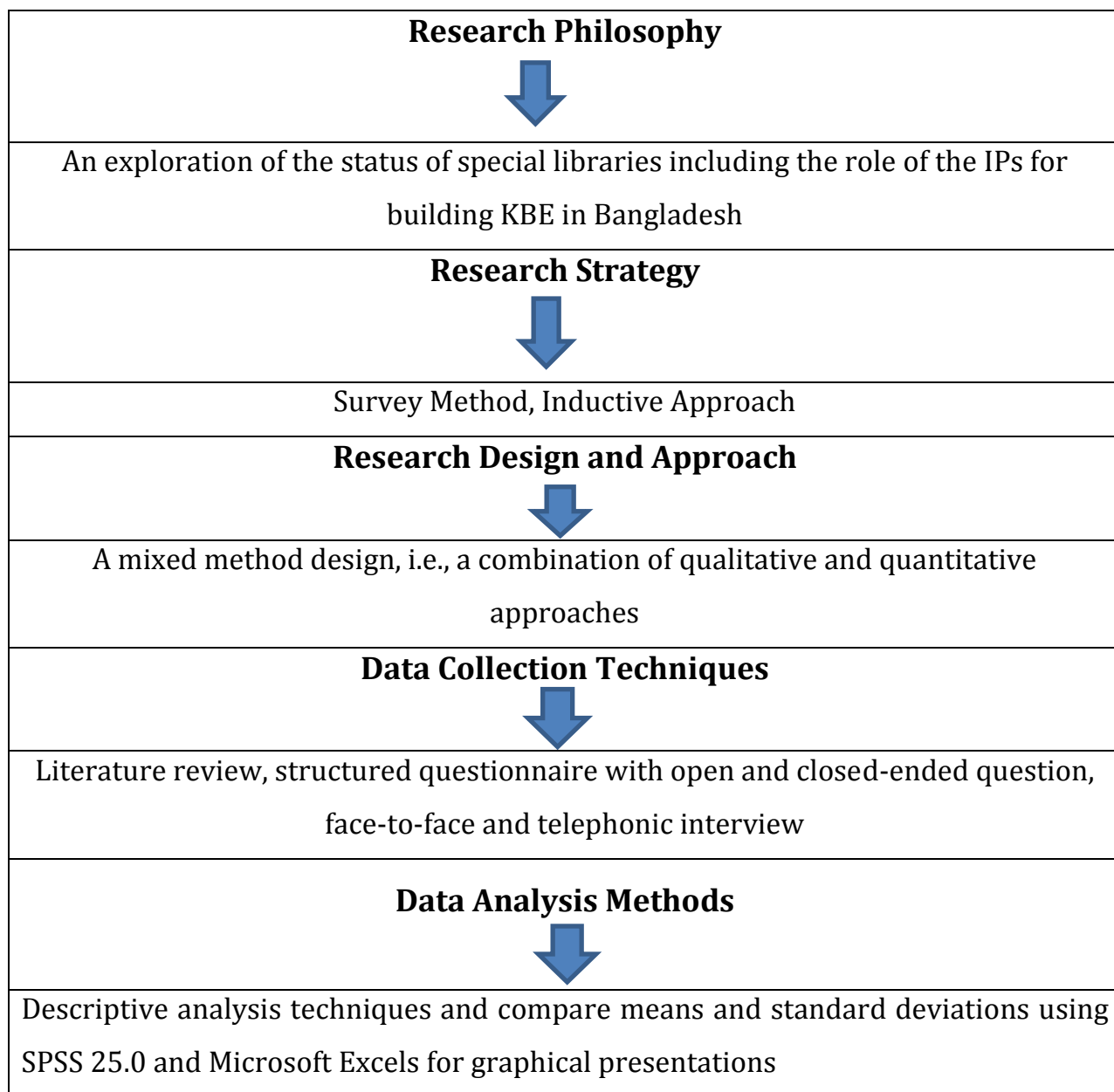


Figure 1.1: The research design in this study

Figure 1.1 indicates that our research philosophy was an exploration of the status of special libraries including the role of IPs for building KBE in Bangladesh. As the study is for examining the IPs role of special libraries, therefore the study used survey method in the respective special libraries of Bangladesh and the participants were chosen as an experienced IPs in those organizations. The table also reveals that the research strategy was survey method with structured questionnaire; the research design was a mixed method design, i. e, a combination of qualitative and quantitative approaches. Moreover,

data collection method was literature review, structured questionnaire with open and closed-ended questions, face-to-face and telephonic interview. For data analysis we used descriptive analysis techniques and compare means and standard deviations using Statistical Package for the Social Sciences (SPSS) 25.0 and Microsoft Excels for graphical presentations.

1.6.1 Face-to-face and telephonic interview

Face-to-face interview is a data collection method when the interviewer directly communicates with the respondent in accordance with the prepared questionnaire. It standardized/semi-standardized interview is a quantitative research tool (IRIS, 2004-2018). There are also face-to-face interviews advantages and disadvantages in data collection. Advantages include accurate screening, capture verbal and non-verbal cues, keep focus, and capture emotions and behaviors. Disadvantages include cost, quality of data by interviewer, manual data entry, and limit sample size (Wyse, 2014). Telephone interview is a data collection method when the interviewer communicates with the respondent on the telephone in accordance with the prepared questionnaire. Consequently, telephonic interview is short and focused on a collection of concentrated information. It is a quantitative research tool practiced in public opinion, customer or other target group surveys (IRIS, 2004-2018).

This study explores the IPs modern role of special libraries for contributing KBE in Bangladesh. Therefore, we collected data from the experienced IPs from some selective special libraries in Bangladesh and represent them as respondents in the whole study. The researcher started the survey from January 28 to March 29, 2018 to assess the feedback from the respondents in the respective special libraries of Bangladesh. Twenty five (25) respondents gave their feedback through face-to-face interview. On the other hand, fourteen (14) respondents provided their feedback through email. Due to the tight schedules within the organizations, official restricted entrance procedures and geographical barrier, some of the respondents were unable to meet in person with the researcher, in that case, telephonic communication and telephonic interviews were conducted with the respondents in special libraries.

1.7 Data collection techniques

In the study we used qualitative research with inductive approach with thirty-nine (39) respondents who worked in different special libraries as IPs in diverse positions in Bangladesh. We used survey method with one structured questionnaire consisting of open and closed-ended question. Face-to-face and telephonic interviews were carried out to collect data. We also applied seven-point Likert scales using the following scores: 1=Strongly Disagree; 2=Somewhat Disagree; 3=Disagree; 4=Neutral; 5=Somewhat Agree; 6=Agree; 7=Strongly Agree. The structured questionnaire was divided into four sections. Section one includes questions to know about the perceptions of IPs regarding KBE in Bangladesh; Section two contains questions on highlighting skills and competencies needed in special libraries for building KBE; Section three contains questions on focusing the state-of-the art of initiatives taken to facilitate KS activities for KBE. Section four contains general questions regarding the background information of the respondent. For collecting secondary data or information the researcher goes through different types of publications. The researcher used published data from the subscription database, open access e-journals including EBSCOHOST, JSTOR, Taylor & Francis Online, Springer link, Emerald Insight, Google Scholar, Science Direct, Elsevier and the different external report from the World Bank, Asian Development Bank (ADB), Asia-Pacific Economic Cooperation (APEC), OECD report and open access report about Bangladesh and development.

1.8 Research sampling

For sampling, we selected different special libraries in Bangladesh such as government, non-government organization (NGO) and private organization, bank, international organization, research organizations, ministry organizations, specific communities' university, medical, children, and law libraries in Bangladesh based on their involvement on KM, KE and KBE. Moreover, the libraries also selected based on modern library and information services, skilled and experienced professionals with modern technology and digital applications for exploring the scenario of different special libraries requirement for KBE in Bangladesh.

The respondents were selected who worked as an IPs in those organizations. Initially fifty two (52) IPs from the forty (40) special libraries were selected based on their knowledge, skill and experience as well as their educational qualification of Bangladesh. Among them, thirty nine (39) participants from thirty one (31) organizations were agreed to give their feedback for this study. The forty (40) special libraries were selected based on the working environment, user service, innovative products, and digital tools and applications in Bangladesh which shows in the Table1.1.

Table 1.1 shows that the distribution of questionnaires to 52 (100%) different special library professionals from the 40 (100%) organizations in Bangladesh initially. Among them, 39 (75%) special library professionals from 31 (77.5%) of the organizations answered the questionnaire and return to the researcher.

Table 1.1: Distribution of questionnaires

| Number of Professionals | Total | Percentages | No. of Organizations | Total | Percentages |
|--------------------------------|--------------|--------------------|-----------------------------|--------------|--------------------|
| Distributed | 52 | 100% | Distributed | 40 | 100% |
| Received | 39 | 75% | Received | 31 | 77.5% |

1.8.1 Interviews with the respondents of special libraries

For the depth analysis, the researcher used the interview method using face-to-face and telephonic interview discussions with the respondents from special libraries of Bangladesh. Figure 1.2 indicates among them sixty-four (64%) of the respondents gave their feedback in face-to-face interview. On the other hand, because of tight schedule in the organization and geographical barriers with the researcher thirty-six (36%) of the respondents gave telephonic interview with the researcher.

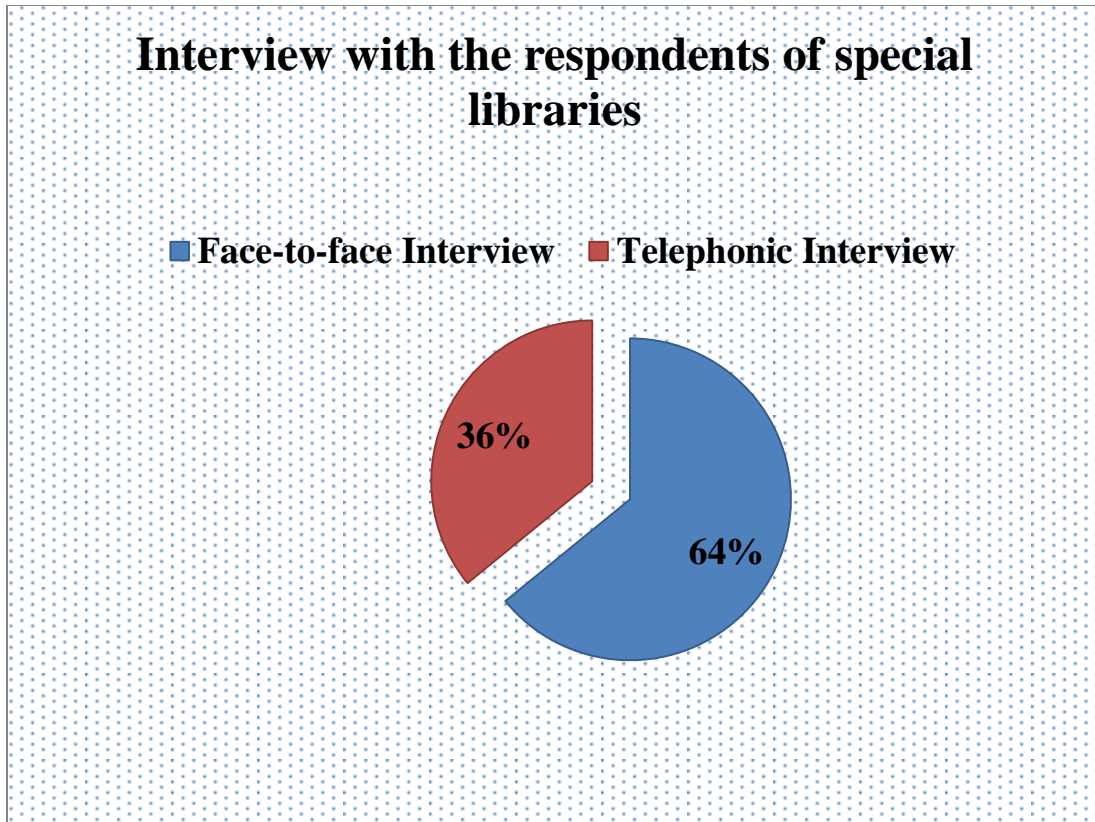


Figure 1.2: Distribution of interviews with the respondents

1.8.2 Distribution of gender of the respondents

We collected feedback from the male and female professionals from these thirty nine (39) participants from the 31 organizations. Among them (N-39) respondents, in figure 3.1 indicates the percentage of sixty four (64%) of respondents were male professionals. On the other hand, thirty six (36%) were female professionals from those respective special libraries of Bangladesh.

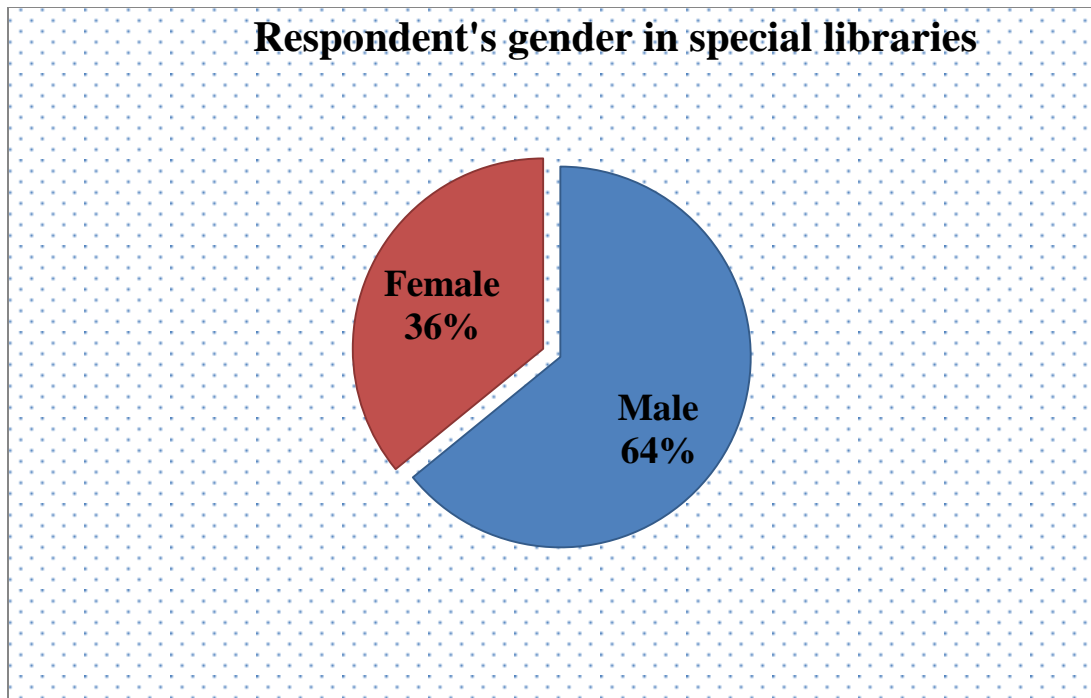


Figure 1.3: The distribution of gender of the respondents

1.8.3 Education levels of the respondents

To select potential respondent for the study, we chose different levels of education among IPs of special libraries in different organizations. The respondents' level of education in Figure 1.4 indicate that majority of the respondents 31 (79.48%) completed their Masters from LIS discipline and 5 (12.82%) of the respondents completed their Ph.D. from the same discipline. Subsequently, 1(2.56%) of the respondents obtained their Masters from other subjects and they have been continuing their education either for Ph.D. or for M.Phil. degree.

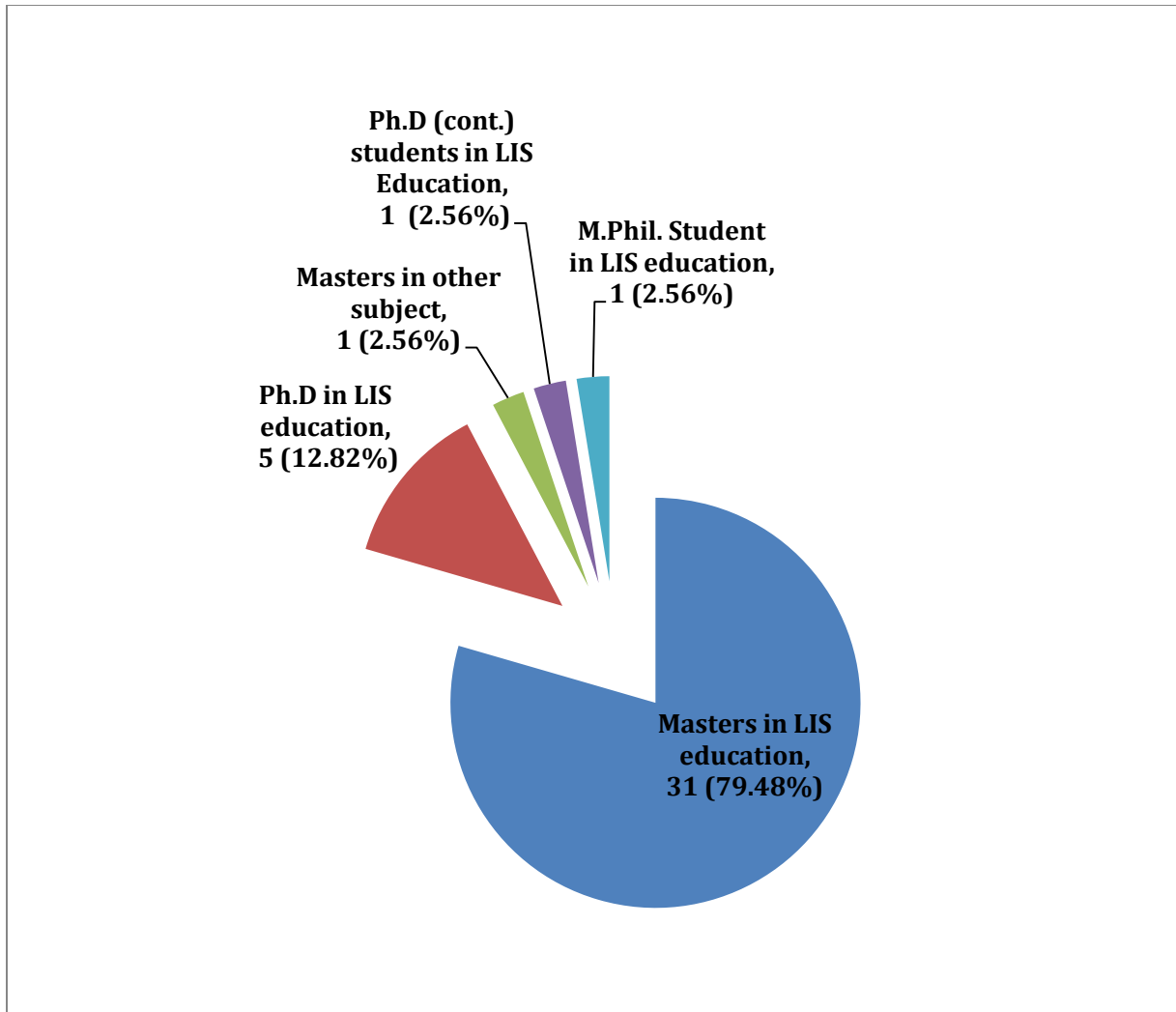


Figure 1.4: Respondents levels of education

1.8.4 Geographic distributions of the respondents

Figure 1.5 indicates more than eighty-nine (89.74 %) of the respondents participated for this study which was the most significant number, were from Dhaka city. On the other hand, 2.56% of the respondents were from Comilla. Subsequently, more than seven (7.69%) of the respondents from Savar and Gazipur were also participating for this study.

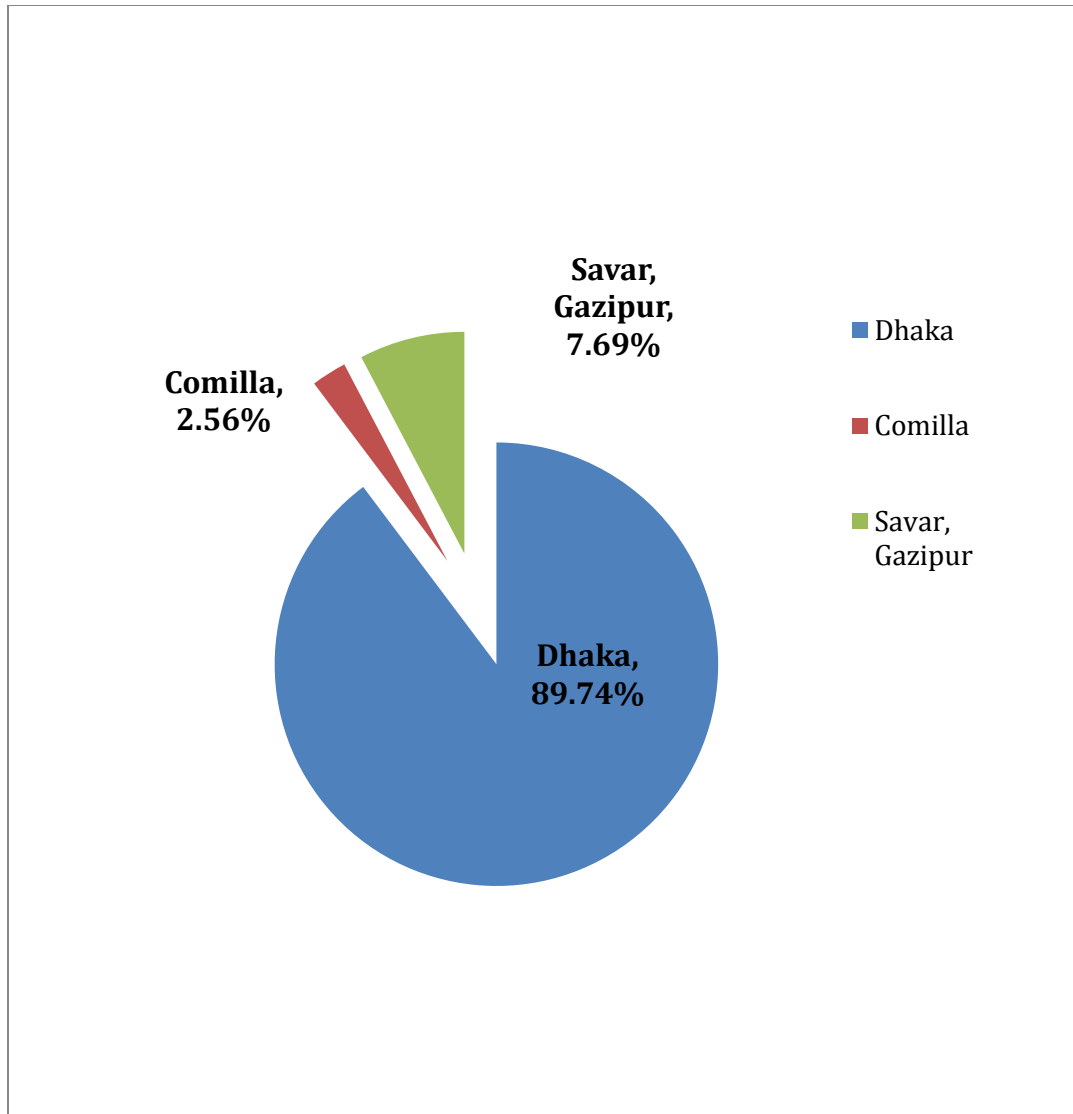


Figure 1.5: Geographic distribution of the respondents in Bangladesh

1.8.5 Total respective organizations

In this study we collect data from the thirty-one (31) different respective special libraries in Bangladesh including research, government, international organizations, media, Non-government organization (NGO) and private organization, bank, medical, children, law and university for the specific community in Bangladesh.

Table 1.2 List of total respective organizations

| Category of special libraries | Name of the organization |
|---|--|
| Bank libraries | 1. The World Bank 2. Bangladesh Bank |
| Government libraries | 3. National Institute of Mass-communication 4. Ministry of Foreign 5. Prime Minister Office 6. Directorate of Secondary and Higher Education 7. Palli Karma-Sahayak Foundation (PKSF) |
| University libraries for the specific community | 8. Sherebangla Agricultural University |
| Medical libraries | 9. Apollo Hospital Dhaka |
| NGO and private organization libraries | 10. Centre for Policy Dialogue (CPD) 11. Grameen Phone 12. Asiatic Society of Bangladesh 13. Gyantapas Abdur Razzaq Foundation (Bengal Foundation) |
| Media libraries | 14. Press Institute Bangladesh (PIB) 15. Kaler Kantho 16. The Daily Share Biz |
| Research libraries | 17. Bangladesh National Scientific Technical Documentation Center (BANSDOC) 18. Bangladesh Atomic Energy Commission (BAEC) 19. Atomic Energy Research Establishment (AERE) 20. Bangladesh Agricultural Research Institute (BARI) 21. Bangladesh Agricultural Research Council (BARC) 22. International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR)B 23. Bangladesh Council of Scientific & Industrial Research (BCSIR) 24. Bangladesh Academy for Rural Development (BARD) |
| Children libraries | 25. Bangladesh Shishu Academy |
| International organizations libraries | 26. United States Agency for International Development (USAID) 27. The Archer K. Blood Library 28. UNICEF Bangladesh Country Office 29. Library of Congress Dhaka Country Office 30. Centre on Integrated Rural Development for Asia and the Pacific (CIRDAP) |
| Law libraries | 31. Ministry of Law, Justice and Parliamentary Affairs |

1.8.6 The percentages of different special libraries

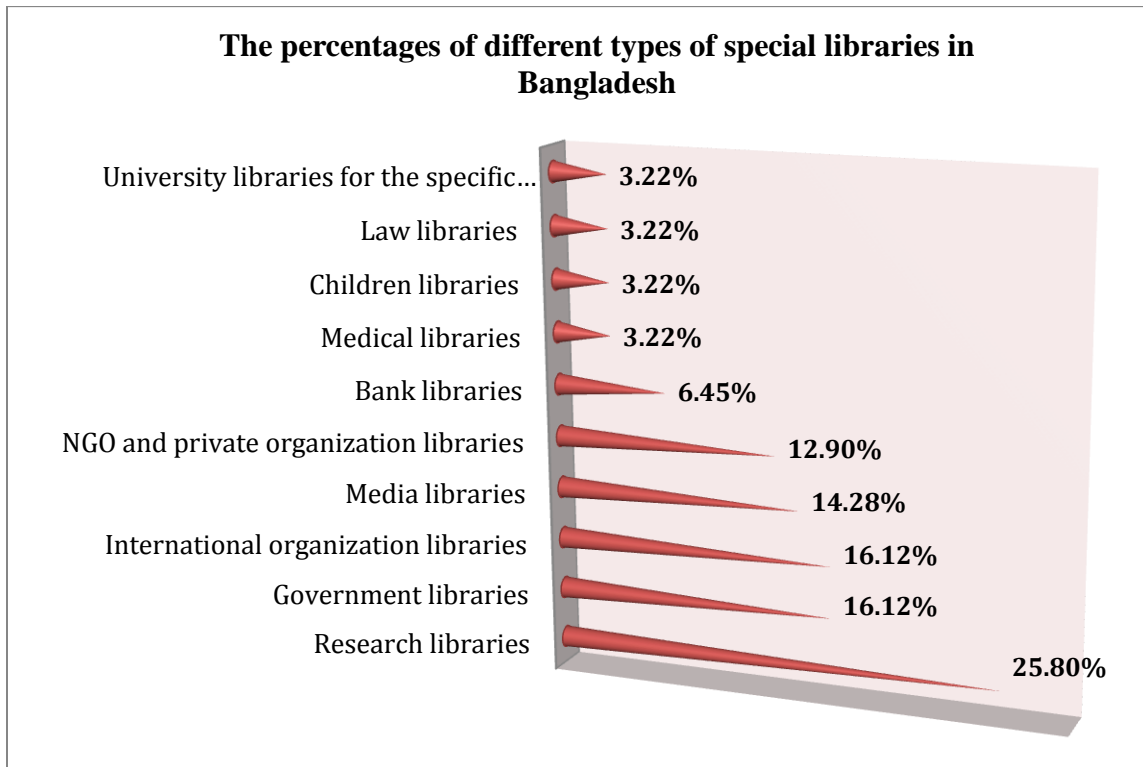


Figure 1.6: The percentages of different special libraries included for this study

Figure 1.6 represents that research libraries were more than twenty-five (25.8%) in Bangladesh. On the other hand, 16.12% were government libraries. Moreover, 16.12% were international organization libraries followed by media libraries (14.28%), NGO and private organization libraries were (12.9%), bank libraries were (6.45%), and medical libraries, children libraries, law libraries and university libraries for the specific community (3.22%) respectively.

1.8.7 Respondents' current roles in the respective organizations

Figure 1.7 indicates that the IPs of special libraries are working in the diverse positions in their respective organizations. Among them, more than fifteen (15.38%) of the respondents are working as 'Librarian' to support their organization. And more than seven (7.69%) of the respondents are working as 'Assistant Director (Library)', 'Senior Librarian', 'Executive', 'Assistant Librarian', and 'Deputy Director' in those respective organizations.

Chapter 1: Introduction

Moreover, 5.12% of the respondents are working as ‘Director’, ‘Principal Librarian’ in those special libraries of Bangladesh.

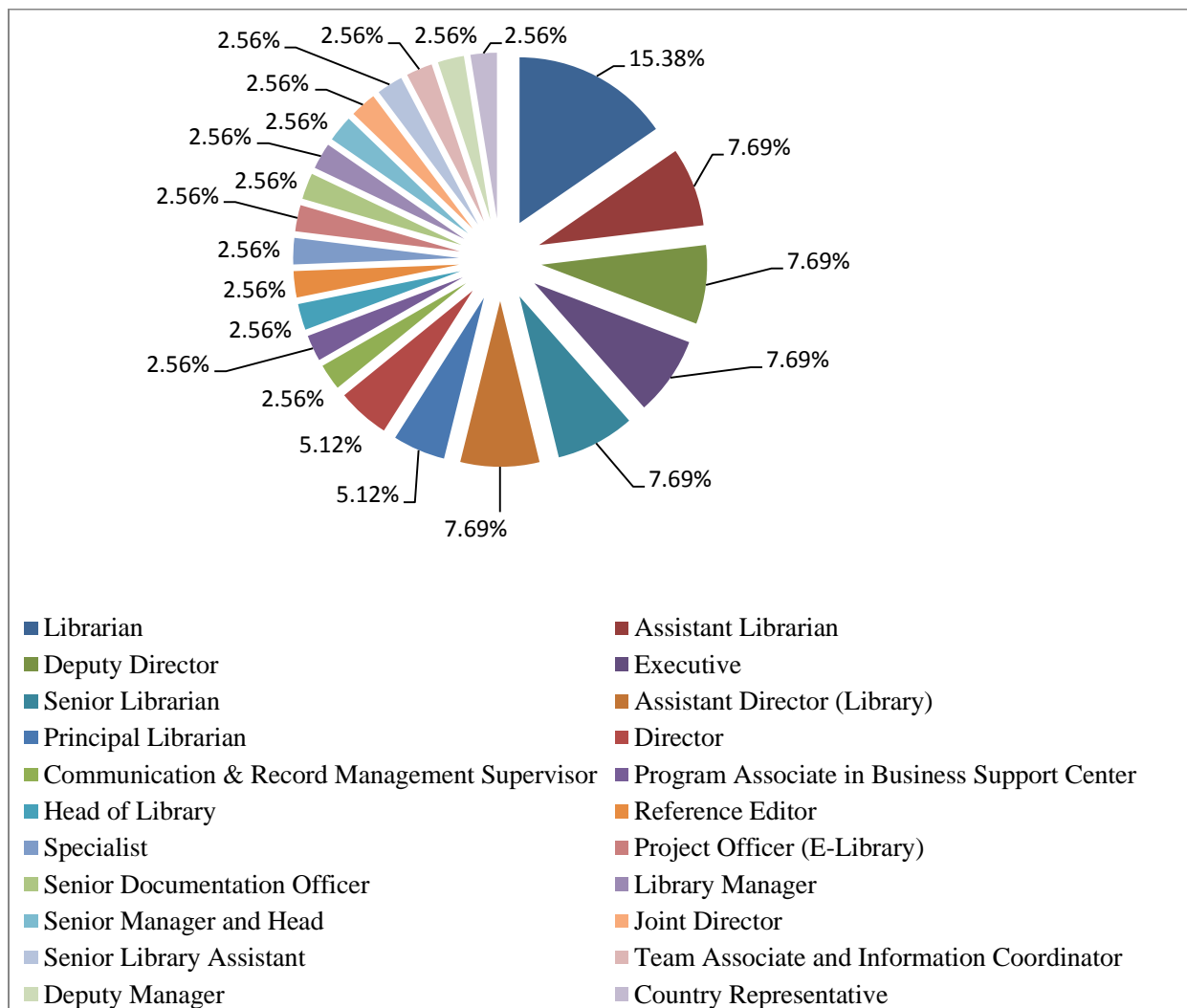


Figure 1.7: Respondents’ current role in the respective special libraries of Bangladesh

Furthermore, 2.56% of the respondents are working as ‘Program Associate in Business Support Center’, ‘Head of Library’, ‘Reference Editor’, ‘Communication & Record Management Supervisor’, ‘Specialist’, ‘Project Officer (E-Library)’, ‘Senior Documentation Officer’, ‘Library Manager’, ‘Senior Manager and Head’, ‘Joint Director’, ‘Senior Library Assistant’, ‘Team Associate and Information Coordinator’, ‘Deputy Manager’, and ‘Country Representative’ in those respective special libraries of Bangladesh.

1.9 Data analysis methods

For data analysis, we used the descriptive analysis methods of SPSS 25.0. Microsoft excels was also used for graphical presentations of data. We compared the means and the standard deviations among different factors. In the qualitative research, data was collected from the respondents' behaviors, their personal views and experiences from the different organizations. Anonymity was essential for the respondents to protect their identity and confidentiality in the research. The number of scholars investigated regards anonymity in the qualitative research (Victor, 1999; Spencer & Ritchie, 2002; Bowen, 2009; Sgier, 2012; Miles, Huberman & Saldana, 2013; Williams et al., 2017). There are number of researchers recommended about using coding system in the qualitative research to keep anonymity in the study (Basit, 2003; Saldaña, 2015; Wicks, 2017). To keep anonymity in the qualitative research we used the coding system for respondents such as R1, R2, R3.....R39 denoting Respondent 1, Respondent 2, Respondent 3,.....Respondent 39 etc. from Section 4.9 to 4.12. of the Chapter four.

1.10 Definition of research terms used in this study

Knowledge Economy (KE)

The key component of a KE is a greater reliance on intellectual capabilities than on physical inputs or natural resources (Powell & Snellman, 2004). In this research, the term 'Knowledge Economy' or KE has been used as learning economy, the new economy, the information economy etc. KE is a production and services based on knowledge-intensive activities that contribute to an accelerated pace of technical and scientific advance, as well as rapid obsolescence.

Knowledge-based Economy (KBE)

KBE came from the knowledge economy. KBE, its main promoter—the OECD—currently collects nearly sixty indicators aimed at measuring the KBE. The concept of a KBE is simply a concept that serves to direct the attention of policy-makers to science and technology issues and to their role in the economy and, to this end, a concept that allows one to talk

about any issue on science and technology and generate a large set of statistics under one roof. This kind of concept called an umbrella concept (Godin, 2006). The term KBE results from a fuller recognition of the role of knowledge and technology in economic growth. Knowledge, as embodied in human beings (as “human capital”) and in technology, has always been central to economic development (OECD, 1996). In this study, we used the term ‘KBE’ to represent the economic development of Bangladesh. Moreover, we also mentioned KBE as the modern economy in this study.

Knowledge Management (KM)

KM is nothing but the process of creating, acquiring, manipulating, storing and disseminating knowledge (Islam et al., 2011). It has moved beyond an academic theory to an essential component of organizational life (Girard & Girard, 2015). KE, KBE is related to the knowledge management (KM). In three areas knowledge is working as the key driver. The term we used in this research to represent how KM and organization learning is connected to develop KE and KBE.

Knowledge Sharing (KS)

To create a knowledge sharing culture you need to encourage people to work together more effectively, to collaborate and to share- ultimately to make organizational knowledge more productive (Gurteen, 1999). KS is necessary to develop KBE. Therefore, we used the term KS to represent KS environment for developing KBE in Bangladesh. Recently, it has been a recognized fact that knowledge is power and sharing knowledge is more power in the organization.

National System of Innovation (NSI)

The importance of knowledge and technology diffusion requires better understanding of knowledge networks and “national innovation systems”. Most importantly, new issues and questions are being raised regarding the implications of the KBE for employment and the role of governments in the development and maintenance of the knowledge- base (OECD,

1996). The term national system of innovation we used in the study for indicating country performances with innovation for the economic development.

Library and Information Science (LIS)

Library and Information Science is an academic discipline that teaches how to organize library materials through classification and cataloguing, to retrieve information or resources using modern information retrieval techniques and disseminate those resources based on users' demand. It also teaches how to manage library and library service and information services and provide the right information to the right user at the right time.

Information professionals (IPs)

In this study, we used the IPs to denote the library and information professionals who have been working in special library and information centers of different national and international organization situated in Bangladesh. As the field of information and communication technologies are changing day by day, the role of IPs are changing in the working environment. Therefore, this study has made one of the attempts to explore the extended roles of IPs of special libraries in Bangladesh for building KBE.

Perceptions

Perceptual control of behavior depends on the detection of the relevant perceptual information as well as the coordination of responses necessary for the action system (Bertenthal, n. d.). We used the term perception for introducing being aware of, establishing and understanding the information in the research. Perceptions is a human sense to understands people feelings, emotions etc.

Skills and competencies

Skills and competencies are necessary in every sector in life. There are different ranges skills in the world. We used the skills and competencies as research term in this study to represent which skills are necessary for the IPs to contribute in KBE.

Special Libraries

There are different types of libraries including academic, national, and public. We used special libraries for this study. Special libraries appeared more than two centuries ago in parallel with the evolution of business. They came out of the necessity that business, scientific, technical, legal and statistical information was requested to assist the growth of companies. As a result of the variation of business domains, each special library is unique and not identical with any other (Semertzaki, 2012). We select special libraries for this study because they are providing information to achieve the mission and goals for the organization. Moreover, special libraries are preserving information to help the government or the organization for facilitating accurate decision making for the government settings. Moreover, special libraries' service also to develop knowledge creation and innovation for the different users in the organization.

1.11 Structure of the thesis

The study is organized into six chapters (Figure 1.8).

Chapter One

This introductory chapter provides the research background, statement of problem, objectives of the research, research questions, significance of the study, research design and methodology, face-to-face and telephonic interview, data collection techniques, research sampling, interviews with the respondents of special libraries, distribution of gender of the respondents, education level of the respondents, geographic distribution of the respondents, total respective organizations, the percentages of different special libraries, respondents' current roles in the respective organizations, data analysis methods, definition of research terms, and the organizational structure of the thesis.

Chapter Two

This chapter provides a wide-range review of the literature including data, information, knowledge, wisdom and their relationships, types of knowledge, intellectual capital /human capital, understanding KM and organization learning, understanding KE and KBE, KBE in the world including OECD framework, APEC Framework and the World Bank

Chapter 1: Introduction

framework, KS and KBE, review of building KBE: perspective Bangladesh, building KBE: review of the role of libraries and IPs, and KS initiatives taken for the libraries.

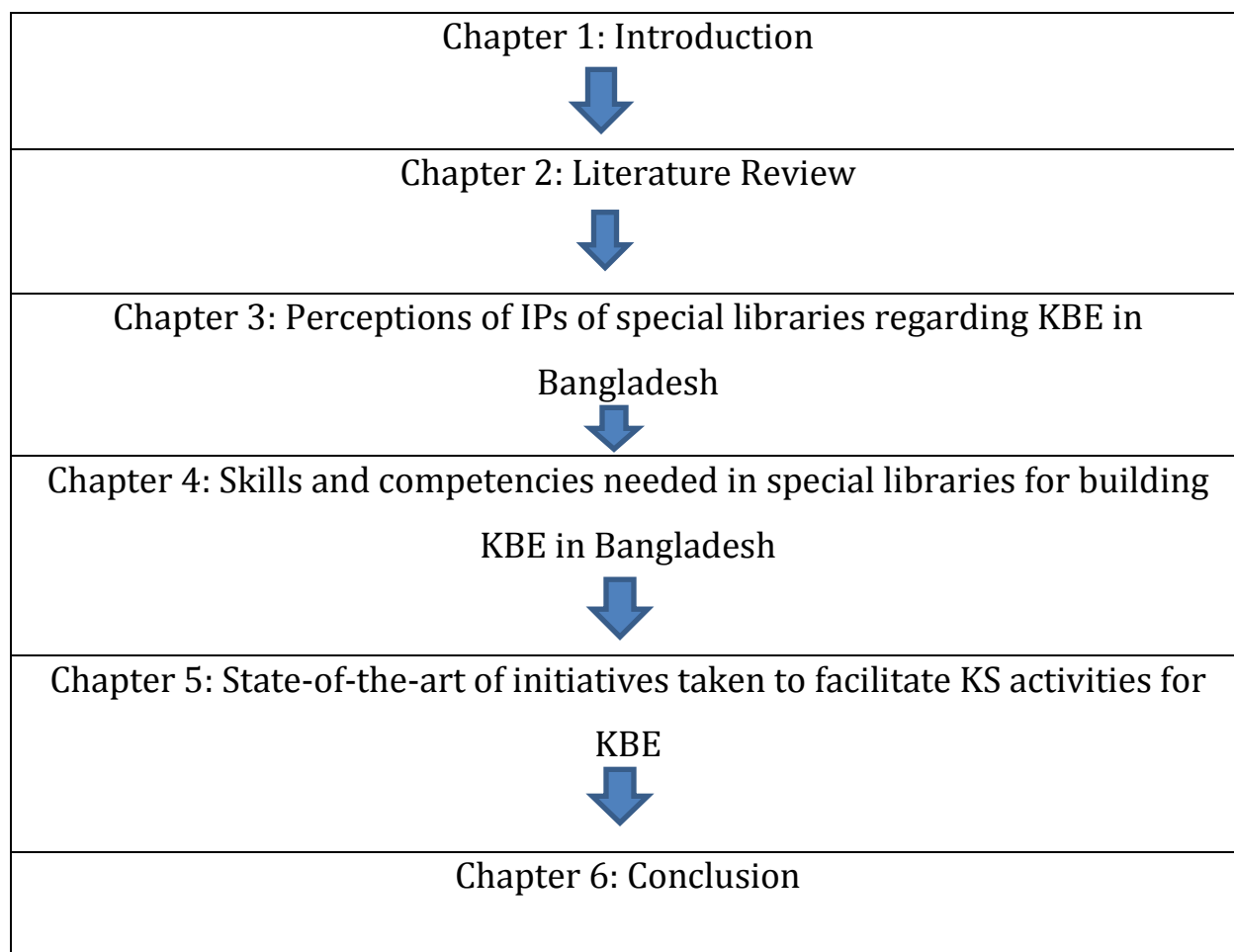


Figure 1.8: The structure of the thesis

Chapter Three

The chapter analyzes the perceptions of the IPs in special libraries regarding KBE in Bangladesh. It also discusses data collection techniques, data analysis methods, respondents' understandings on KBE, respondents' perceptions on KBE, builds KBE in Bangladesh, the IPs functional role in special libraries to accelerate KBE in Bangladesh, desired modern and expanded role of the special librarian or the IPs to involve in KBE, and chapter summary.

Chapter Four

This chapter analyzes the skills and competencies that are needed for the IPs of special libraries for building KBE in Bangladesh. The chapter also discusses data collection techniques, data analysis methods, key skills and competencies needed for the IPs in the special libraries, qualities of the IPs in the KE era, characteristics or attributes on hiring to accelerate KBE, the number of professionals worked in the respective special libraries, barriers for the IPs to accelerate KBE in Bangladesh, suggested different ways to develop skills by the respondents, recommend skills and competencies for the students of LIS education, respondents' responses regarding special libraries play a significant role for building KBE in Bangladesh, respondents recommended opportunities regards the IPs role could be more effective to develop KBE in Bangladesh, and chapter summary.

Chapter Five

This chapter explores the state-of-the art of initiatives taken to facilitate KS activities for KBE in the respective organizations. It also includes data collection techniques, data analysis methods, respondents' perceptions of sharing knowledge in the organization, challenges in sharing knowledge in the organizations, different ways to share knowledge in the respective organization, KS activities play vital role to develop organizational economy and chapter summary.

Chapter Six

This last chapter includes answers to research questions including four SRQs and one MRQ, practical implication of the research including the IPs of special libraries, LIS education and professionals, and LIS students, research limitations, practical implication of the research, and directions for further research including chapter summary.

Chapter 2

Literature Review

2.1 Introduction

This chapter covers the review of the literature and conceptual organization in the different areas in the research. In the review of literature, the researcher discusses about background, data, information, knowledge, wisdom and their relationships, types of knowledge including tacit and explicit knowledge. Moreover, the researcher converses in the review of intellectual capital (IC) and human capital (HC), understanding knowledge management (KM) and organization learning, and understanding knowledge economy (KE) and knowledge-based economy (KBE), KBE in the world. In addition, the review of literature also brings out national system of innovation (NSI) and knowledge-based economy indicators including different frameworks for KBE. Moreover, it also discussed about KS and KBE and review of building KBE: perspective Bangladesh. Furthermore, in this chapter included the review of the role of libraries and information professionals (IPs) and knowledge sharing (KS) initiatives in the libraries.

2.2 Concept of knowledge economy (KE)

The term 'Knowledge Economy' was first introduced by Peter Drucker in his book 'The Age of Discontinuity' (Peter, 1969). Over the past several decades, knowledge and KE has increased a number of attentions, because of the importance in the economic growth over the world. A numbers of scholars and specialists have argued about KE in the developed countries and use of knowledge and information for economic growth and development. Smith (2002) stated that there is no coherent definition for the KE, let alone theoretical concept, of this term; it is the best widely used metaphor, rather than a clear concept. Moreover, he also stated that all economies are in some way based on knowledge, but it is hard to think that they are directly based on knowledge. On the other hand, KE is a KBE. In the KE era, the management refers to effectively identify, acquire, develop, resolve, use, store and share knowledge, to create an approach to transforming and sharing of tacit and explicit knowledge, and to raise the emergency and innovation capability by utilizing the wisdom of the team (Shanhong, 2000). The growth of technological and scientific knowledge in the past two centuries has been the overriding dynamic element in the economic and social history of the world. Its result is now often called the KE (Mokyr,

2002). According to common debate, the KE is all around us. Think-tanks and commentators argue that developed countries have no future in a globalized economy unless they specialize in knowledge-intensive activities (Marrano, 2009). Similarly, a KBE is an economy in which the production, distribution, and use of knowledge is the main driver of growth, wealth creation and employment across all industries (APEC, 2000). The library will play a very crucial role in the extension and modification of knowledge. The concept of KBE has generated tremendous interest among librarians now-a-days. A library's status is no longer defined by the collection it housed; it is extended to include online and seamless access to information resources. The right amount of information at the right time has long since been an important factor for all kinds of libraries (Kumar, 2010). Moreover, the key professionals involved in KM programs are information technologists and human resource managers but IPs also have a role to play as they are traditionally known as good managers of explicit knowledge (Ajiferuke, 2003). In addition, special libraries and the librarians are in the best position to be key players in the KM of their organization. It is a center of storing and organizations for information and knowledge with a special mission to fulfill the information needs of the parent organization (Weerasinghe, 2006).

2.3 Data, information, knowledge, wisdom and their relationships

The number of scholars and researchers defined and investigated about data, information and knowledge, and wisdom and mutual relationships in the organization. Moreover, data is the basis for the creation of information. Information is analyzed, organized and codified data that are processed to create new knowledge, and wisdom is the willingness (Aamodt & Nygård, 1995; Kock et al., 1997; Burton-Jones, 2001; Bellinger et al., 2004; Boisot & Canals, 2004). Therefore, knowledge derives from information, as information stems from data. These days, the basic economic resource of the society is knowledge and not capital and the society is oriented to the KE (Semertzaki, 2011).

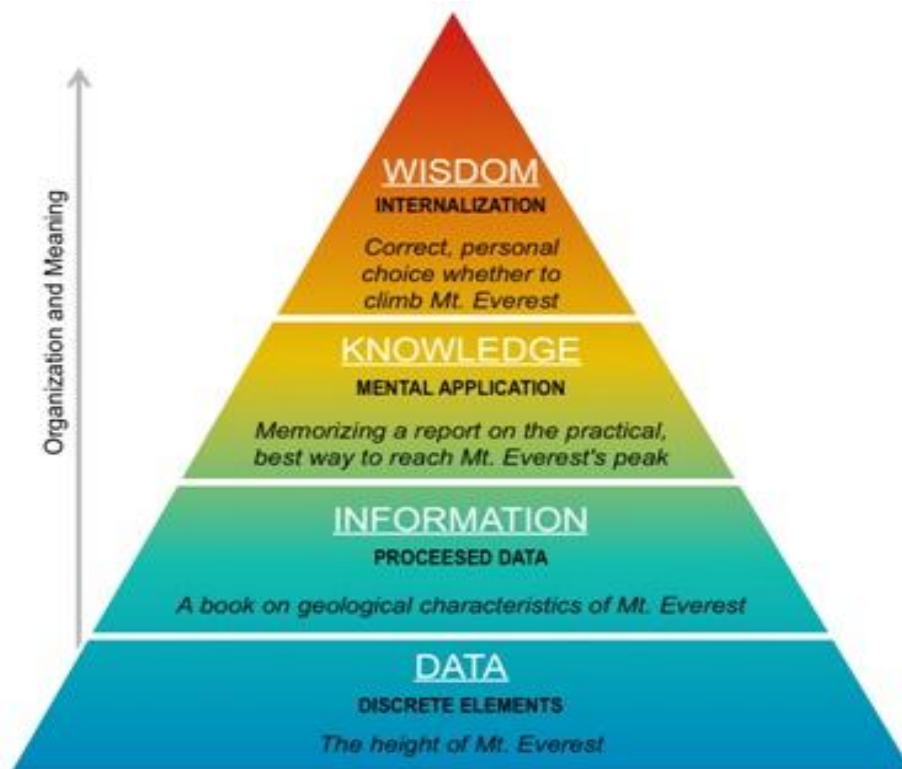


Figure 2.1: The big data Maslow's pyramid.

Source: Popescu (2011)

2.4 Types of knowledge

Over the past several decades, a number of scholars and researcher classify and categorize different types of knowledge. Knowledge classified into two types in broader sense: tacit and explicit (Tiwana, 2000). Human knowledge exists in different forms; it can be articulated explicit or manifested implicitly (tacit). Moreover, he explained the links between knowledge types, organizational forms and societal institutions (Lam, 2000). In addition, according to Smith (2001) knowledge plays a key role in the information revolution. Tacit knowledge based on common sense, and explicit knowledge based on academic accomplishment is both underutilized. Methods to balance the use tacit and explicit knowledge at work and practical, proven ways to improve the understanding and use of knowledge are presented. Organizations must begin to create worker-centered environments to encourage the open sharing and use of all forms of knowledge.

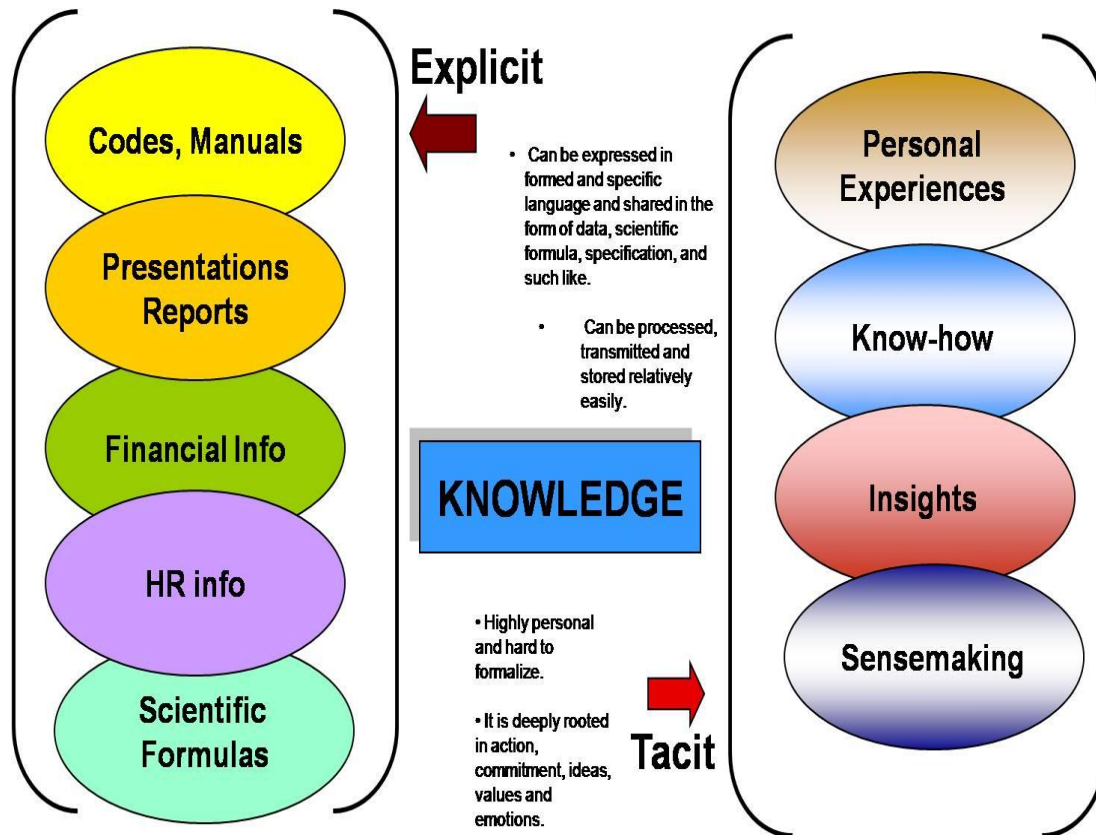


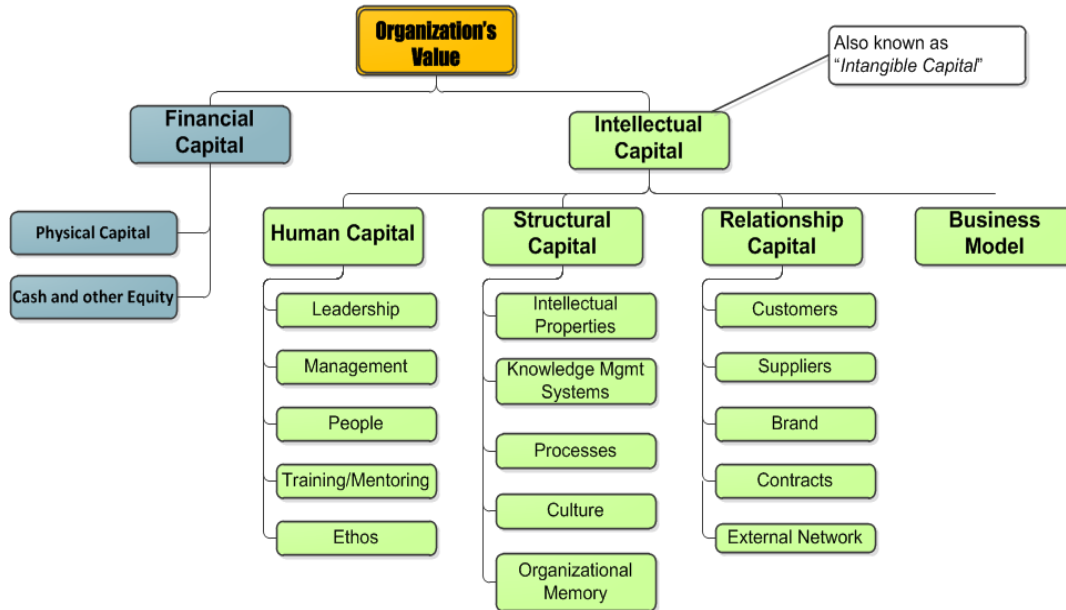
Figure 2.2: What is knowledge management (KM).

Source: Riders (2011)

2.5 Intellectual capital (IC) /human capital (HC)

The researcher found in her review of study that the number of researchers were defined, described and investigated the benefit of IC in different ways (Teece, 2002; Fernstorm, 2005; Hartman, 2009; Shie & Meer, 2010; Mushi, 2010; Kostagiolas, 2012; Rowlands, 2013). Bassi (1997) stated that IC is employees' brainpower, know-how and knowledge and processes has always been a source of competitive advantage. Kelli & Pisuke (2008) mentioned that innovation has become of vital importance for enhancing social development and creation of wealth. Intellectual property is directly connected with innovation.

Intellectual Capital: The Intangible Assets of a Modern Organization



Sources:

- Thomas Stewart, Harvard Business Review
- Dr. Leif Edvinsson, Skandia AFS
- Dr. David Skyrme, Oxford University

Figure 2.3: Intellectual capital: The intangible assets of a modern organization.

Source: Stewart (2011)

Human capital is an important component of IC (Massingham & Tam, 2015). The structure of HC is generally said to consist of natural abilities, overall culture, general and specialized knowledge, acquired abilities, skills, and experience, and the ability to put them to use at the right time and in the right place (Nureev, 2010). Similarly, Ng & Feldman (2010) stated that HC improving one's work skill and knowledge and investments. Moreover, promote the development of desirable personal attributes, which in turn lead to higher productivity and earned income. Furthermore, the relationship between an individual's HC profiles—knowledge, skills, abilities, and other characteristics—and compensation before and after a job loss. This study showed that the types of HC that predicted pre-job-loss salary differ from the types that predict re-employment salary (Gowan & Lepak, 2007).

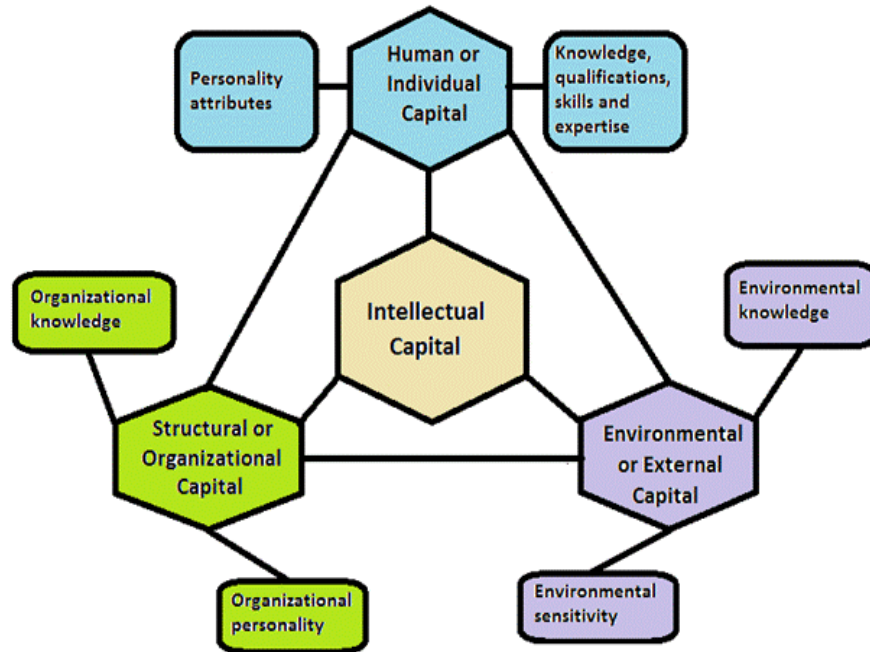


Figure 2.4: Using modeling in intellectual capital.

Source: Nahas (2016)

2.6 Understanding knowledge management (KM) and organization learning

KM is the process of creating, sharing, using and managing the knowledge and information of an organization (Girard & Girard, 2015). It is the conversion of tacit knowledge into explicit knowledge and sharing it within the organization (Uriarte, 2008). However, the broad number of scholars discussed and investigated about KM and KM strategy and the organization (Applegate et al., 1987; Alavi & Leidner, 2001; Davenport & Grover, 2001; Gerald & Pusch, 2002; Jasimuddin & Zhang, 2014; Gold, Malhotra & Segars, 2001). KM and sharing of knowledge has been emerged as one of the most important area in management practices and established as a basic resource for organizations and economies. As more and more information and knowledge is created and exchanged, the world has become more knowledge-oriented (Thapa, 2009). Moreover, there is an evidence of the importance of KM practices for problem-solving activities and firm performance (Giampaoli et al., 2017). In addition, the KM and decision-making style by reviewing organizational

performance in its simplistic state is the realization of organizational objectives. It is important that organizations have measurable objectives as this has been found to be integral to employees' engagement and commitment toward the organization. Financial benefits, profitability and organizational learning are some ways to assess organizational performance (Abubakar et al., 2017).

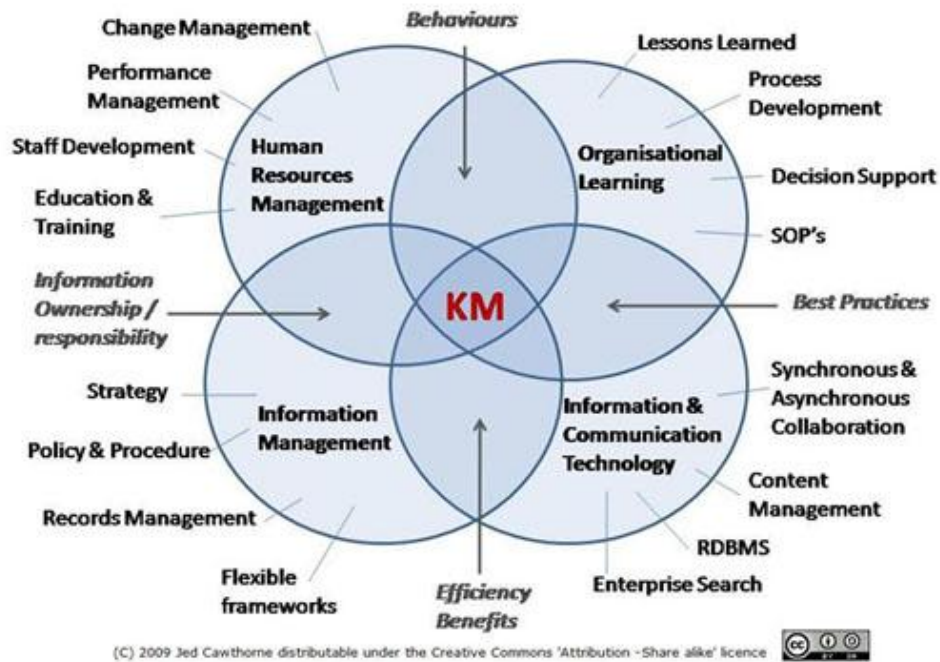


Figure 2.5: Content management in a knowledge management context.

Source: Prescient Digital Media (2012)

The mediating role of trust was confirmed and building organizational trust between employees and manager could enhance organizational performance (Alaarj et al., 2016). Therefore, KM has been hailed as one of the most important developments in the fields of information studies and management science in the recent decades. By capturing, organizing, documenting and sharing organizational knowledge, KM helps today's complex organizations to make better decisions and solve their problems effectively (Hoq & Akter, 2012). Moreover, Nonaka and Takeuchi (1995) proposed using their theory of "Organizational Knowledge Creation", i.e. the capability of a company as a whole to create new knowledge, disseminate it through the organization and embody it in products,

services and systems. This, according to the authors, is the key to the manner in which Japanese companies innovate continuously.

2.7 Understanding knowledge economy (KE) and knowledge-based economy (KBE)

Over the past several decades, a number of scholars and commentators have argued and discussed about KE and stated that it is new economy for development (Brown et al., 2004; Romer & Kurtzman, 2004; Powell & Snellman, 2004; Kumar & Van Welsum, 2013; Lamberton, 2004; Atkinson, 2004). Moreover, the growth of technological and scientific knowledge in the past two centuries has been the overriding dynamic element in the economic and social history of the world. Its result is now often called the KE (Mokyr, 2002). KE uses data as its raw material and transforms it using technology, analysis tools, and human intelligence into useful applications for businesses that lead to economic (productivity) growth. Knowledge can be obtained and trained by experience, familiarity, science or learning. Often knowledge is taken together with innovation, the commercial exploitation of knowledge (Gorij & Alipourian, 2011). On the other hand, Clarke (2001) highlights the emergence of KBE reliant on the effectiveness in developing and utilizing knowledge. Knowledge, embodied in new products and services, has become the primary source of wealth creation.

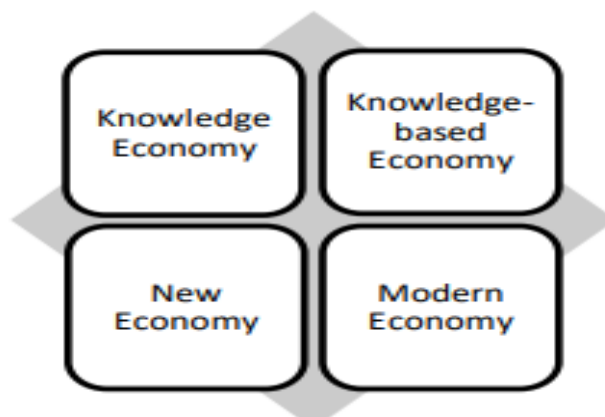


Figure 2.6: Knowledge economy: characteristics and dimensions.

Source: Hadad (2017, p. 204)

Information and knowledge become the crucial factors which affecting the economic development of every country. In 1996, the "Report of Knowledge Economics" published by OECD advocated that KBE will change patterns of the worldwide economic development, and knowledge will be a key capital to improve the production and economic growth (Chen et al., 2002). Moreover, the term KBE results from a fuller recognition of the role of knowledge and technology in economic growth. Knowledge, as embodied in human beings as HC and in technology, has always been central to economic development (OECD, 1996).

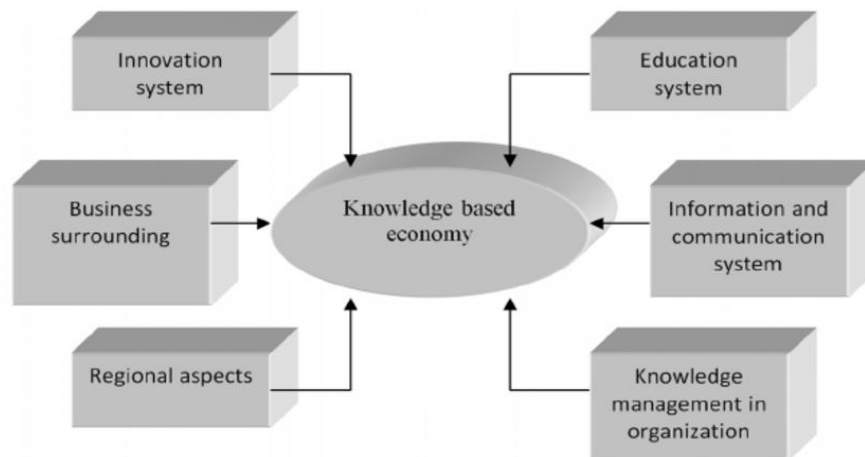


Figure 2.7: Management of knowledge acquisition from human sources in innovation transfer. Source: Zwiefka (2012, p. 42)

The concept of the term KBE has emerged due to the essential role that knowledge and technology plays in economic growth of a nation, as embodied in HC, innovations and IT (Juma, 2006). In addition, Engelbrecht (2009) stated that KBE can be defined in many different ways; they have to do with information, knowledge, learning, innovation, entrepreneurship, networks, and ICT. Moreover, Ceric (2001) showed several reasons that influence KE of knowledge on economic progress:

1. Progress in ICT that enables inexpensive and fast global transport of information and access to knowledge
2. Increased speed of scientific and technological advance that led to acceleration of growth of quantity of explicit scientific and technological knowledge
3. Increased global competition that led to reduced costs
4. Changing demand associated with rising incomes and change of tastes of citizens.

Godin (2006) stated that ‘The Knowledge-Based Economy: Conceptual Framework or Buzzword?’ and argued three parts in his paper:

1. The concept of a KBE re-emerged in the 1990s, arising from limitations in NSI then-current conceptual framework guiding science and technology policies.
2. The OECD’s efforts to promote the KBE, and the indicators developed to measure the concept.
3. The OECD as a think-tank is the key to understanding the popularity of the concept among member countries.

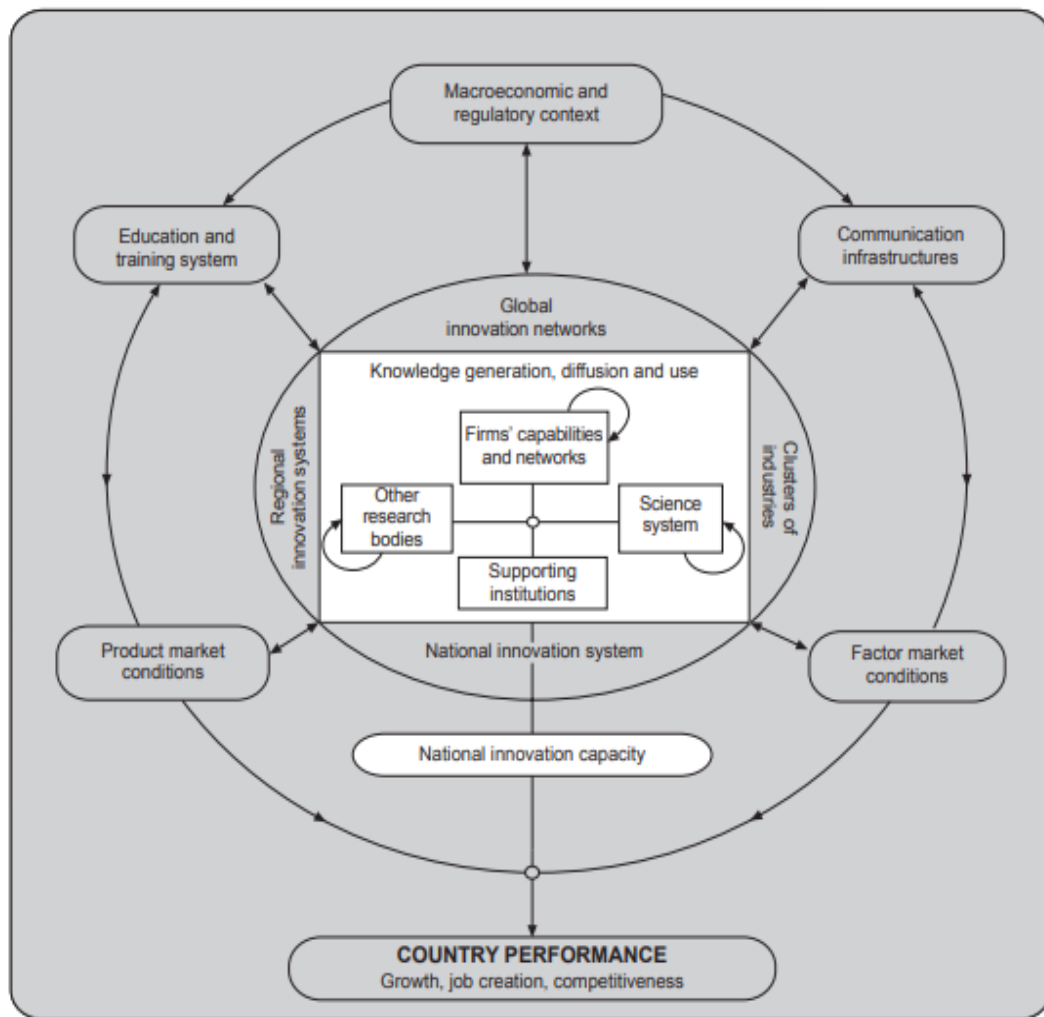


Figure 2.8: Managing national innovation systems

Source: OECD (1999, p. 23)

2.8 KBE in the world

During this study the researcher found that the number of scholars and researchers mentioned and investigated about building KBE in developing and developed countries such as United Arab Emirates, China, Australia, Saudi Arabia, Malaysia , South Africa, Russia, Europe, Nigeria, Bosnia and Herzegovina and India as well (Mustapha & Abdullah, 2004; Das & Das, 2008; Rahimic & Kozo, 2009; Yigitcanlar, 2010; Blankley & Booyens , 2010; Aswad et al., 2011; Shie et al., 2012; Chou & Gornitzka , 2014; Salem, 2014; Muhammad et al., 2015; Veselovsky et al., 2017).

OECD (1996) discussed knowledge codification in order to facilitate economic analysis; distinctions can be made between different kinds of knowledge which are important in the KBE:

Know-what refers to knowledge about “facts”.

Know-why refers to scientific knowledge of the principles and laws of nature.

Know-how refers to skills or the capability to do something.

Know-who involves information about who knows what and who knows how to do what.

Knowledge economy indicators (KEIs) provide a measure of the comparative status of a country. They afford a view of the bigger picture of a country’s performance in the modern KE, as well as enabling monitoring and benchmarking (Gault, 2007). Consequently, how indicators are helping building KE in South Africa, Blankley & Booyens (2010) explained in their study. They said about three indicators:

1. **Knowledge Creation Indicators:** Gross domestic expenditure on R & D, as a percentage of Gross Domestic Product (GDP) is one of the most important indicators of a country’s potential for innovation and growth. This indicator reflects the intensity of R & D performance in a country.
2. **Human Resource Indicators:** Highly skilled human resources are the most critical component when it comes to building a country’s capacity for a KBE.
3. **Industry and Global market place Indicators:** Industry and global market indicators are measures of overall competitiveness industry features in the international marketplace.

The researcher found her review of literature different organization has given different model to develop KBE including OECD Model, Harvard Model, APEC, Australian Bureau of Statistics (ABS), United Nations Economic Commission for Europe (UNECE).

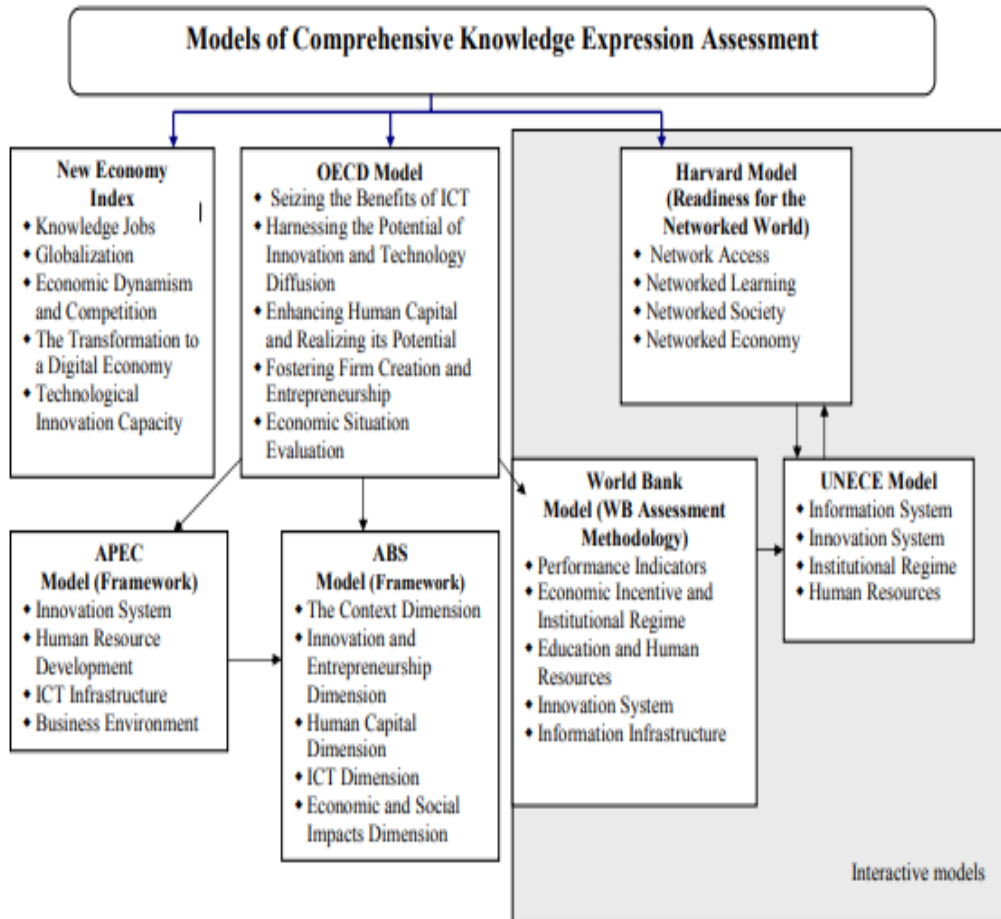


Figure 2.9: Towards knowledge-based economy: Modelling knowledge expression assessment. Source: Daugėlienė (2004)

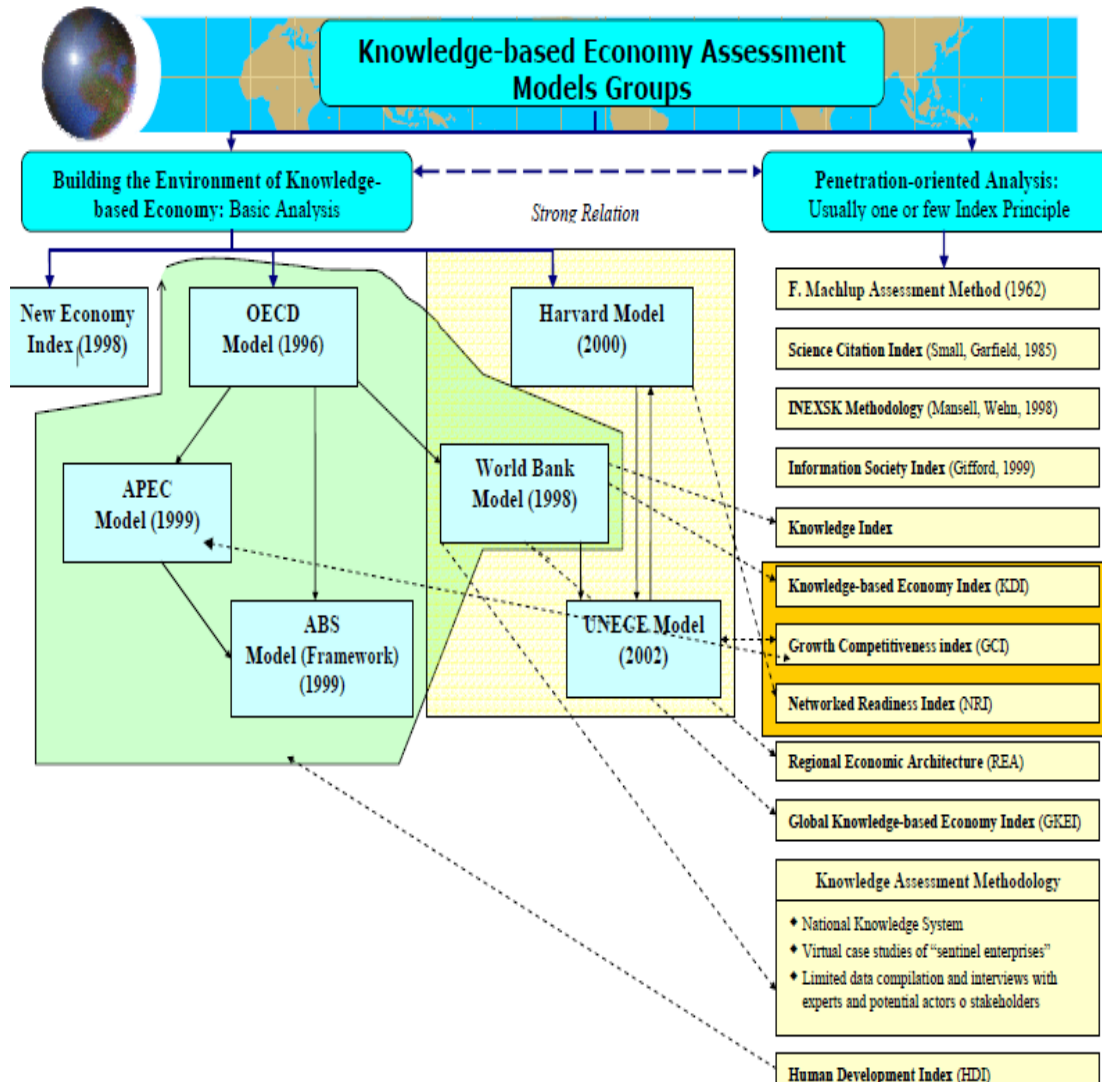


Figure 2.10: Peculiarities of knowledge-based economy assessment: theoretical approach.

Source: Daugeliene (2004)

Some of the frameworks are discussed below:

OECD Framework

Economic indicators are measures that summarize at a glance how an economic system is performing. OECD (1996) showed 4 indicators for the KBE:

1. Measuring knowledge inputs includes: i) expenditures on R & D; ii) employment of engineers and technical personnel; iii) patents; and iv) international balances of payments for technology

2. Measuring knowledge stocks and flows includes stock of knowledge capital and flow of embodied and disembodied knowledge
3. Measuring knowledge outputs are based on the assumption that certain knowledge-intensive sectors play a key role in the long-run performance of countries by producing spill-over benefits, providing high-skill and high-wage employment and generating higher returns to capital and labor.
4. Measuring knowledge networks are needed that capture the innovation process and this essentially involves measuring “national innovation systems”, including the ability of countries and systems to distribute knowledge among different actors and institutions.
5. Measuring knowledge and learning to develop “human capital indicators”, aimed particularly at measuring private and social rates of return to investment in education and training.

APEC Framework

Following with OECD, APEC (2000) showed some indicators to develop KBE. The empirical evidence suggests that among the more advanced economies of the world, economic growth is most sustainable for those which have all of the following characteristics:

1. Innovation and technological change are pervasive and supported by an effective national innovation system.
2. Human resource development is pervasive: education and training are of a high standard, widespread and continue throughout a person’s working life (and even beyond).
3. An efficient ICT operates, particularly which allows citizens and businesses readily and affordably access pertinent information from around the world.
4. The business environment is supportive of enterprise and innovation.

The World Bank Framework

| PILLAR 1 Economic and institutional regime | PILLAR 2 Education and skills | PILLAR 3 Information and communication infrastructure | PILLAR 4 Innovation system |
|--|--|---|---|
| The country's economic and institutional regime must provide incentives for the efficient use of existing knowledge, the acquisition of new knowledge, and the application of both to economic activity—to improve productivity, to raise quality, to innovate, and to launch new enterprises. | The country's people need education and skills that enable them to create and share knowledge, and to use it well. | A dynamic information infrastructure is needed to facilitate the effective communication, dissemination, and processing of information. | The country's innovation system—firms, research centers, universities, think tanks, consultants, and other organizations—must be capable of tapping the growing stock of global knowledge, assimilating and adapting it to local needs, and creating new technology that underpins the development of new products and processes that can compete in export markets and meet needs at home. |

Figure 2.11: Knowledge for development (K4D): The world bank institute's program on building knowledge economies. Source: The World Bank (2008, p. 5)

The Knowledge for Development (K4D) program at the World Bank Institute works to raise awareness among national policy makers of the powerful growth effects of knowledge, to encourage economic actors to combine global and local knowledge to highlight comparative advantage. K4D operates within a four-pillared framework that expresses the prerequisites for effective use of knowledge for economic growth. For development to a KBE requires effective action—reform, investment, coordination—in all four of these areas. Moreover, K4D offers products and services to help its clients reinforce the pillars of the KE: 1) Policy analysis 2) Learning events 3) Knowledge Assessment Methodology 4) Research and publications (The World Bank, 2007)

Knowledge Indexes

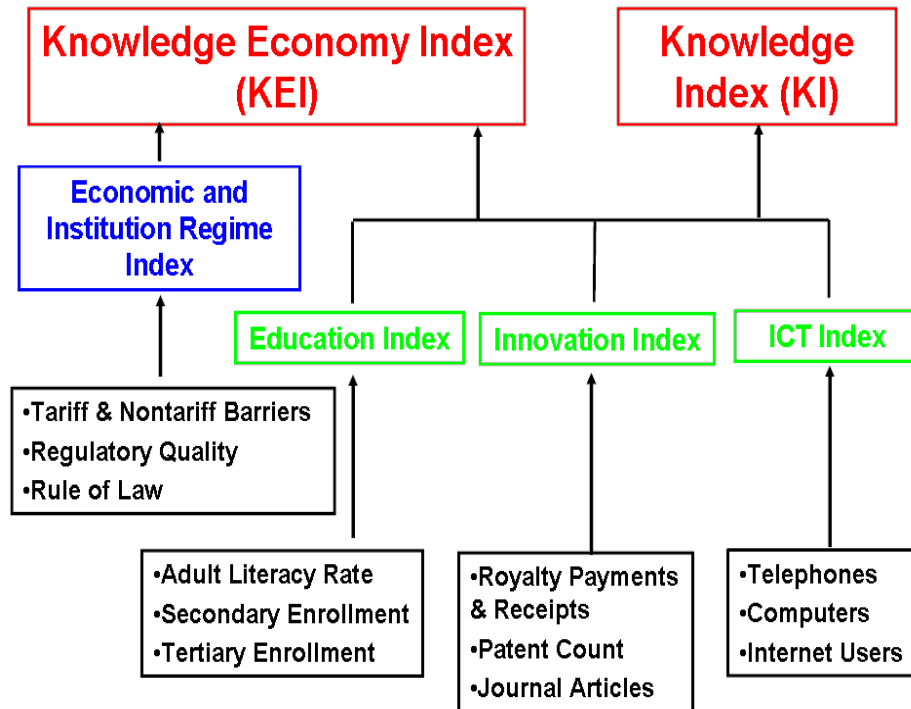


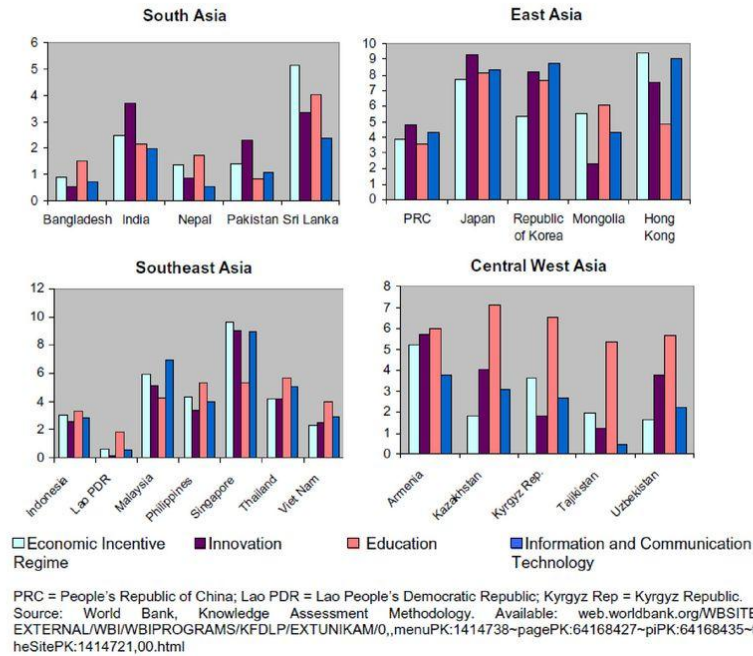
Figure 2.12: World Bank: knowledge economy index (KEI)

Source: The World Bank (2012)

Das & Das (2008) reported about many knowledge-based industries emerged in developed countries due to concerted efforts of advanced research, development and entrepreneurs nurtured talents and attracted creative and visionary people to establish KBE. Muhammad et al. (2015) stated that the importance of KBE cannot be overemphasized because its emergent that made ideas and technologies ingredients; made intellectual property merchandise; people expect smarter products with more convenience and technology leaders fuel the innovations. Therefore is no doubt that KBE is generating opportunities across all sectors in a number of developed and developing countries. K4D program has developed a database and a set of indexes to measure countries' progress on the four KE pillars. The Knowledge Assessment Methodology (KAM) (www.worldbank.org/kam) is a web-based tool that offers relevant factors to the KE. Based on the four-pillar framework, it is designed to help countries understand their strengths

and weaknesses by comparing their performance over time and their performance relative to other countries (The World Bank, 2007).

Knowledge-Based Economy Indicators for the Asian Region



27

Figure 2.13: Moving toward knowledge-based economies: Asian experiences.

Source: Asian Development Bank (2007. P.7)

2.9 Knowledge sharing (KS) and KBE

Knowledge and its efficient management constitute the key to success and survival for organizations in the highly dynamic and competitive world of today (Oye et al., 2011). Trust, employee's ignorance, behavior and motivation are impacting KS in the organization (Pangil & Moi Chan, 2014; Rahman et al., 2015; Wu & Zhang, 2015; Israilidis et al., 2015; Afsar, 2016; Yasir & Majid, 2017). KS success factors in organizational performance (Nooshinfard & Nemati-Anaraki, 2014; Vuori & Okkonen, 2012; Ismail et al., 2007; McDermott & O'dell, 2001). Moreover, the benefits of KS in the organizational learning and its impacts on better performance are discussed (Wai-Ling et al., 2009; Zhang & Jiang, 2015; Ahmad & Daghfous, 2010; Park & Kim, 2018; Friesl et al., 2011; Lin & Lo, 2015; Lee & Yu, 2011; Oye et al., 2011; Singh et al., 2011). In a KE, the value of HC far outweighs more

traditional, tangible forms, such as plant and equipment. Creating an ideal environment for knowledge workers is a formidable challenge. The key to success is the understanding that an attractive work environment alone is not sufficient to attract, retain and grow an increasingly global, and mobile, knowledge workforce. A total environment that integrates key elements of living, working, and learning is needed (Murray & Greenes, 2007).

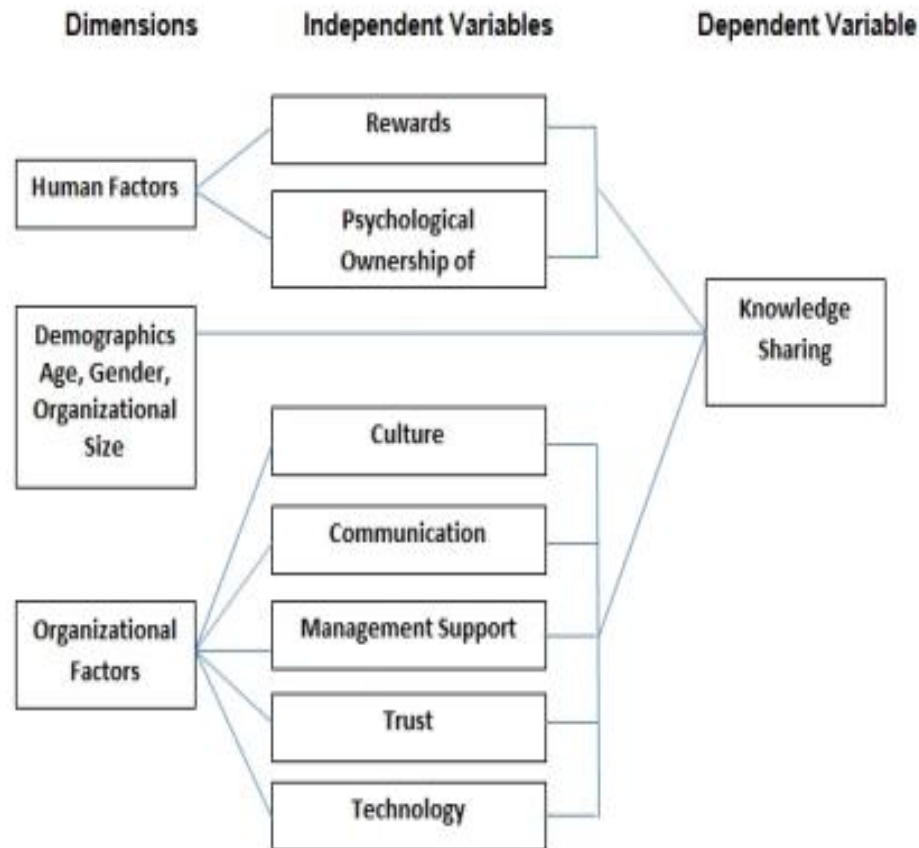


Figure 2.14: Knowledge sharing: assessment of factors affecting employee' motivation and behavior in the Lebanese organizations. Source: Hejase et al. (2014, p. 1562)

Culture is often seen as the key inhibitor of effective KS (McDermott & O'dell, 2001). Park & Kim (2018) indicated that transformational leadership directly affected the KS climate and behavior, interpersonal trust and organizational learning of an organization. Transformational leadership also indirectly affected organizational learning through knowledge climate and behavior, and interpersonal trust. Therefore, KS behavior positively

affected organizational learning. Janus (2016) showed three typical knowledge-related problems and KS goals for organizations.



Figure 2.15: Becoming a knowledge sharing organization.

Sources: Janus (2016, p. 7)

2.10 Review of building KBE: perspective Bangladesh

Bangladesh is on its way to becoming a middle income country by 2021. To achieve this status, rebuilding a KBE is essential. By transforming our vast human resources into skilled workforce equipped with innovative and creative abilities, create knowledge capital in Bangladesh replacing physical capital required for a KBE (Hassan, 2017). Moreover, Qamruzzaman & Ferdaous (2015) document focused some key areas for developing KBE of Bangladesh. They are as follows:

- Building the Knowledge Manpower
- Developing R&D
- Accelerating the Development of Info-structure
- Rearranging the Financial System
- Raising the Knowledge-content in Agriculture, Manufacturing and Services Sectors
- Formulating the Private Sector for the Change

Chowdhury & Alam (2009) recommended five main pillars to achieve ICT-Driven knowledge economy in Bangladesh. They are as follows: (a) modern telecommunications

Chapter 2: Literature Review

infrastructure or zones; expansion of telecommunication network and facilities to the rural areas (b) government support and incentives, including various ICT policies and legislation, instituting transparency and democratic procedures and (c) soft infrastructure, encompassing a highly skilled and internationally recognized workforce, capacity building plans, and entrepreneurship programs, (d) transparency and democratic government, and (e) innovation system. Islam et al. (n. d.) document stated about the major obstacles to develop KBE in Bangladesh among other countries in the KBE is non-availability of data on key parameters such as: education, ICT, R&D indicators, science and technology (S&T) innovations etc. However, they suggested some of the future policy guidelines for Bangladesh:

- Building the K-economy Manpower
- Intensifying S&T and R&D
- Accelerating Info-Structure development
- Restructuring the financial system
- Increasing export in knowledge intensive services
- Building tri-sectorial partnership

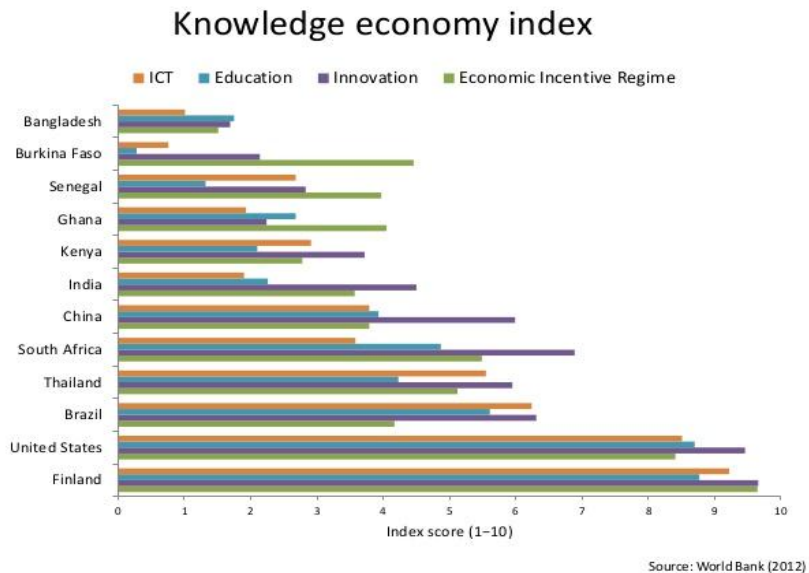


Figure 2.16: Comparative science, technology, and innovation systems in developing-country agriculture what can we measure and what can we not?

Source: Spielman (2013)

According to Dutta (2016), World Bank's KE framework is to evaluate the quality, adaptation, and use of knowledge in an economy with the goal of creating effective knowledge economies to compete with the advanced world.

2.11 Building KBE: review of the role of libraries and information professionals (IPs)

In the KE, libraries are seen as reservoirs for knowledge by making sources of high-quality information available to clients (Du Plessis & Mabunda, 2016). Hayes (2004) discussed the role of libraries in the KE. She stated that the KE and the growth of KM, as an essential competency of organizations, provides new opportunities for librarians and information specialists to expand existing roles and utilize the skills they have honed to meet corporate objectives. Moreover, the researcher found that the number of librarian, scholars, and researchers investigated regarding KBE and the role of libraries and the IPs in the world (Barker & Van Brakel, 1998; Tin & Al-Hawamdeh, 2002; Kargbo, 2011). In the KE era, the libraries will attach importance to professional training and lifelong education of library staffs to raise their scientific knowledge level and ability of acquiring and innovating knowledge. The objective of KM in the libraries is to promote knowledge innovation which is the core of the KE society (Shanhong, 2000). The basic aim of establishing libraries and other information organizations in modern societies is to be able to respond to the information needs of communities (Abdulsalami et al., 2013). Moreover, in the KE, the knowledge of people and organizations-their IC assets-are the primary factors of production and the source of wealth. Librarians are focusing on digital resources and an expanded use of virtual channels to deliver those resources. This view of the knowledge society presents new opportunities for librarians to leverage their IC (Bedford et al., 2015). However, effective contribution of librarians to KM and HC development will positively lead to the production of a workforce that could skillfully manage the economy of the nation to fruition. It will nurture a workforce that will bring about legitimacy and good governance to drive the ailing economy and achieve national economic growth (Chigbu & Anthonia, 2013). According to Nuut (2004), in the modern information society libraries have a new role and there are various types of library models:

Chapter 2: Literature Review

- traditional library as a memory institution
- library as a learning and research center
- library as a cultural and communication center
- electronic library
- virtual library

Moreover, libraries as platforms for innovation and creativity in library and information services involve a continuous improvement for individuals, groups, customers and the entire library setup. In an innovative and creative society, library and information services embedded in ICT becomes the main source of professional success and capability (Atata et al., 2014). On the other hand, while libraries have been active in facilitating access to information, in order to contribute toward KBE and KM they need to appreciate the emphasis on the effective creation and use of knowledge to respond to the requirements of the new environment (Chaudhry, n. d.). Therefore, libraries need to become more responsive to needs, proactive, network-based, individual-centric, specialized, of a place to enable access, integral to the mother organization's functions, part of a technical configuration (not administrative); target-oriented; mainly digital and electronic; technology savvy and capable of building alliance with ICT professionals; driven (Al-Shorbaji, 2016). Therefore, Hassan (2017) stated that the successful transition to KBE and developing Bangladesh as a knowledge-hub depends on higher education institutions including development of educational infrastructure, curriculum, research, innovation, as well as on the improvement of generic skills and enhancement of the use of technology in teaching and learning process. The senior positions required in the libraries in-depth ICT knowledge and skills (ICT principles, ICT infrastructure, software implementation, ICT policies, electronic records management systems, management information systems), communication skills (written and verbal), people management skills, leadership skills, interpersonal skills, problem solving and analytical skills, financial management skills, project management skills, change management skills, time management skills, and administrative skills (Ocholla & Shongwe, 2013). On the other hand, Longo (2001) mentioned that librarians need to aware of the dynamics with which human activities change because of technological innovations, and at the same time be aware of the

dynamics with which, at a personal level, accept, anticipate, and resist changes. The impact of IT encourages users to search information to retrieve the required information. It also helps the KE by promoting more of KM, more of Open Source Software, more of KS and R&D of KM (Krishnan, 2009). According to Velmurugan & Thavamani (2004), librarians can play the following an effective role as a member of the KM system.

- Analysis of documents, organization, classification and sorting, and their archiving for easy retrieval and faster dissemination.
- Creating knowledge maps to find out when and what is available.
- Generation of knowledge vocabulary for standardization of terms and retrieval.
- Acquisition of documents from external sources.
- Categorize the knowledge located inside or outside the organization for easy retrieval.
- Importing information literacy instruction to the users
- Training of users to maximize use of the knowledge repository

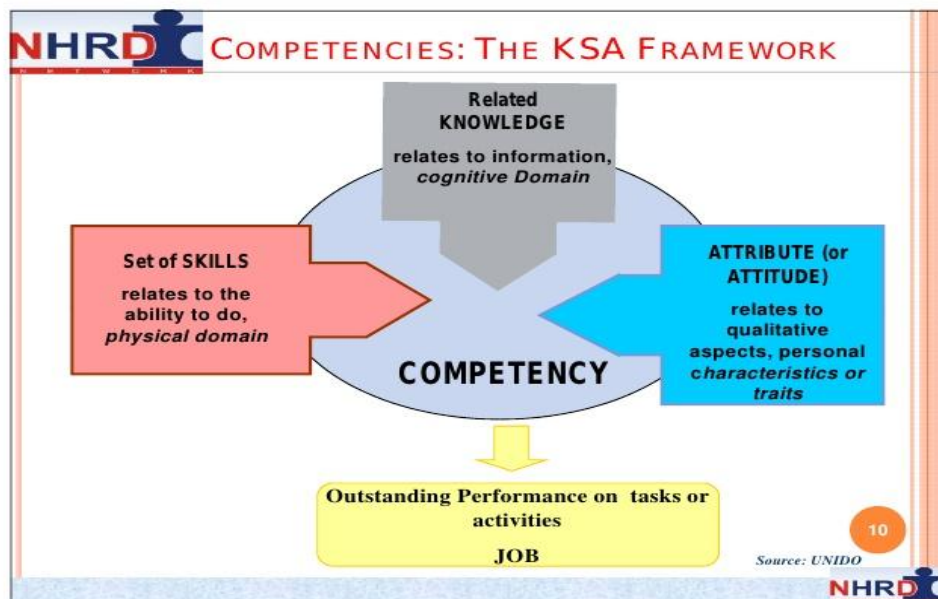


Figure 2.17: Competency frameworks. Source: Parker & Lobo (2011)

According to Australian Library and Information Associations (2010), special libraries provide a client focused library and information service using information resources and

technology to facilitate effective and efficient client access to information that supports the goals and business of the organization. According to Hashim & Mokhtar (2012) the foundations of the profession and the skills and roles associated with it will help to ensure librarians survival.

2.12 Review of KS initiatives in the libraries

KS intention and group identity are the keys to improve library service quality and sharing intention and group identity have important effects on knowledge quality (Liu, Chang & Hu, 2010). There are number of literature about KS in the libraries (Ngozi et al., 2014; Parirokh et al., 2008; Kortelainen & Rasinkangas, 2007). KS is believed by many organizations as a panacea for knowledge creation, and an important activity to boost innovation, improve productivity, and increase understanding among knowledge workers. KS has become a crucial activity in KM, and it is adopted by many organizations especially in the develop countries (Anna et al., 2013). The innovative community is interdisciplinary and cross-campus, the scattered research team and study group requires a library to extend the services to a logical system, while the virtual layer is to make this spatial decentralized and logically centralized system a reality (Shuhuai et al., 2009).

2.13 Chapter summary

The world has moved with new knowledge and technology; Bangladesh has a considerable measure of make up to do. Emphasis on KE is a key development priority for Bangladesh. Vision 2021 focuses on the 'Digital Bangladesh' strategy to highlight the tremendous capacity of ICT to help steer the country's development during the 'Perspective Plan' to move Bangladesh towards a poverty-free middle income prosperous country by 2021 (Planning Commission, 2012).

Above all the review of literature, the researcher found that Bangladesh has already moved forward to build KBE and Bangladesh have bigger plan to make middle income prosperous country by 2021. Moreover, every areas of the country need to develop themselves to support and make vision 2021 successful for Bangladesh. Therefore, all the sectors are

Chapter 2: Literature Review

developing with advanced technology and demands are increasing day-by-day to build KBE in Bangladesh. The researcher found that there is an existing gap in the literature for the IPs of special libraries are they aware of this changes that happen in Bangladesh. The IPs of special libraries are skilled enough to support this advanced Bangladesh. The researcher found that there is a lack of empirical research on the role of special libraries for building KBE in the Bangladesh. Because, the service of special libraries changing rapidly to fulfill demand of the users in the special organization to adjust with this modern economy. Therefore, this study will fill up the exiting gap of the literature. The aim of this study was to examine the role of special libraries for building KBE in Bangladesh. Moreover, we ascertain the perceptions of IPs in special libraries regarding KBE in Bangladesh. Furthermore, we want to identify the key skills needed for the IPs of special libraries to successfully engage KBE in Bangladesh. In addition, how we can expand from the traditional role to the modern role of IPs of special libraries, including LIS professionals, with greater capacity for building KBE in Bangladesh. Nevertheless, we want to explore the initiatives taken to facilitate KS activities in the special organization for KBE in Bangladesh.

Chapter 3

**Perceptions of Information
Professionals (IPs) of Special
Libraries regarding Knowledge-
based Economy (KBE) in
Bangladesh**

3.1 Introduction

To create attention and awareness of the modern economy, it is very important to ascertain the respondents' perceptions as an experienced information professionals (IPs) in the library and information science (LIS) education as well as LIS professionals regarding KBE for future development in Bangladesh. One of the objectives of this chapter is to analyze the perceptions of IPs of special libraries in Bangladesh regarding KBE. Witt (2011) described how actions are affected by the perception. Action abilities are dynamic, and factors that influence ability include body size, body control, energetic potential, and the demands of the task.

3.2 Data collection techniques

For collecting data, we employed survey method using one structured questionnaire with open and closed-ended questions. Face-to-face and telephonic interview techniques were used as instruments of data collection. To ascertain the perceptions of the IPs of special libraries regarding KBE, we applied seven-point Likert scales using the following scores: 1=Strongly Disagree; 2=Somewhat Disagree; 3=Disagree; 4=Neutral; 5=Somewhat Agree; 6=Agree; 7=Strongly Agree from Table 3.1 to 3.4. The first question was about the understanding of respondents' levels of agreement regarding KBE; the second question was about the respondents' perceptions about KBE; third question was about identifying respondents' opinions regards building KBE in Bangladesh; the fourth question was about respondent's views regarding the functional role of the IPs of special libraries to accelerate KBE; the fifth and last question was about the desired expanded modern role of the special librarian or the IPs of special libraries in the KE era. In addition, the respondents were invited to make additional comments on the modern roles of the IPs.

3.3 Data analysis methods

For data analysis, we used the descriptive analysis methods of SPSS 25.0. The mean and standard deviation of the responses were calculated based on the seven-point Likert scales

as mentioned above. In addition, Microsoft excels was used for graphical presentations of data.

The findings of the chapter discuss the overall scenario of perception of the IPs regarding KBE. The findings of this chapter are enumerated below:

3.4 Respondents' understandings on KBE

Table 3.1 indicates the respondents' level of agreements based on KBE. The findings are enumerated below:

3.4.1 Knowledge working as a capital for the economic growth and development

Knowledge is power. One of the principal aspects in KBE to understand is whether or not knowledge working as a capital for the economic growth. Knowledge is the source of growth for the economic development. According to Burton-Jones (2001), knowledge capitalism reveals how the shift to a KBE is redefining firms, empowering individuals and reshaping the links between learning and work. In this modern economic era, there is no alternative rather than knowledge. Knowledge is working as main driver of growth and development. At KBE, knowledge is the main source of income. To develop KBE in Bangladesh, the country needs to increase 'knowledge intensive activities' around the country. The respondents agreed with this statement, (with a mean score of 6.15). Some of the respondents stated that knowledge is essential if Bangladesh needs to involve in KBE. Similarly, another respondent stated that knowledge is the key to establish KBE.

Table 3.1: Respondents’ levels of agreements based on KBE

| Statements | N | Min. | Max. | Mean | Std. Dev. |
|---|----------|-------------|-------------|-------------|------------------|
| KBE is an economy in which knowledge working as a capital for the economic growth and development | 39 | 4 | 7 | 6.15 | .779 |
| KBE is a process to use new and existing knowledge to overcome the problem and improve the productivity growth in the future | 39 | 2 | 7 | 6.03 | .932 |
| KBE is based on Intellectual Capital which is employees’ brains, skills, ability, creativity and potentiality using to develop organizational economy | 39 | 3 | 7 | 6.15 | .844 |
| KBE creates an opportunity to encourage from national economy to international level | 39 | 4 | 7 | 6.05 | .972 |
| KBE is an economy where highly skilled people working as a human capital for the economic growth and development | 39 | 5 | 7 | 6.15 | .745 |
| KBE depends on entrepreneurship, innovation, research and development, peoples’ education and skills for growth and competitiveness in the global economy | 39 | 4 | 7 | 6.21 | .833 |
| KBE improves the competitiveness of science, research, technology and innovation for social development and creation of wealth | 39 | 5 | 7 | 6.05 | .686 |
| The World Bank’s Knowledge for Development (K4D) program is based on four pillars: (1) Economic and Institutional Regime, (2) Education and Skills, (3) Information and Communication Technology (ICT) (4) Innovation | 39 | 4 | 7 | 6.31 | .832 |
| Valid N (listwise) | 39 | | | | |

3.4.2 Process to overcome the problems and improve the productivity growth in the future

If there is a problem, then there will have a solution over there for the better achievement. KBE is the process to overcome problem and to develop in innovation, technology, education, highly skilled people, and modern use of ICT for developing economy. To solve the problem innovation is needed everywhere. Innovation is the key elements to drive KBE. Bylund (2014) stated that innovation is the foundations of KE. It is one of the biggest processes to overcome the problem in the organization and increasing the productivity growth in the future. The statement was also considered by the respondents with their own experience as one of the substantial factors with a mean score of 6.03 to overcome the problems and improve the development of Bangladesh in future. Some of the respondents stated that to overcome in the complex situation is necessary for the country. Therefore, KBE will be effective process for the country development. On the other hand, other respondents expressed that they are confused to answer whether KBE as a process to overcome the problem and improve productivity growth for the country.

3.4.3 KBE based on intellectual capital (IC) to develop organizational economy

IC is one of the most important features for developing organizational economy. It is the major part for understanding the performance of the workers. Therefore, it has significant business impact for the organizational performances. To develop KBE in Bangladesh, IC is necessary in the country to develop organizational economy as well. IC refers to intellectual material such as knowledge, information, intellectual property and experience that can be used to create wealth (Kannan & Aulbur, 2004). The IPs of special libraries can play as an IC to develop organizational economy. The respondents agreed with the statement (with a mean score of 6.15). Some of the respondents stated that if the IPs of special libraries need to work as an IC for the organization in the economic growth, the IPs need to be highly skilled including ICT, communication, analytical and innovation to support their organization.

3.4.4 Creates an opportunity to encourage from national economy to international level

KBE creates an opportunity to encourage Bangladeshi national economy to international level. “The K-economy gives us an opportunity to uplift national economy to international level” (Islam et al., n. d.). To develop Bangladesh national economy to international economy, KBE creates an opportunity to involve in the global economy. Bangladesh has already started moving to KBE. Wazed (2015) is the information technology adviser to the government of Bangladesh. He mentioned that Bangladesh’s booming economy, growing at a 6 percent annual rate, is driven by its well-known apparel industry. In addition, he also told that perhaps more critical to the country’s future, which stands to transform Bangladesh from a labor-intensive economy into a knowledge-based one. According to the statement, it has been clear that Bangladesh is moving to international level for becoming a developed country in the near future. The respondents also agreed with this statement, (with the mean score of 6.05) in Table 3.1. Some of the respondents reported that they knew about Bangladesh has a plan to become ‘Digital Bangladesh’ and become a middle-income country, but they were not familiar about the word ‘knowledge economy’ or ‘knowledge-based economy’. On the other hand, other respondents mentioned that through KBE, Bangladesh could move to international level and become developed country in future.

3.4.5 Highly skilled people works as human capital (HC) for the economic growth and development

The appeal for highly skilled people is aggregating day-by-day. HC accumulation has long been considered an important factor in economic development (Benhabib & Spiegel, 1994). In the knowledge economy (KE) era, knowledgeable or highly skilled person is a resource person to support the organization. If the organization has more highly skilled persons, the organization is going to perform better. If the organization has less skilled manpower that organization can’t perform well. Therefore, it effects on economic strength in the organization. The respondents agreed with this statement, (with a mean score of 6.15). Some of the respondents stated that the IPs of special libraries are working as

support for the development in the organization. In order to meet this demand of the KE, the IPs of special libraries should go further with new initiatives to develop their skill and more involved them with the training, workshop for development. Moreover, another respondent told that the IPs of special libraries could play as a 'Facilitator' for the organization to provide training and information to others.

3.4.6 Based on entrepreneurship, innovation, research & development (R&D), peoples' education and skills for growth and competitiveness in the global economy

KBE is an economy where knowledge is the main engine of economic growth and depends on education, R&D, innovation, and ICT for economic production. These areas of development create KBE in any country (Chen & Dahlman, 2005). Entrepreneurs are always trying to develop something new for the better future and success in different areas around the country. Therefore, it is a risky factor to work on. Moreover, entrepreneurship affects in knowledge economy (Asongu & Tchamyau, 2016). Entrepreneurship should be encouraged and needed to develop KBE in Bangladesh. Some of the respondents stated that the IPs of special libraries need to become entrepreneur for the organizational development. In the KE, where the business environment is characterized by turbulence and complexity, knowledge is the main source of creating both innovation and sustainable competitive advantage (Johannessen et al., 1999). Innovation is the better solution to solve the complex situation and these results in sustained economic growth. Most of the respondents reported that the IPs of special libraries need to be innovative, pro-active and creative. Another respondent stated that the IPs need to provide innovating service using digital tools and applications. However, R & D is also important to understand the weak point of any country. Moreover, it is the way to overcome the problem and go further for the development. Most of the respondents mentioned that R&D is mandatory for the country development and the IPs of special libraries can help the researcher providing current information, e-resources and show them how to use databases to get more information within short time. Education and universities, along with biotechnology, intellectual property and ICT development, are often mentioned without in-depth critical analysis in discussions of modern KE; the idea of the role of primary, secondary and

tertiary education will necessarily be refashioned in developing nations (Weber, 2011). Education is helping to develop people's skill for the workplace. Most of the respondents stated that quality of education and higher education is required to become skilled people to involve in KBE. To involve in the global economy, all of the areas need to improve and developed. The respondents of this study strongly agreed with this statement, with the mean score of 6.21.

3.4.7 Improves competitiveness of science & technology (S&T), research and innovation for social development and creation of wealth

KBE improves the competitiveness in the research S&T and more innovation in the business sector. Moreover, it helps for social development in the country. Furthermore, it also helps creating wealth for the better livelihood and prosperity in the country citizen. The respondents agreed with the statement (with mean score of 6.05) in Table 3.1. Some of the respondents stated that KBE will help Bangladesh to become more competitive in the international economy.

3.4.8 The World Bank's knowledge for development (k4D) program based on four pillars

Robertson (2008) stated that World Bank's knowledge for development (K4D) program is based on four pillars:

1. An economic and institutional regime that provides incentives for the efficient use of existing and new knowledge and the flourishing of entrepreneurship.
2. Educated and skilled populations that can create, share, and use knowledge well.
3. An efficient innovation system of firms, research centers, universities, think-tanks, consultants, and other organizations who can tap into the growing stock of global knowledge, assimilate and adapt it to local needs, and create new technology.
4. ICT that can facilitate the effective communication, dissemination, and processing of information. With the proper combination of these pillars, any country can pave its long-term sustainability in the prospect of economic growth.

The respondents agreed with the statement (with a mean score of 6.31). The World Bank showed if any country is developed with these four areas, the country will transfer to KBE. Most of the respondents stated that the IPs of special libraries need to develop themselves on those four areas to involve in building KBE in Bangladesh.

3.5 Respondents' perceptions on KBE

To see the current scenario and create awareness about KBE among the IPs of special libraries including LIS professionals in Bangladesh, it is very necessary to understand the opinions of respondents on KBE with their personal experiences. For understanding the perceptions, respondents were asked the questions in the Table 3.2. The findings are enumerated below:

Table 3.2: Respondents' perceptions on KBE

| Statements | N | Min. | Max. | Mean | Std. Dev. |
|--|----------|-------------|-------------|-------------|------------------|
| KBE is a new phenomenon for Information Professionals | 39 | 3 | 7 | 5.87 | 1.056 |
| KBE is difficult for me to understand | 39 | 1 | 6 | 3.77 | 1.459 |
| KBE will help to promote professional capacity in LIS Professionals with new opportunities | 39 | 4 | 7 | 6.08 | .807 |
| KBE will include in LIS curriculum in future | 39 | 4 | 7 | 5.82 | 1.097 |
| Special library will play a vital role for building KBE in Bangladesh | 39 | 4 | 7 | 5.97 | .986 |
| Valid N (listwise) | 39 | | | | |

3.5.1 New phenomenon for the IPs of special libraries

The main idea of knowledge-based society and KE creation and advancement forms may be accredited to the category of worldwide change forms (Melnikas, 2010). Therefore, in the knowledge-based society the IPs of special libraries also should aware of KBE and their position on the KE era. Some of the respondents in special libraries stated that the word is 'Knowledge-based Economy' is very new for them. On the other hand, some other

respondent asserted that their organization has already started working for KM and KBE. The respondents agreed with the statement, (with a mean score of 5.87).

3.5.2 Difficult to understand for the IPs of special libraries

Longo (2010) explained that a librarian can live nine lives in a KBE in her study and LIS professionals need to change their traditional to modern role, using more technology. Moreover, the findings of her study confirmed that librarian has significant role in KBE. Librarian's or the IPs of special libraries need to know and aware of the national innovation system to perform in the organizations core business. The respondents agreed with the statement (with a mean score of 6.08). Few of the respondents stated that KBE is difficult for them to understand. However, some of the respondents expressed that the word KBE was not very familiar to them, but they had already been working towards this.

3.5.3 Promoting professional capacity for LIS professionals

In a KE, the diversity of information resources generated demand for elaborate information literacy skills for patrons to use the resources. Librarians must be prepared to offer such skills if the resources have to be exploited to the user (Mutula, 2014). LIS professionals should aware of developing their skills to cope with the demand for the new digital world. Most of the interviewees strongly agreed with this statement. The respondents approved that KBE is going to help LIS professional with new opportunities (with the highest score mean of 6.08) in the job market. Moreover, they also express that through KBE, young LIS professionals, and the students of LIS education will be benefitted by this. However, in the early stages, students and young professionals can develop themselves and move forward with better career. In addition, another respondent asserted that KBE is highly effective and relevant for the LIS professional development.

3.5.4 Including KBE in the LIS curriculum

The key goal for curriculum planning is to develop educational experiences that create in the student's ability and desire to continue self-directed learning over a lifetime (Yim-Teo, 2004). The user-demand for information is changing day-by-day in the organization. In order to satisfy this increasing demand, KBE should be included in LIS curricula. This is the

most important statement for the LIS students who will become LIS professionals or the IPs in future. Some other respondents stated that create awareness and professional course regards KBE is necessary for the LIS professionals. The respondents strongly agreed with this statement (with a mean score of 5.97) in Table 3.2.

3.5.5 Special Libraries' role for building KBE in Bangladesh

Obama (2005) stated that “Libraries have a special role to play in our knowledge economy”. In this KE era, the librarian needs to be more innovative with their product of service. They need to have massive ICT knowledge to support the community in the special organization. Special libraries information is not open always in public. They help the country as well as the organization to keep more confidential information in the government settings. Special libraries are often called as KM center in the organization (Semertzaki, 2011). KM always connected with KBE. Therefore, special libraries are always forward-facing to develop KBE in Bangladesh. The respondents expressed that they have a role to develop KBE in Bangladesh. However, the respondents agreed with this statement, (with a mean score of 5.97). Moreover, some of the respondents highly recommended about special libraries in the organization are connected to the organizational economy in Bangladesh. Moreover, the respondents expressed that KBE is necessary for Bangladeshi economy (more details in Chapter 5).

3.6 Building KBE in Bangladesh

KBE is the most demandable aspects for Bangladesh to move forward becoming developed country in the future. To know and investigate the KBE, it needs to know how KBE can be built in Bangladesh. In the review of literature, we found OECD, APEC and the World Bank showed several indicators to develop KBE in the country to create national innovation system (Chapter 2). In the review of the literatures, it was found that a number of scholars and organizations recommended how KBE can be established in Bangladesh in their study and the reports (Chowdhury & Alam, 2009; Hassan, 2017; Islam et al., (n. d.); Qamruzzaman & Ferdaous, 2015; The World Bank, 2008; Asian Development Bank, 2007). After review of those literatures, we decided to find some good points to build KBE in

Bangladesh and ask the respondents of special libraries to get their perception and feedback regarding KBE in Bangladesh that has been noted in Table 3.3 and enumerated below:

3.6.1 Enhance the part of government to help and empower KBE

Government initiatives are continuously being designed to create stable and supportive environments; governments are beginning to play a critical role in nurturing e-readiness for developing new industries, enhancing the global competitiveness of companies, promoting innovation, and fostering fair competition (Jutla, Bodorik & Dhaliwal, 2002). The governments need to have a proper plan to enhance promoting and empowering for developing KBE in Bangladesh. Without government help and support, it is impossible to establish KBE in the country. The respondents strongly agreed with this statement, (with a mean score of 5.95) in Table 3.3. Consequently, we tried to get more feedback from the government organizations through the questionnaire regards KBE. Some of the respondents stated that the Bangladeshi government has already a good number of plans to establish the country as a knowledge-based one.

3.6.2 Develop political stability for better control and combating corruption

Developing political stability in Bangladesh is the major national concern. Rose (1992) stated that the language of political philosophy is the central point for the state and civil society, freedom and constraint, sovereignty and democracy. The government of Bangladesh needs to control this and combating corruption. The World Bank (2015) reported that Bangladeshi economy is maintaining macroeconomic stability and moving forward for Bangladesh's GDP growth and poverty reduction. To reach middle income status in Bangladesh, the country needs lasting political stability, investments to regain momentum, and increasing female labor participation. All the respondents stated that political stability is the significant barrier in developing the Bangladeshi economy. Moreover, they also reported that Bangladesh needs to overcome these problems to become developed country. The respondents also strongly agreed with the statement, (with a mean score of 6.08) in Table 3.3.

3.6.3 Include more in global economic system

Muhammad (2006) reported that globalization is a rational outcome of global economic progress, and that it is a process of (i) expansion of free trade; (ii) more integration of all economies of the world; (iii) more communication amongst different regions; (iv) faster diffusion of knowledge; (v) increasing mobility of capital and labor; (vi) increasing competition; and (vii) emergence of global economy-global market dominated by global institutions like the world bank, international monetary fund and world trade organization. To build KBE in Bangladesh, the country needs to understand the benefits of that process and more involvement with these global organizations. The respondents also agreed with this statement, (with a mean score of 5.72). Some of the respondents stated that Bangladesh should involve in more global economy and follow developing countries' economic system to achieve developed country status in near future. Moreover, the country needs to follow the international organization policy regarding economic growth.

3.6.4 Improve efficiency or quality of the labor force

Improving the efficiency or quality of the labor force in Bangladesh is an important factor to develop our national economy. Labor is the only factor of production, and only higher-skilled labor can produce higher-quality goods. In this setting, as aggregate HC grows, output growth consists of dropping lower-quality goods from production and adding higher-quality goods (Stokey, 1991). The respondents also strongly agreed with this statement for the development of Bangladesh with a mean score of 6.21 in Table 3.3. To involve KBE, the country needs to improve the quality of the labor force. The respondents stated that the IPs of special libraries need to improve efficiency to support the demand of the organizations. Moreover, some of the respondents shared that in some cases they struggled because of their lacking's of efficiency to support the organization.

Table 3.3: Respondents’ opinions on building KBE in Bangladesh

| Statements | N | Min. | Max. | Mean | Std. Dev. |
|--|----------|-------------|-------------|-------------|------------------|
| Enhance the part of government to help and empower KBE | 39 | 4 | 7 | 5.95 | .916 |
| Develop political stability for better control and combating corruption | 39 | 3 | 7 | 6.08 | .929 |
| Include more in global economic system | 39 | 4 | 7 | 5.72 | 1.050 |
| Improve efficiency or quality of the labor force | 39 | 4 | 7 | 6.21 | .951 |
| Increase human capital for an advanced Bangladesh | 39 | 4 | 7 | 6.15 | .745 |
| Grow public-private associations | 39 | 4 | 7 | 6.08 | 1.061 |
| Improve quality of education | 39 | 4 | 7 | 6.64 | .668 |
| Develop education for more lifelong learning | 39 | 5 | 7 | 6.38 | .747 |
| Increase education system for better employment opportunity | 39 | 5 | 7 | 6.41 | .677 |
| Build-up world-class universities and focuses in research and development with innovative work | 39 | 4 | 7 | 6.36 | .986 |
| Understand the potential of innovation in the service sector | 39 | 4 | 7 | 6.18 | .823 |
| Nurture “innovative entrepreneurs” | 39 | 4 | 7 | 6.13 | .801 |
| Increase investment for innovation | 39 | 4 | 7 | 6.31 | .766 |
| Move from speculation-driven economy to innovation-driven economy | 39 | 4 | 7 | 6.10 | .912 |
| Put resources into science and innovation for ability improvement | 39 | 3 | 7 | 6.13 | .894 |
| Set up progress ICT foundation for better access | 39 | 5 | 7 | 6.51 | .601 |
| Ensure general, moderate and fast broadband | 39 | 3 | 7 | 6.33 | .982 |
| Create gainful plans of action to scale up ICT-based applications | 39 | 3 | 7 | 6.28 | .916 |
| Advance e-government and public sector reform | 39 | 3 | 7 | 6.10 | 1.119 |
| Valid N (listwise) | 39 | | | | |

3.6.5 Increase HC for an advanced Bangladesh

Turning the large population of Bangladesh into effective and efficient, HC can bring impressive strides in alleviating nation's poverty and inequality. The country has been showing its promise in doing so, though there are some structural and functional flaws in its measures taken to create a strong HC (Khan et al., 2014). To develop KBE in Bangladesh HC is mandatory. Increase HC in Bangladesh in different areas will help the country for the better movement with efficient worker in future. However, HC, not only serves as an engine of growth, but also as a productive input along with labor and physical capital (Gould & Ruffin, 1995). Moreover, country needs to develop their HC to move forward with efficient labor force. The respondents agreed with this statement, (with a mean score of 6.15). Some of the respondents stated that country needs to create more opportunity for the citizen to develop their skill in Bangladesh. Moreover, other respondent reported that every organization should have some opportunity for the employees to develop their skills in certain areas.

3.6.6 Grow public-private associations

Public Private Partnerships (PPPs) have attracted worldwide attention and acquired a new resonance in the context of developing countries as an innovative policy tool for remedying the lack of dynamism in traditional public service delivery (Jamali, 2004). To establish KBE in Bangladesh, the country needs to work with more public and private sector and work together as associations for the development. The researcher found that there is creating awareness from Prime Minister's Office, by the PPPs Office in Bangladesh "Bangladesh is growing, be a part of it". To encourage the organization in the country government already started PPP program around the country, which is another sign of Bangladesh is moving forward to KBE. The respondents reported with a mean score of 6.08. Establish more public-private organizations are necessary in Bangladesh in order to develop and build KBE. Some of the respondents recommended that Bangladesh should start more PPP project for the country development.

3.6.7 Improve quality of education

The role of education is to foster students' cognitive, moral, and social development; for others, education is a means of promoting social cohesion and nation building; for others, it is a preparation for the world of work (Kellaghan & Greaney, 2001). A good numbers of respondents reported that Bangladeshi education system needs to develop. Moreover, the qualities of education need to be creative and innovative in the country. They also shared that the education should be more lifelong learning for the better future in the country. Chapman & Adams (2002) showed that quality of education factors includes: (i) inability to adequately staff and finance rapidly expanding education systems; (ii) research-based evidence of low levels soft learning in basic skills; (iii) new demands for advanced language, mathematics, and, increasingly, computer skills, stemming from industrialization; and (iv) financial crises that have had an adverse effect on education budgets. According to this, it can be said that the education system in Bangladesh needs to include more R&D, basic skills, and better plan to implement among the student to create a bright future. The respondents strongly agreed with the highest mean score of 6.64 in Table 3.3. In addition, quality improvement in the education is the major significant factor in Bangladesh. To construct KBE in Bangladesh, the advances quality of education is essential for the country.

3.6.8 Develop education for more lifelong learning

Education must be lifelong learning for everyone in Bangladesh. If Bangladesh is following their traditional teaching methods, it will be very difficult for the future generation to deal with changes in near future. The education system of Bangladesh needs to more real life-oriented and lifelong learning to establish our next generation more advanced to serve Bangladesh as a developed country. The students of Bangladesh should have the opportunity, to gain their practical experiences in the education sector. Tuschling & Engelmann (2006) described that lifelong learning attempts to change the field of learning from enclosed environments to a totality of learning events, while at the same time attempting to change the individuals into self-organizing learners. The respondents strongly agreed with this statement (with the mean score of 6.38) that the education

system should be lifelong and related to practical life in Bangladesh. Most of respondents shared that in their childhood education sometimes is not working for in their practical life. Moreover, they also stated that they didn't get chance to get practical knowledge in the past. Therefore, the respondents recommended that Bangladeshi education system needs to be developed and more lifelong learning.

3.6.9 Increase education system for better employment opportunity

Education is a human right for everyone. The education system of Bangladesh should offer lifelong learning and be effective in enabling people to achieve better employment opportunities. In the past, people who studied education system in Bangladesh were not always adequate for prepared employment in the job market. In the education sector of Bangladesh, targets and the planned are measured to achieve quality education for all the students. Therefore, they can develop skills and knowledge to achieve 'Sustainable Development Goal-4' by 2030 (Bangladesh Development Forum, 2018). The respondents expressed that they also struggled with the same problem, and strongly agreed with the statement (with a mean score of 6.41).

3.6.10 Build-up world-class universities and focuses in research and development (R&D) with innovative work

Universities are seen to be a key driver towards the KE. Accordingly, higher education institutions have been encouraged to develop links with industry and business in a series of new venture partnerships. This emphasis in higher education policy also accords with initiatives to promote greater entrepreneurial skills and activity within so-called national systems of innovation (Peters, 2003). The respondents stated that world class universities and focusing R&D is becoming is one of the major concerns in Bangladesh. There are several of public and private universities in Bangladesh, but many of them need strong support of R&D with innovative work. The respondents agreed with the statement (with a mean score of 6.36) in Table 3.3.

3.6.11 Understand the potential of innovation in the service sector

Understanding the importance of innovation in the service factor is necessary. Creating an awareness to innovate and an understanding the benefits of innovation service is very important. The services sector has emerged as the largest segment in and driving force of the economy, contributing to a growing share to GDP, trade and employment (United Nation, 2017). To create national innovation system in Bangladesh as well as KBE, every sector should have started innovative service. Innovation is the driver of KBE; it already been discussed in the review of literatures (Chapter 2). The respondents strongly agreed with the statement with a mean score of 6.18. The respondents reported that the IPs of special libraries need to have innovative service to avoid the complex situations.

3.6.12 Nurture “innovative entrepreneurs”

Bangladesh needs more and more innovation for development. Entrepreneurs should be encouraged by the population and the government. Because of the risky factor involved, entrepreneurs must be highly motivated. Poblete (2018) showed the entrepreneurs involved in innovative entrepreneurship are more likely to have higher growth expectations, with subjective values playing a direct and indirect role in entrepreneurs' expectations of firm growth. To encourage the potential innovative entrepreneurs is desperately needed for the country development. The respondents also agreed with this statement (with a mean score of 6.13) in Table 3.3. Some of the respondents reported that the IPs of special libraries need to become entrepreneur to involve in the modern economy.

3.6.13 Increase investment for innovation

Increasing investment in innovation is a significant factor. There should be investment from government and private organizations in entrepreneurs to encourage innovation. The risk factor could cause loss of motivation, but investment could help them overcome frustration and go further. The government should also encourage financial innovation in the capital market, which will assist in raising long-term capital for investment and expedite overall economic growth (Qamruzzaman & Jianguo, 2017). The respondents agreed with the statement (with a mean score of 6.31). Some of the respondents reported

that without proper investment innovation cannot be done. Therefore, the country needs to increase the budget for the innovation sector in Bangladesh.

3.6.14 Move from speculation-driven economy to innovation-driven economy

In Bangladesh, innovation-driven economy is needed to go further to become developed country in the future. The country needs to move from speculation-driven economy to innovation-driven economy and bring new ideas to solve the problem rather than thinking in traditional way. Goh (2005) reported that industrialization has always established a major objective of development strategy and government policy. To support private sector-led industrial development, innovation-driven industrial policy for fostering skills upgrading, enhance industrial growth and produce world-class exports, with lessons drawn from the experience of developed countries. The respondents agreed with this statement (with a mean score of 6.10) in Table 3.3. They also asserted that for building KBE in Bangladesh, the country requires more involvement in an innovation-driven economy.

3.6.15 Put resources into science and innovation for ability improvement

According to the Ministry of Science & Technology of Bangladesh (2011), the transformation of the new ideas for the commercial success is of vital importance to the nation's ability to achieve high economic growth and global competitiveness. Resources are important for developing personal ability. The respondents asserted that without proper and sufficient resources, ability or efficiency is not possible. Therefore, there should be proper platforms for science and innovation to practice in the organization to involve in KBE. The interviewees agreed with the statement (with a mean score of 6.13).

3.6.16 Set-up progress information and communication technology (ICT) foundation for better access

Bangladesh needs to create an ICT foundation for better access in the country. The country can consider the strategy to compliment the ongoing 'Digital Bangladesh', which will accelerate the information technology (IT) industry and utilize this sector as a platform for sustainable growth. This strategy can intensify efforts in specific areas: (a) speeding up IT

training/skills; (b) actively attracting international IT companies/investors (Google, Intel, etc.) to establish IT centers (R&D, Service); and (c) helping Bangladeshi entrepreneurs to start IT companies by providing funds/incubation, sales/business development/marketing support (Helal & Rahman, 2016). According to this article, Bangladesh needs ICT foundation for the knowledge-based world. The participants strongly agreed with this statement (with the second highest mean score of 6.51) in Table 3.3. The respondents stated that ICT foundation will create better opportunities in every sector for economic development in Bangladesh. Moreover, they also reported that the use of ICT in every sector the country can provide e-service to the citizen of Bangladesh. In addition, few other respondents shared that in some areas of e-service of government section in Bangladesh have already been started.

3.6.17 Ensure general, moderate and fast broadband

Bangladesh needs general, moderate and fast broadband for the country development to provide e-service to the country citizen. Without fast and high-speed internet, the service cannot be provided. Broadband networks are the key to the ongoing transformation of the ICT sector through the convergence of telecommunications, media, and computing (Khalil et al., 2009). If Bangladesh needs to develop every sector, the high-speed internet service for the country will badly be required. The respondents strongly believed with a mean score of 6.33 that without ensuring general, moderate and fast broadband in any areas development is impossible. The respondents reported that the government of Bangladesh needs to ensure for the country citizen to provide general, moderate and fast broadband to everyone.

3.6.18 Create gainful plans of action to scale up ICT-based applications

Mofleh, Wanous & Strachan (2008) reported that ICT in the developed world is entering into all aspects of life, including public services, commercial activities, education and health. In the developed countries, ICT applications provided an excellent tool to fit with their existing infrastructure, process and culture. The respondents strongly agreed with this statement with a mean score of 6.28. If the country has a proper plan for the ICT-based application to implement in the country, then citizen of the country in every areas will be

aware of this. The Bangladesh government has been playing a key role in framing policies to foster infrastructure developments in ICT (Helal & Rahman, 2016). As Bangladesh need highly skilled people to serve the country with better future, ICT-based applications is essential. Moreover, the respondents reported that a gainful of plans of ICT-based applications is necessary for the country citizen in Bangladesh.

3.6.19 Advance e-government and public-sector reform

Bangladesh needs inclusive e-participation policy, broad-ranging e-services, extensive open government data portals, extensive local contents in Bangla, expansion of internet access in remote areas, extensive e-ticketing for transports, overcoming digital divides between different sections of society, strategy for reducing national and local government paper works (Rahman, 2016). According to this article, it hardly understands that Bangladesh needs e-government service for digital Bangladesh. All the public sector needs to reform with modern ICT device and apps, digital tools as well as innovative service. Ndou (2004) stated that one of the main benefits of an e-government initiative consists of the promotion of ICT use in different sectors. In order to interact, transact and communicate electronically with businesses, citizens and other stakeholders, it is necessary to mandate the use of ICT tools and applications. The respondents strongly agreed with this statement (with a mean score of 6.10). Some of the respondents in special libraries shared that they are aware of this changes and struggle with develop themselves to provide service using the modern technologies. Moreover, some respondents told that they need to have training to provide the innovative service using the modern technologies in the respective organization.

3.7 The IPs functional roles of special libraries to accelerate KBE in Bangladesh

The direct access to the complex information environment described above necessitates a change in the role of librarians and the IPs, from gatekeepers to guides. Given the demands of the knowledge society the librarian must support learning at all levels (Wallis, 2005). To develop KBE in Bangladesh, the roles of the IPs in special libraries are being changed and modified. To adjust with significant changes in modern roles, the respondents from the

different organizations were asked how roles of the IPs in special libraries could be functional to accelerate KBE with specific reasons. The findings are enumerated below:

Table 3.4: The IPs functional roles in special libraries to accelerate KBE

| Statements | N | Min. | Max. | Mean | Std. Dev. |
|---|----------|-------------|-------------|-------------|------------------|
| Meet information needs to achieve the mission and goals of the organization | 39 | 4 | 7 | 6.31 | .800 |
| Preserve information to facilitate accurate decision making in corporate, academic and government settings | 39 | 5 | 7 | 6.38 | .711 |
| Provide the right information to the right people at the right time | 39 | 4 | 7 | 6.54 | .682 |
| Develop knowledge creation and innovation | 39 | 3 | 7 | 6.33 | .806 |
| Provide training to improve efficiency of the user | 39 | 5 | 7 | 6.31 | .694 |
| Build a dynamic and digitized collection of information resources | 39 | 5 | 7 | 6.44 | .680 |
| Promote media and digital literacy in the organization | 39 | 5 | 7 | 6.15 | .670 |
| Analyze and interpret the information which is originated, described, stored, organized, retrieved, disseminated, modified and used | 39 | 3 | 7 | 6.08 | 1.010 |
| Compete intelligence and market research for business development | 39 | 3 | 7 | 5.72 | .999 |
| Support for research and development | 39 | 5 | 7 | 6.59 | .549 |
| Valid N (listwise) | 39 | | | | |

3.7.1 Meet information needs to achieve the mission and goals of the organization

Meet information needs of the user are the biggest job that IPs of special libraries need to serve always. The information helps the users to understand the current scenario of the organizations and country performances in certain areas. Special libraries are working to promote the development for the organization. It also helps the organization to achieve

their mission and goals of the organizations. The respondents strongly agreed with this statement (with a mean score of 6.31). Moreover, they also explained that by providing right information to the users in timely manner, the IPs are always helping to achieve their mission and goals of the organization.

3.7.2 Preserve information to facilitate accurate decision making

Libraries are repositories of information with documentary sources, centers of storing and organizations for information and knowledge. The special librarian's job involves apart from providing traditional services through an operational documentary base and online searching the access, organization, sorting, repackaging, synthesizing, finding answers and understanding members' specializations (Weerasinghe, 2006). The respondents strongly agreed with this statement (with a mean score of 6.38). Therefore, the respondent's mentioned that the IPs of special libraries has been preserving information for accurate decision making for their organization as well as corporate, academic and government settings in the libraries or information centers.

3.7.3 Provide the right information to the right people at the right time

In the LIS profession, professional ethics requires for the LIS professionals or the IPs to provide right information to the right user in the right time in the right format. The respondents strongly agreed with this statement (with the highest mean score of 6.54). Special libraries are user-centric institutions and their main feature is the personalized quality services to expert patrons: they provide the right information to the right people at the right time to take the correct decisions ('just-for-you' model). The focus is 'just-on-time' and not 'just-in-case' information to the mission and goals of their parent organizations (Semertzaki, 2011). The respondents reported that modern librarians or the IPs of special libraries need to ensure that the right information is delivered to the right person in the right time to take the most appropriate decision in the organizations for the economic growth and development.

3.7.4 Develop knowledge creation and innovation

In the KE era, libraries are entrusted with the important job of carrying out research on development and application of information resources, construction of virtual libraries, protection of intellectual property rights in the electronic era, etc. and paving the way for knowledge innovation (Krishnan, 2009). In the modern economy era, librarian needs to be more innovative to provide innovative service. The respondents expressed with their own experiences that the IPs of special libraries need to work as an ‘Innovator’ or ‘Innovative Technology Leader’ in Bangladesh to involve in national innovation system in Bangladesh. The respondents strongly agreed with the statement (with a mean score of 6.33).

3.7.5 Provide training to improve efficiency of the user

This is the significant factors for the IPs of special libraries to the users in the KE era. The special librarian or an IPs modern role could be as ‘Facilitator’ to promote resources including information manually as well as digitally. The respondents explained that in the modern economy era, the IPs modern role could be more expanded and advanced level such as ‘Knowledge Management Specialist’, ‘Policy Maker’, ‘Innovative Technology Leader’ and others to provide training to the user for improving efficiency in the digital resources. The respondents agreed with the statement (with a mean score of 6.31). They also reported that the IPs of special libraries could arrange several workshops, symposia, and distance learning education and others to improve the competency of the users.

3.7.6 Build a dynamic and digitized collection of information resources

The digital revolution has transformed the intellectual function of traditional libraries. Digital libraries are providing the base for a set of distributed activities. They also provide a one-stop solution for speedy delivery in a reliable fashion. As libraries are being digitized and patrons demand is growing the concept of content management has been adapted to the library world (Kumar, 2010). The respondents strongly agreed with this statement, (with a mean score of 6.44). Moreover, the respondents shared that they are already concerned regarding building digital collection of information resources in their libraries or research centers in their individual organizations. Not only that, but also some of the

respondents reported that the collection of information resources in their organization is highly digitized and developed. Moreover, the users of the organization do not want any manual information.

3.7.7 Promote media and digital literacy in the organization

The respondents stated that promoting media and digital literacy is a challenging part for the IPs in special libraries among the organizations. Moreover, it is very difficult for them to encourage the user of the organization for using digital information in different media. Today, the IPs have more opportunities to expand from their traditional to modern role for organizing the digital content, especially of getting and filtering available information. The IPs of special libraries are expected to be elevated from managing the corporate information center to manage corporate knowledge and become Chief Information Officers (CIO), with greater responsibilities (Kumar, 2010). The respondents agreed with this statement (with a mean score of 6.15) in Table 3.4.

3.7.8 Analyze, interpret and use the information

“The Special Librarian’s job involves apart from providing traditional services through an operational documentary base and online searching the access, organization, sorting, repackaging, synthesizing, finding answers and understanding members’ specializations” (Weerasinghe, 2006, p. 551). The respondents noted that the librarian or the IPs of special libraries’ main role for the organization was to analyze and interpret the free flow information in the organization and around the country. Moreover, they need to describe, store, organize, retrieve, disseminate and modify the information for the organization. Furthermore, they also told that it helps the organization to represent to the country as well as in the world. The respondents strongly agreed with this statement (with a mean score of 6.08).

3.7.9 Compete intelligence and market research for business development

In today’s KE, library and information services are viewed as saleable products. More importantly, libraries have started treating their users as ‘customers.’ Marketing is a comprehensive term that describes all the processes and interactions that result in

satisfaction for users and revenue for the information firm (Chandratre & Chandratre, 2016). The respondents stated that the IPs of special libraries are playing a vital role to compete with other organization. Some of the respondents reported that the update and current information of the special organization is very important to represent the organization in public. The IPs of special libraries need to do market research for the business development. The respondents agreed with this statement (with a mean score of 5.72).

3.7.10 Support for R&D

Sharing research data has the potential to make research more reproducible and efficient (De Waard, 2016). Supporting R&D is one of the major significant roles for the IPs. Though R&D, the country can understand which part they need to develop for becoming a developed country. The IPs of special libraries can play a vital role to support the users and the researchers with information for collecting data in the research. The respondents told that the IPs of special libraries also can purchase subscribe databases, digital tools and software to support to the user. Moreover, they also recommended that the IPs of special libraries can decide important decision to purchase the relevant ICT tools to provide the current information to the user. To encourage using e-resources and digital resources, the IPs of special libraries are giving training to the user in R&D. The respondents strongly agreed with this statement (with the highest mean score of 6.59) in Table 3.4.

3.8 Desired modern and expanded roles of the special librarian or the IPs for contributing in KBE

Figure 3.1 represents the expanded modern roles for the IPs in the KE era in Bangladesh. It indicates that more than ninety-two percent (92.30%) of the respondents recommended that 'Knowledge Management Specialist' is the expanded desired role for the IPs to involve KBE in Bangladesh. On the other hand, more than sixty-one percent (61.53%) of the respondents, which is the second highest, also declared 'Database Manager' as the expected role for the IPs to develop KBE in Bangladesh. More than forty-six percent (46.15%) of the respondents stated that 'Information Broker' is the modern role for contributing KBE in

Bangladesh. Moreover, ‘Innovative Technology Leader’ was stated by 35.89% of the respondents in special libraries. In addition, 51.28% of the respondents recommended that ‘Facilitator’ is one of the expanded roles for the IPs of special libraries to involve KBE in Bangladesh.

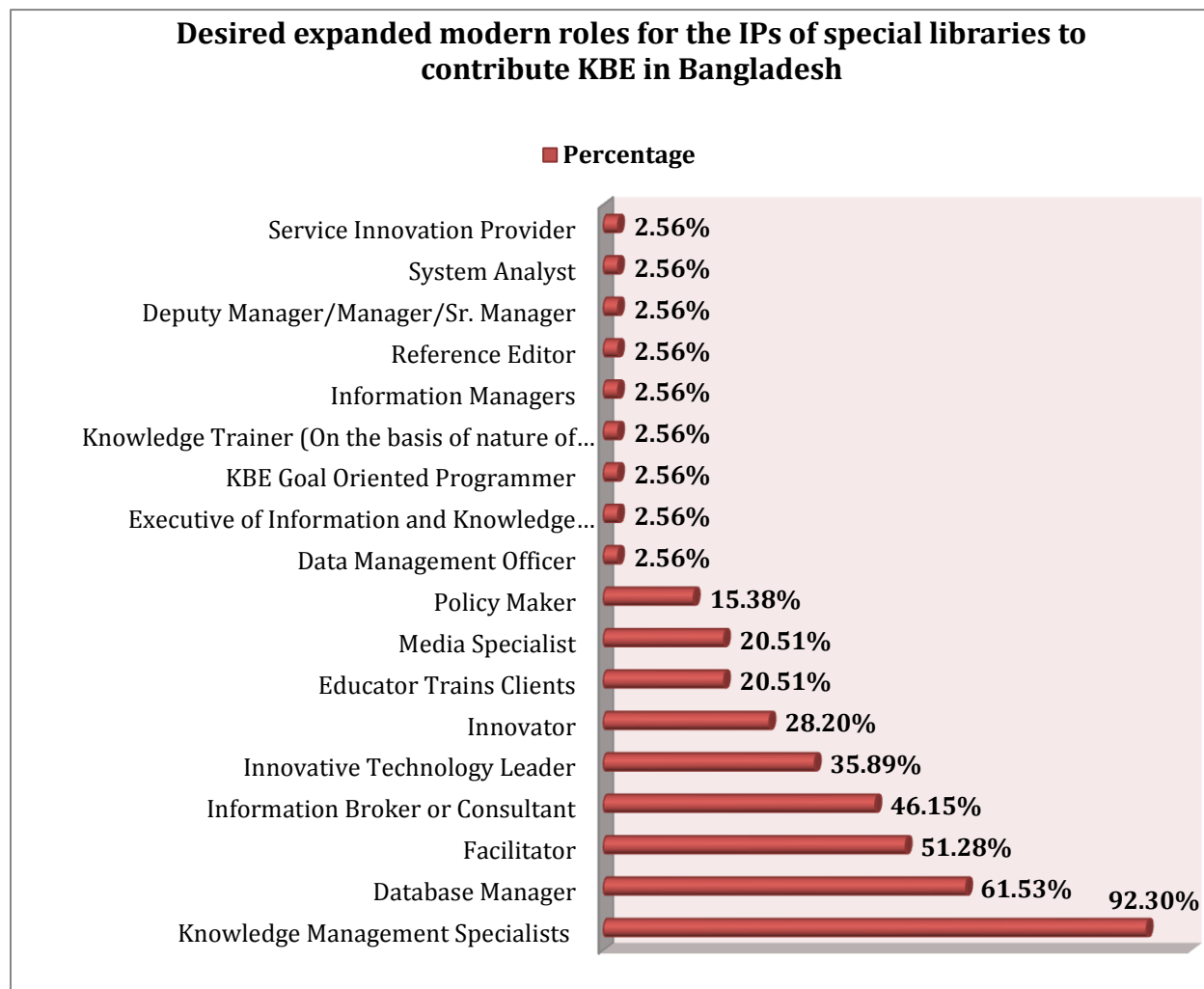


Figure 3.1: Desired expanded modern roles for the IPs of special libraries to contribute KBE

Furthermore, 20.51% of the respondents reported that ‘Educator Train Clients’ could be one of the desired roles for the IPs of special libraries. ‘Innovator’ was also another desired role asserted by the 28.20% of the respondents in the respective special libraries of Bangladesh. In addition, this is followed by ‘Policy Maker’ (15.38%), ‘Media Specialist’ and ‘Educator Trains Clients’ (20.51%) etc. the IPs modern role to contribute in KBE.

Interestingly, 2.56% of respondents mentioned that 'Data Management Officer', 'Executive of Information and Knowledge Management', 'KBE Goal Oriented Programmer', 'Knowledge Trainer' (On the basis of the nature of respective organization), 'Information Managers', 'Reference Editor', 'Deputy Manager/Manager/Sr. Manager', 'System Analyst', 'Service Innovation Provider' were also expanded desired roles for the IPs of special libraries for contributing KBE in Bangladesh.

3.9 Chapter summary

The result of this chapter on the perception of the IPs in special libraries regarding shows that the IPs perceptions is not a satisfactory level. The finding represents respondents' understandings and their perceptions about KBE in the Table 3.1 to 3.2. Moreover, the study examines respondent's opinions regarding how KBE can be built in Bangladesh and the result was very positive. Because respondents highly expressed that through the government help and initiatives, education, skills, entrepreneur, innovation, innovation entrepreneurs, and development in ICT with fast broadband, ICT plan and initiatives, e-government, e-service development, KBE can be developed in Bangladesh.

However, the IPs functional roles in special libraries to accelerate KBE is to meet information needs to achieve the mission and goal of the organization; preserve information to facilitate accurate decision making in academic and government settings; develop knowledge creation and innovation; deliver training to improve the efficiency of the user; develop a dynamic and digitized collection of information resources; promote media and digital literacy in the organization. Furthermore, the IPs more functional roles in special libraries for developing KBE is to analyze and interpret originated, described, stored, organized, retrieved disseminated, modified and used the information; compete intelligence and market research for organizational core business; and support for R&D in Bangladesh. In addition, the result of the IPs of special libraries expanded modern roles in the modern economy shows in Figure 3.1. The desired modern roles could be 'Knowledge Management Specialist', 'Database Manager', 'Information Broker', 'Innovative Technology Leader', 'Facilitator', 'Educator Train Clients', 'Innovator', 'Policy Maker', 'Media Specialist', 'Data Management Officer', 'Executive of Information and Knowledge Management', 'KBE

Chapter 3: Perceptions of the IPs of special libraries regarding KBE in Bangladesh

Goal Oriented Programmer', 'Knowledge Trainer', 'Information Managers', 'Reference Editor', 'Deputy Manager/Manager/Sr. Manager', 'System Analyst', 'Service Innovation Provider'. Moreover, some of the respondents stated that the IPs of special libraries' expanded roles more could be in the KE era 'Online Record Manager', 'Knowledge Manager' which is different from library, 'Monitoring and Evaluation Manager', 'Database Administrator', and 'Information Disseminator'.

Chapter 4
Skills and Competencies
Needed in Special Libraries for
Building KBE in Bangladesh

4.1 Introduction

The main aim of this chapter is to analyze the different skills and competencies for the information professionals (IPs) of special libraries that are needed for involving knowledge-based economy (KBE) in Bangladesh. Therefore, the IPs of special libraries need to develop a broad range of skills for contributing to the knowledge economy (KE) in Bangladesh. Education and skills development are crucial to improve and sustain productivity and income-earning opportunities at work. Without a workforce that is continuously acquiring new and improved skills, it will be difficult for a country to compete in the globalizing world (Khan et al., 2009). Skill development is the important part of economic development in Bangladesh. The developed countries were moving forward with their highly skilled people, which already been discussed in the review of the literatures (Chapter 2). A good number of the IPs are working in special libraries of special organizations in Bangladesh. Therefore, the IPs of special libraries are contributing their salary for better livelihood in their family life and also helping government with taxes to move Bangladesh with modern economy. Australian Library and Information Association (ALIA)-(2013) showed that how the roles of libraries is changing over period of time. The libraries are always connected people with the information and ideas. The service also has been changed day-by-day. Similarly, ALIA revealed that the environment for self-directed learning and library is changing to become community meeting places and learning commons. We found that the same situation happened in the special libraries of Bangladesh. Libraries are changing continuously, more traditional to digital, knowledge is moving printed version to digital version, the IPs as well as Library and Information Science (LIS) professionals and students of LIS education should aware of this changes. Therefore, it is necessary to develop their skills and competencies in Bangladesh.

4.2 Data collection techniques

For collecting data, we employed survey method with one structured questionnaire consisting of open and closed-ended questions. Face-to-face and telephonic interview were also carried out to gather data. To identify the key skills that are needed for the IPs of

special libraries to engage KBE in Bangladesh, we used seven-point Likert scales with the following scores: 1=Strongly Disagree; 2=Somewhat Disagree; 3=Disagree; 4=Neutral; 5=Somewhat Agree; 6=Agree; 7=Strongly Agree. The responses are noted from Table 4.1 to 4.3. It respondents were asked about the key skills and competencies that are needed for the IPs of special libraries to involve in KBE. The first question was about the key skills that are required for the IPs to engage KBE in Bangladesh; the second question was about qualities of the IPs in this KE era; third question was about critical characteristics or attributes on hiring as a resource person or an IPs to accelerate KBE in the respective organization. Moreover, fourth question was the numbers of professionals or staffs are working in those respective special libraries including LIS professional, semi-professional and non-professional; fifth question was about the barriers for the IPs to accelerate KBE in Bangladesh. In addition, sixth question was how the IPs can develop their skills to build KBE in Bangladesh with some suitable suggestions; and seventh question was to the respondents about recommendations for the students of LIS education to develop their skills before entering into the workplace. Furthermore, the last question was asked to the respondents, whether they agree that special libraries are playing significant role for building KBE in Bangladesh, if they agreed, they are requested to recommend some more opportunities as much as they think the role of the IPs could be more effective to develop KBE in Bangladesh.

4.3 Data analysis methods

For data analysis, we used the descriptive analysis methods of SPSS 25.0. The mean and standard deviation of the responses were calculated based on the seven-point Likert scales as mentioned above. Microsoft excels was also used for graphical presentations of data. We compared the means and the standard deviations among different factors as well. In the qualitative research, data was collected from the respondents' behaviors, their personal views and experiences from the different organizations. Anonymity was essential for the respondents to protect their identity and confidentiality for this research. There are a number of researchers recommended about using coding system in the qualitative research to keep anonymity in the study (see in chapter one). Therefore, we also used the

coding system for the respondents such as R1, R2, R3.....R39 denoting Respondent 1, Respondent 2, Respondent 3,.....Respondent 39 etc. However, the findings are enumerated below:

4.4 Key skills and competencies needed for the IPs of special libraries

Figure 4.1 indicates that the highest numbers more than eighty-nine percent (89.74%) of the respondents stated that strong 'ICT skills' is essential for the IPs of special libraries to include in KBE of Bangladesh. On the other hand, more than eighty-seven (87.17%) of the respondents reported that the IPs need strong 'Information Management skills' which is the second highest skill in the percentages, in different organizations to manage the information both printed and digital.

Moreover, more than eighty-four percent (84.61%) of the respondents mentioned that 'Communication skills' is the third highest skills and very important for the IPs to represent themselves in the organization. Without proper communication whether it is orally or writing among the organization, it is not possible for the IPs of special libraries to contribute KBE in Bangladesh. Communication is the way to provide the user-oriented service for the IPs in the organization. Subsequently, 76.92% of the respondents reported that 'Creativity and Innovation skills' is necessary for the IPs of special libraries for involving KBE in Bangladesh. Moreover, 71.79% of the respondents shared that 'Leadership skills' is one of the major skills, which is essential for the IPs to contribute KBE in Bangladesh. Furthermore, 69.23% of the respondents asserted that 'Analytical skills' is the highly demand for the special organizations of Bangladesh.

More than sixty-six percent (66.66%) of the respondents mentioned that 'Management skills' is essential for the IPs of special libraries. Moreover, 'Intellectual skills' is another important skill, which also reported by the 58.97% of the respondents for the IPs to include themselves in the modern economy. 'Initiative and Self-direction skills' is also necessary for the IPs of special libraries expressed by 53.84% of the respondents to develop the service of the special libraries. 'Media Literacy skills' was also recommended by the number

35.89% of the respondents, which is important for the IPs to support the user-oriented service in the special libraries of Bangladesh.

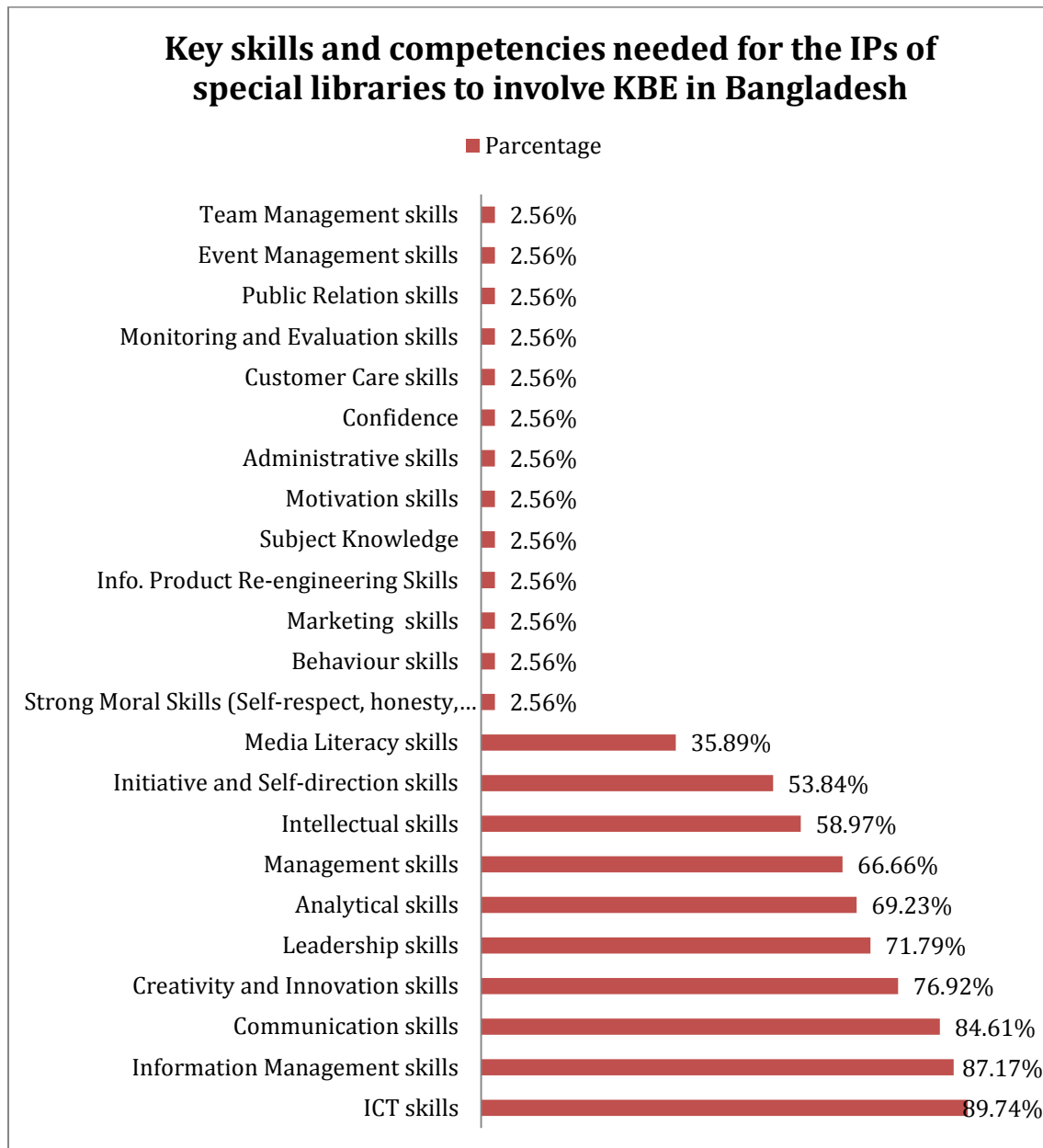


Figure 4.1: Key skills and competencies needed for the IPs of special libraries

Interestingly, only 2.56% of the respondents stated that some other skills and competencies such as ‘Strong Moral skills’ (Self-respect, honesty, and dignity), ‘Behavior skills’, ‘Marketing skills’, ‘Info. Product Re-engineering skills’, ‘Subject Knowledge’, ‘Motivation skills’, ‘Administrative skills’, ‘Confidence’, ‘Customer Care Skills’, ‘Monitoring

and Evaluation skills', 'Public Relation skills', 'Event Management skills', and 'Team Management skills' are also necessary for the IPs of special libraries to implicate KBE in Bangladesh.

4.5 Qualities of the IPs in the KE era

To understand the quality of the IPs in the KE era, the respondents were asked to indicate their levels of agreements with specific some reasons with significant factors according to their own experiences. Table 4.1 indicates the qualities of the IP in KE era. The findings are enumerated below:

4.5.1 Communicate both orally and in writing

The role of librarians is changing with difficult tasks; at this point it is extremely important for them to have effective communication skills. Librarians and libraries acts as a bridge between users and users of the library or institutional administrators (Kakirman-Yildiz, 2017). To communicate with the users orally or in writing is the major concern for the IPs of special libraries, because of their user-oriented service. One of the major aspects is that to provide information in printed or digital to the user, the IPs need to communicate with the user of the organization. If the IPs are failed to express the communicable information to the users, they will not get credit of their work. Therefore, they need to communicate clearly with the user to provide the right information and also need to work as a 'Facilitator' in the organization. The researcher found that the number of literatures stated about communication skills is very important in everywhere (Burlison & Samter, 1990; Baron & Strout-Dapaz, 2001; Tulsy, 2005). The respondents strongly agreed with this statement (with a mean score of 6.46). The respondents stated that without strong communication skills, the IPs of special libraries cannot engage themselves on KBE in Bangladesh. Moreover, they also expressed that the IPs form other types of libraries in Bangladesh as well as LIS professionals should develop their communication skills for better future. Moreover, the IPs of special libraries strongly needed to develop their communications skills to more involve in this modern economy.

Table 4.1: Expected qualities of the IPs in the KE era

| Statements | N | Min. | Max. | Mean | Std. Dev. |
|---|----|------|------|------|-----------|
| Communicate both orally and in writing | 39 | 3 | 7 | 6.46 | .822 |
| Provide strong level of customer services | 39 | 5 | 7 | 6.41 | .637 |
| Adapt to new tools, systems, and situations | 39 | 5 | 7 | 6.38 | .633 |
| Work as a team player maintaining effective working relationships | 39 | 5 | 7 | 6.31 | .694 |
| Overcome issues by focusing on solutions instead of on the problems | 39 | 4 | 7 | 6.00 | .973 |
| Understand the importance of IT and flow of information | 39 | 4 | 7 | 6.51 | .683 |
| Manage the environment, physical and digital assets | 39 | 4 | 7 | 6.21 | .923 |
| Involve in knowledge creation and innovation | 39 | 5 | 7 | 6.26 | .637 |
| Exercise new initiative and work independently | 39 | 5 | 7 | 6.23 | .742 |
| Find information quickly using online catalog , digital resources and databases | 39 | 4 | 7 | 6.44 | .754 |
| Identify and evaluate information services, sources and products | 39 | 4 | 7 | 6.33 | .772 |
| Integrated and widespread ICT applications | 39 | 4 | 7 | 6.54 | .682 |
| Valid N (listwise) | 39 | | | | |

4.5.2 Provide strong level of customer services

Customer service is the important part in the libraries. Special libraries are performing as a 'Knowledge Center' to provide information in the organizations. It is necessary to improve strong level of customer service for the IPs of special libraries through printed or digital of Bangladesh to contribute in KBE. Therefore, special libraries should develop their customer service on the basis of their user satisfaction. Weinstein & McFarlane (2017) stated that to succeed in the moving market, the IPs must follow five keys activities: (a) manage information and understandings; (b) adapt to new requests of customers; (c) hire skilled and highly educated staff; (d) influence technology, new media, and social networking; and

(e) outthink their direct and indirect contestants. The respondents agreed with this statement, (with a mean score of 6.41) in Table 4.1. Some of the respondents reported that providing customer service is the traditional job what they are providing continuously. But to contribute in KBE, the IPs of special libraries need to practice more advanced technologies and more digital applications for providing strong customer service to the users very quickly.

4.5.3 Adapt to new tools, systems, and situations

Librarian or the IPs of special libraries are adapting with new tools in the library to improve their library services for the user. The IPs need to adjust with modern digital tools, digital systems and situation in the special libraries. The user-demand of the special libraries are also changing rapidly. The users of the special libraries want more information in digital form. Therefore, it is necessary for the IPs of special libraries to adjust on this digital environment and adapt with this new changes. Blackburn (2011) showed that the libraries are adapting technology over time and technology is becoming a quick candidate as a solution to nearly every problem existing in the field. The respondents agreed with this statement (with a mean score of 6.38) in Table 4.1. The respondents expressed that they are struggling to adapt new tools such as maker space, digital applications, robotics, 3D and 4D models in the library and lots of project making activity. On the other hand, some of the respondents from the government organizations shared that they need training to use more databases, digital applications. Moreover, the respondents also reported that the users of the special libraries prefer more information in digital. They want to work from home accessing digital form of information rather than come to the library for collecting information now-a-days.

4.5.4 Work as a strong team player maintaining effective working relationships

Today's teams are different from the team of the past: they are far more diverse, dispersed, digital, and dynamic (with frequent changes in membership). But while teams face new hurdles, their success still hinges on a core set of fundamentals for group collaboration (Hass & Mortensen, 2016). Strong team player is very important to organize events in the

libraries or information centers in the organizations. Strong team also improves confidence, attitudes, motivation among the participants in the organizations. It also helps clear information between each of the team member through collaboration. The respondents have sincerely agreed with this statement (with a mean score of 6.31). The respondent explained that team work creates commitment, qualities of the work and sometimes coming with good solution and innovations for the library. Moreover, the respondents also mentioned that effective working relationship between the colleagues in the organization, make the organization a success. In addition, the respondents recommended that the IPs of special libraries need to give strong support and work as a strong team with other departments, to solve the complex situation and create more innovations in the organization.

4.5.5 Overcome issues by focusing on solutions instead of on the problems

The major strategies for overcoming the challenges include constant evaluation of automation facilities, adequate and regular systems upgrade, and provision of skilled manpower and periodic and regular training of librarians and paraprofessionals in the use of modern information and communication technology (ICT) facilities (Chikodi & Obidike, 2015). The IPs should concern more instead of solutions rather than problems in the special libraries. The respondents stated that it is necessary for the IPs to think creatively for overcoming the problems in a complex situation; they need to be more innovative to solve the problems. Moreover, the respondents reported that the IPs need to be innovative rather than thinking traditional way to finish the work. The respondents strongly agreed with this statement (with a mean score of 6.00) in Table 4.1.

4.5.6 Understand the importance of information technology (IT) and flows of information

The free flow of information can operate effectively and efficiently, if librarian in-charge of libraries can plan, direct, co-ordinate and motivate their members or staff in the organization. Equally, the librarians get the feedback about the performance of their libraries from their clientele through the free flow of information (Oyadonghan, 2010). The

Chapter 4: Skills and competencies needed in special libraries for building KBE in Bangladesh

respondents strongly agreed with this statement (with the highest mean score of 6.51). The IPs of special libraries always need to be aware of that; they need to provide the current and relevant information to the user. Some of the respondents stated that the IPs of special libraries need to provide free flow of information. On the other hand, some other respondents asserted that sometime free flow of information could be risky for the organization or even countries' confidential matters. Jain & Saraf (2013) reported that libraries are empowering the users with information. Only free flow of information can reduce the digital divide/information divide among the citizens. Now there is several number of national and international laws related to the right to information to apply the benefit of the poor human beings and make them well-informed, self-dependent, and respectable citizens. The researcher found that there are number of national and international organizations in Bangladesh, who are working for the human rights. Moreover, those organizations want free flow of the information to make poor human beings to make better citizens. Therefore, it is necessary for the IPs of special libraries to provide these types of services in the organization. If the IPs are failed to provide these services, the organization will choose someone from other areas who can fill up the requirements of this free flow information. Some of the respondents expressed that the IPs of special libraries need to develop their skills to work on those organizations to contribute KBE in Bangladesh.

4.5.7 Manage the environment, physical and digital assets

In today's media-rich digital landscape, it is becoming increasingly common for the organizations to have a digital archivist, digital librarian or digital preservation officer on staff to create strategies for the immediate use and long-term preservation of the organization's digital records for managing digital resources in a way that allows for good arrangement, categorization, and description for the appropriate users (Widen, 2018). Now-a-days, after discussed with the respondents in special libraries the researcher found that some of the national and international organizations preferring the digital technologies rather than manual version. Therefore, the IPs of some organizations didn't work with physical book; they need to provide all digital information to the user of those

organizations. Their all services are based on digital. The respondents reported that the IPs of special libraries need to develop their skills to manage this environment. The respondents strongly agreed with this statement (with a mean score of 6.21) in Table 4.1.

4.5.8 Involve in knowledge creation and innovation

The IPs of special libraries need to improve their user-service in more innovative way. They need to involve in knowledge creation and innovation in the libraries. Islam et al. (2015) found service innovation and innovative projects in the library such as wireless library, group works for technology, signs all around, free computer identifier all over the library, 3D animation lab as well as data management center, using e-books, new spaces for team work and discussions, providing maker spaces, library refurbishment, learning zone (common), digital strategy, digital by default, flipped learning, etc. The number of the respondents expressed that they are highly concerned about innovation in the library or in the organization. The respondents were strongly agreed with this statement, (with a mean score of 6.26). In the competitive market, knowledge creation and innovation is highly demandable and main concern for them. Some of the respondents shared that they have started this type of innovative projects in the library. But after meeting with them in face-to-face interview, the researcher found that respondents of the respective organizations need to develop themselves for that kind of services. Moreover, the IPs of special libraries are already struggling to adjust them with this types of services for the users.

4.5.9 Exercise new initiative and work independently

Association of Independent Information Professionals (2018) showed that independent information professionals go by many names: researcher, freelancer, contractor, consultant, knowledge manager, content developer, and more. The IPs of special libraries can work independently. They can develop their leadership skills to consist of KBE in Bangladesh. The respondent stated that the IPs of special libraries requirements to take new initiatives for introducing the service innovation in the special libraries. Not only the service innovations but also they need to introduce the digital technology to the users of the organizations. Moreover, they also expressed that IPs need to develop their respective

special libraries according to the users demand. The respondents agreed with this statement, (with a mean score of 6.23).

4.5.10 Find information quickly using online catalog, digital resources and databases

To provide information to the user very quickly is very important aspect for the IPs of special libraries. Some of the respondents shared that the users of the special libraries are always very busy in their work. Therefore, they do not have enough time to come to the library for information. When the users are coming to collect information, it means the users need information very urgent. In that cases the respondents suggested that the IPs in the organization need to provide these services as soon as possible whether printed or digital. Moreover, the IPs could use online catalog, digital resources and databases for providing relevant information to the user within very short time. Electronic resources (e-resources) and digital technology has made library service more easy, speedy and comfortable. E-resources are easily accessible in remote areas and solve storage problems and control the flood of information. Moreover, providing access in e-resources is a service to help the library users to find e-databases, e-journals, e-magazines, e-books, e-audio, e-images, digital library projects, electronic exhibitions, e-subject guide, e-newsletters, e-conferences proceedings and web search tools on a range of topic very quickly (Kenchakkanavar, 2014). The respondents strongly agreed with this statement, (with a mean score of 6.44).

4.5.11 Identify and evaluate information services, sources and products

The IPs of special libraries need to identify and evaluate information services, sources and products to provide the relevant information to the user. Some of the respondents asserted that the IPs requirement for understanding the source of information is appropriate or relevant to support the demand of the users. They also indicated that the IPs of special libraries should able to understand whether the source of information is properly cited by the respective authority or not. The IPs need to have expert knowledge of the content information resources, including the ability to critically and filter those (Hashim & Mokhtar, 2012). The respondents agreed with this statement with a mean score of 6.33.

Some of the respondents shared that for purchasing digital resources in special libraries, IPs role is very important. Therefore, it is necessary for the IPs to understand the importance of the products for better use in the libraries.

4.5.12 Integrated and widespread ICT applications

The acquisition of high level of computer and ICT literacy is necessary especially for those working or planning to work in the libraries and other information centers in a globalizing and knowledge economy (Obinyan & Unuabor, 2013). In the special libraries, it is necessary for the IPs to involve in widespread ICT applications for contributing in this modern economy. This is the most demandable aspect for the IPs of special libraries to involve in KBE of Bangladesh shared by the respondents. Therefore, it became compulsory for the IPs of special libraries to adjust with the demandable aspect. The respondents also asserted that day-by-day the ICT applications are radically changing. Therefore, the IPs need to play with these applications and make them expert to serve the demand of the user in the special libraries. They strongly agreed with a mean score of 6.54.

4.6 Characteristics or attributes on hiring to accelerate KBE

The respondents were asked about the characteristics that they are looking for the IPs in their respective special libraries to support their organizations. The respondents from different organizations have given their own agreements according to the demand of their organizations. Therefore we compared the means and standard deviations with different characteristics in here. The findings are described below:

4.6.1 Applicants' educational qualifications

The respondents of the organizations with their previous experience stated that they will see 'Applicants' educational qualifications', when they will hire an IP or resource person for their respective organizations. They also reported that without proper educational qualifications, the IPs of special libraries can't give their best efforts for their organizations. The respondents shared the characteristics for their respective organizations with a mean score of 6.21. To support the organization for choosing the right person at the right

position, it is necessary to see the applicants' educational qualifications. Some of the government organizations respondents asserted that applicants need to fill the criteria of the educational qualifications by the government rules and regulations before apply for those positions.

Table 4.2: Expected characteristics or attributes among the IPs on hiring

| | Applicants' educational qualifications | Applicants' attitude & manner | Applicants' communication skills | Previous employer references | Previous work experiences | Academic performance | Recommendations | ICT skills | Analytical knowledge | Information management skills |
|-----------|--|-------------------------------|----------------------------------|------------------------------|---------------------------|----------------------|-----------------|------------|----------------------|-------------------------------|
| Mean | 6.21 | 6.33 | 6.62 | 5.03 | 5.85 | 5.46 | 4.1 | 6.41 | 6.05 | 6.44 |
| N | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 |
| Std. Dev. | 0.923 | 0.838 | 0.59 | 1.386 | 0.904 | 1.374 | 1.984 | 1.141 | 1.123 | 0.754 |

4.6.2 Applicants' attitude & manner

The respondents were strongly reported that on hiring process to support in their libraries they will see 'Applicants' attitude & manner', because to work as a team player in the organization the IPs attitude and manner is very important. The respondents shared the characteristics for their respective organizations with a mean score of 6.33. In face-to-face interview with the researcher, some of the respondents expressed that the fresher's or young professionals are showing sometimes bad attitude and no respect for the seniors in the team. These create a very bad relationship with colleagues in the workplaces. Therefore, applicants' attitude and manner is very important for them to work as a team. On the other hand, some of the respondents told that it doesn't matter for them. Because, they trained up the new members of the team after joining them and established a strong relationship and worked together.

4.6.3 Applicants' communication skills

The respondents from different organizations have different views about resource persons' communications skills. Some of the respondents of the government organization stated

that they want communication skills, but it is not mandatory for them to work in the special libraries. But some of the respondents in the special libraries from the international organizations, they reported that they want strong communication skills orally and writing to support their organizations. The respondents explained the characteristics for their respective organizations with a mean score of 6.62. In addition, some of the respondents from the international organizations also asserted that the IPs need to have strong speaking quality to communicate between the organizations. Moreover, the respondents of that organization shared that they need to develop speaking as well as communication skill to support in the organizations. Therefore, they struggled to develop them to meet up the demand of the organizations. Moreover, some of the respondents also expressed that they need to study in different areas and do the different courses for their communications skill development according to the demand of the organizations.

4.6.4 Previous employer references

Some of the respondents reported that they will see the candidate's previous employer references in the interview. On the other hand, other respondents asserted that they will not see the previous employer reference. However, some other respondents who are working for the government organizations told that on hiring process it is not in their hand and candidates are hired by the government rules and procedures. Moreover, some other organizations' respondents also stated that they will see employer references to know where he/she works before to understand about candidate knowledge and experience. The respondents shared the characteristics for their respective organizations with a mean score of 5.03 in Table 4.2.

4.6.5 Previous work experiences

Most of the respondents reported that they will see previous work experience among the IPs as a resource person for their organizations on hiring. Previous work experience is very important for them. On hiring time, they will give more priority on the candidate, if the candidate worked before in a reputed organization. The candidate is already familiar with the recent library activities; therefore they don't need to teach them. On the other hand,

some respondents told that they will not see the previous work experience. Because they want to give young and fresher's professional opportunity to serve the organizations. Some of the respondents stated that most of the time library professionals are hired by the political pressure in that government organization. In that case, they don't have any suggestions or expectation from hiring process. The respondents shared the characteristics for their respective organizations with a mean score of 5.85 in Table 4.2.

4.6.6 Academic performance

Most of the respondents were expressed that they don't want to see the candidates' academic performance. Moreover, they also reported that academic performance is not working for their organizations to hire the appropriate candidates. In addition, they asserted that sometimes the candidate has no good academic results, he/she didn't get first class in the university results, but the candidate is very talented in other areas. Sometimes candidates without good result have good communication skills, ICT skills, problem skills, leadership skills to support the organization. On the other hand, the respondents reported that candidate with good academic result sometimes has no those skills to support the organizations. Some other respondents from the government organization asserted that there was a criterion on hiring to fill up the academic performance. The respondents shared the characteristics for their respective organizations with a mean score of 5.46.

4.6.7 Recommendations

Most of the respondents of the organization stated that they don't need to see the recommendation on hiring of their respective organizations. Some of the respondents reported that recommendations sometimes could be biased to select the appropriate candidates for the organizations. On the other hand, few other respondents expressed that sometimes recommendation is also necessary to know about the candidate beforehand by someone who already worked with him/her. If they knew beforehand than they can hire them to make a strong team in the workplace to support to the organization. The respondents shared the characteristics for their respective organizations with a mean score of 4.10 in Table 4.2.

4.6.8 ICT skills

The respondents were reported that strong ICT skills are mandatory for the candidates in special libraries. Some of the respondents stated that the IPs of special libraries must have ICT skills to accommodate them with the changing situation in the competitive job market. Moreover, ICT skills helped him/her as an integral of the organization with tangible output. Moreover, most of the participants asserted that they like to see the IPs of special libraries are already familiar with different databases, e-resources and software. If the IPs are skilled on the databases, those candidates get more priority in the respective organizations. To involve in KBE, the IPs of special libraries, need to develop their ICT skills. Some of the respondents from the international organization expressed that the IPs needs to have ICT skills as well as knowledge on KM and KBE to involve KBE in their organization. The respondents shared the characteristics for their respective organizations with the second highest mean score of 6.41 in Table 4.2.

4.6.9 Analytical knowledge

The respondents from the international organizations stated that they will see among the resource persons or IPs for their organizations on hiring whether they have analytical skills or not. Moreover, they will see analytical knowledge among the candidates to think critically for solving the problem and finding out a solution in a difficult situation for the organization. They also reported that the IPs should have quality to understand the environment of the organization and analysis this and make priority to finish the desired task. Therefore, they highly recommended about analytical knowledge to contribute KBE in the organization. On the other hand, some other respondents expressed that it is not that much important for their organizations. The respondents shared the characteristics for their respective organizations with a mean score of 6.05.

4.6.10 Information management skills

The respondents of the different organizations strongly argued that 'Information Management skills' is very important for the IPs of special libraries in Bangladesh. Moreover, they explained that planning, organizing, processing, retrieving, repository in

the organization is very necessary for the IPs of special libraries. In the special libraries, there are some confidential information which helps sometimes for the government settings and policy makings in the countries. Therefore, the respondents asserted that they will give priority if the candidate has the knowledge of this to manage information technically. Moreover, the respondents also reported that they like to see on hiring whether the candidate has information management skills as well as analytical knowledge to manage the information and solved the problem in the complex situation. The respondents shared the characteristics for their respective organizations with the highest mean score of 6.44 in Table 4.2.

4.7 The number of professionals worked in the respective special libraries

Figure 5.2 represents among (N=31) respondent organization in Bangladesh, the number of professional working in these respective special libraries including LIS 'Professional', 'Semi-Professional' or 'Non-Professional'. However, it is found that the total number 300 (100%) of the professionals are working in those libraries or information centers in the respective organizations. Among them, 133 (44.33%) of the professionals are working as LIS 'Professionals' who completed their graduation, post-graduation, M.Phil. or Ph.D. from the LIS education in the respective universities of Bangladesh. On the other hand, it is also found that 19 (6.33%) professional are working as a 'Semi-Professionals' in the libraries of the organizations, who completed their diploma, certificate course from the same discipline in the different college or institutes of Bangladesh. Moreover, 148 (49.33%) of the professional are 'Non-Professionals' in those special libraries or information centers, who completed their graduation, post-graduation or others certificate courses from the different subject areas, but worked in the special libraries of Bangladesh. It is clearly seen that right person in the right position always in the special libraries are not working. Therefore, LIS professionals are needed in those organizations to support the library services.

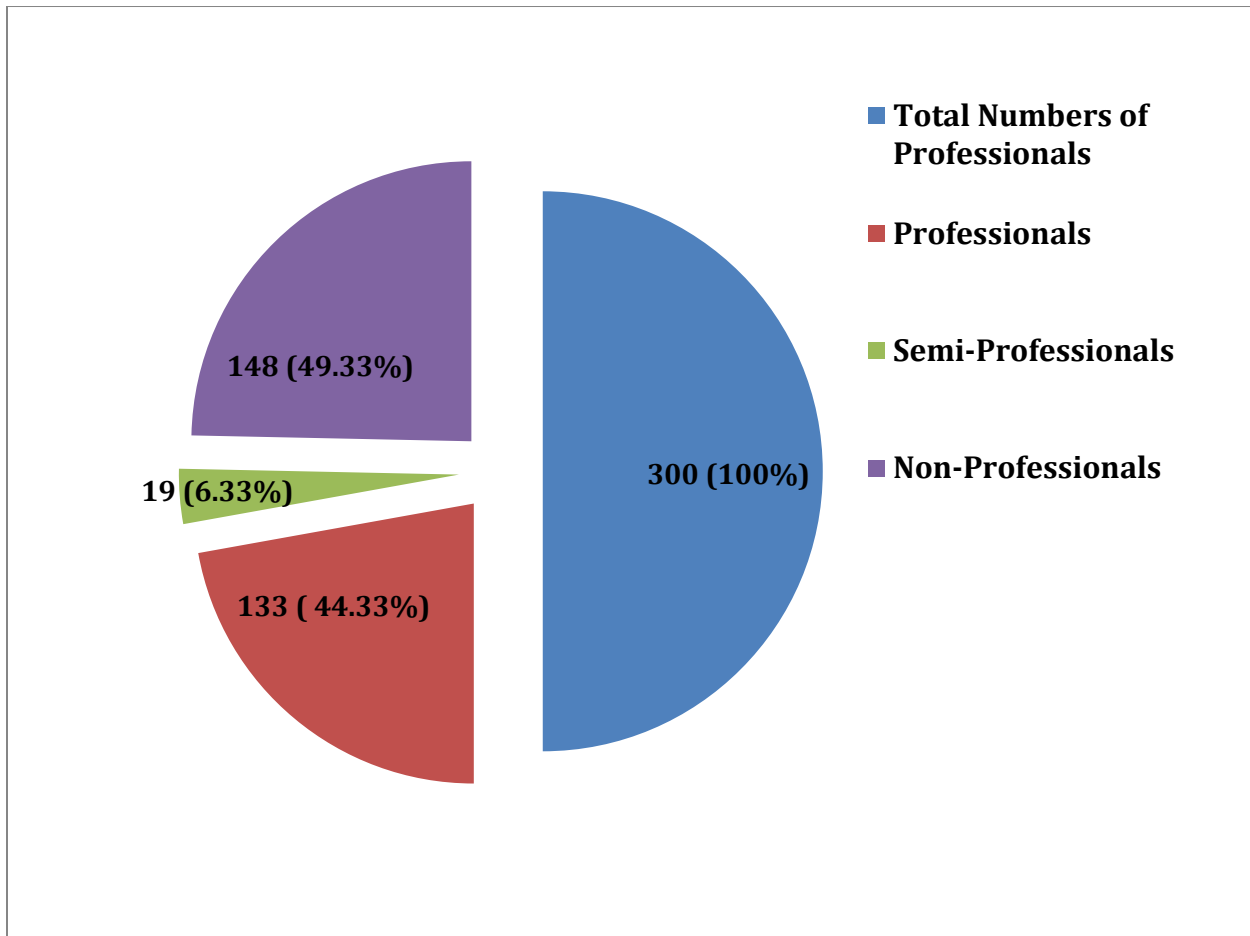


Figure 4.2: Professionals working in the respective special libraries of Bangladesh

4.8 Barriers for the IPs to accelerate KBE in Bangladesh

Figure 4.3 shows that the obstacle for the IPs to accelerate KBE in certain areas between the organizations in Bangladesh. In Figure 4.3, it can be seen that more than seventy-nine percent (79.48%) of the respondents reported with their own experiences that 'Lack of understanding the librarian roles and skill set' could be the major barrier for the IPs to involve KBE in Bangladesh.

On the other hand, more than seventy-one percent (71.79%) of the respondents shared with their own experiences that the statements entitled 'Lack of opportunities for specific training' and 'Right person for the right position' are the second highest position, could be the obstacles in the organizations. Moreover, 'Lack of proper technological facilities' and 'Inadequate budget for professional development' are the third highest position possessing

66.66% considering the major obstacles. Consequently, there were 46.15% of the respondents reported with their own experiences that ‘Lack of employee motivation’ could be also barrier in Bangladesh. On the other hand, 35.89% of the respondents treated that ‘Organizational hierarchy approval’ was one of the major problems for the IPs to establish KBE in Bangladesh.

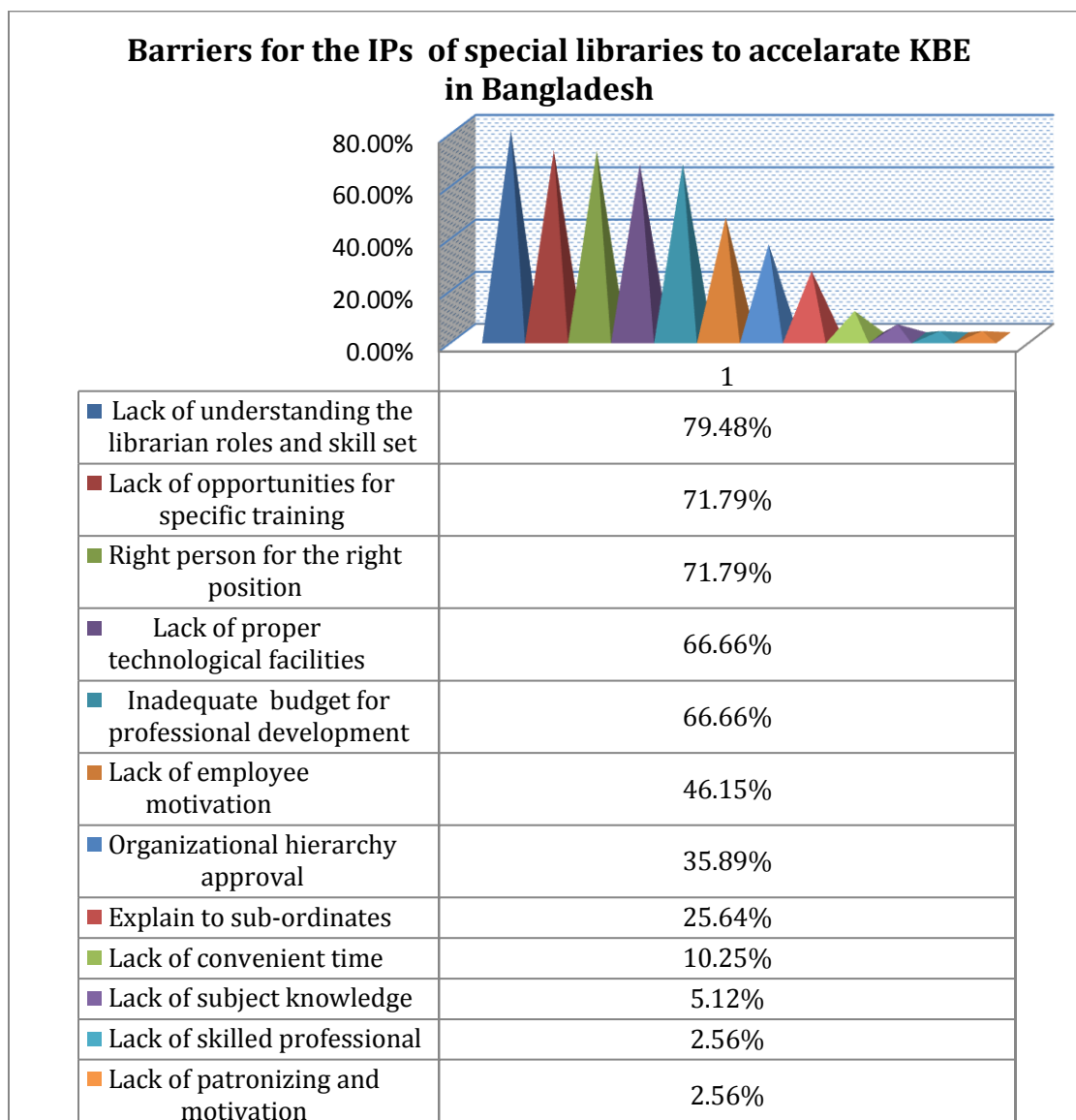


Figure 4.3: Barriers for the IPs of special libraries to accelerate KBE

Furthermore, 25.64% of the respondents strongly reported that ‘Explain to sub-ordinates’ is the serious problem in the different organizations. In addition, the number 10.25% of the respondents shared with experience that ‘Lack of convenient time’ could be a big problem.

However, 5.12% of the respondents asserted that 'Lack of subject knowledge', also one of the barrier for the IPs to accelerate KBE. Interestingly, 2.56% of the respondents with their own work experiences expressed that the IPs barriers could be 'Lack of patronizing and motivation' and also 'Lack of skilled professional' in special libraries of the organization to develop KBE in Bangladesh.

4.9 Different ways to develop skills

To ensure the anonymity of the respondents, we used a coding system for each respondent like e.g. R1, R2, R3...and R39 denoting respondent-----1, respondent 2.....respondent 39 in this chapter from 4.9 to 4.12. Skill development is necessary for building KBE in Bangladesh. "Global competition is understood as a competition for skills the more skilled the workforce the more competitive the economy. This leads to policies aimed at up-skilling the workforce, where the goal is to create a more highly skilled economy than one's competitor nations" (Brown et al., 2008).

According to the respondent's opinions and previous experiences, we highlighted some points to develop the IPs skills to contribute KBE in Bangladesh. The points are categorized as follows according to the responses of the interviewees:

- ICT training and knowledge
- Higher education
- English proficiency training or courses
- Innovation
- Research & development (R&D)
- Attend workshop, seminar with follow-up, and symposium
- Visiting different libraries and information centers
- Adequate training and knowledge sharing
- Gather subject and economic knowledge
- Continuous and lifelong learning, entrepreneurship

4.9.1 ICT Training and knowledge

“ICT can provide a wide variety of benefits to different firms. More specifically, ICT can reduce business costs, improve productivity and strengthen growth possibilities. Besides, the adoption and implementation of ICT by firms can improve business cooperation, business relationships, quality and diffusion of knowledge” (Barba-Sánchez et al., 2007, p.111). Knowledge and information is the main driver of KBE. In the age of digitalization, the IPs of special libraries need to provide current and relevant information very quick to the users of the organizations. Therefore, the IPs need to have strong level of ICT skills to involve on KBE in Bangladesh. Moreover, it is also important to know how the IPs of special libraries can improve their ICT skills. The respondents of special libraries gave feedback according to their practical experiences, how the IPs can make progress their ICT skills in their respective organization to provide relevant information to the user. Some of the respondents in the respective special libraries in Bangladesh with their own experiences noted that the IPs of special libraries need to have strong ICT training (R10, R17, R22, and R23). One respondent (R1) asserted that the IPs of special libraries could improve their skill by learning and working with modern ICT tools to provide quick and accurate information services to the users. In addition, they should try to motivate their users to come and received their desired information support from the library. They also need to try to convince the authority that the team is capable to manage the whole information management system. On the other hand, another respondent (R5) asserted that they should have expertise knowledge in the information technology. Moreover, one respondent (R6) also mentioned that the IPs should have taken IT-based training for their development. Furthermore, another respondent (R11) suggested that the IPs of special libraries can enrolled themselves in the ICT courses for their skill development. On the other hand, another respondent (R19) shared that the IPs of special libraries can cope up themselves with ICT. In addition, one respondent (R26) also suggested that the IPs should be skilled by the different ICT knowledge-based program. They also could be regarded as the information repository simulator to build KBE. Another respondent (R31) stated that providing technological facilities by the organization and also developing ICT skills for the IPs of special libraries to occupy KBE in Bangladesh.

4.9.2 Higher education

Education is the foundation of our economy. Among (N=39) respondents, 11 respondents are highly recommended about 'higher education' is the major factor to develop IPs skills in Bangladesh (R8, R9, R10, R12, R17, R22, R24, R28, R30, R34 and R35). Moreover, 'higher education' is the best process of reaching a strong higher education sector for building KBE in Bangladesh. The importance of higher education impacted our global KE. Universities are seen to be a key driver towards the knowledge economy. Accordingly, higher education institutions have been encouraged to develop links with industry and business in a series of new venture partnerships. This emphasis in higher education policy also accords with initiatives to promote greater entrepreneurial skills and activity within so-called national systems of innovation (Peter, 2003). The respondents suggested in their own experiences that to encourage higher studies in the universities or the best way to integrate a country's drive for economic growth. The IPs should develop themselves by higher studies with R&D for their development and supporting the user of the organization.

4.9.3 English proficiency training or courses

Some of the respondents (R9 & R17) stated that IPs could attend speaking course by the different organization in Bangladesh. Moreover, R10 reported that they should always practice reading and writing for their development. Similarly, few other respondents (R12 & R22) expressed that they can do communication courses. In addition, they also recommended that IPs could watch English movies and practice speaking for their communication skill development. Some other respondents (R20, R23 & R32) shared that the IPs of special libraries can go for IELTS, PTE, TOFEL, and GMAT. Moreover, the IPs of special libraries can watch English movies, TED talks to develop their English speaking and listening skills. However, they can read more English story for developing their reading skills and language proficiency skills.

4.9.4 Innovation

Elves (2015) stated that there are three key reasons why libraries should innovate. First, the librarians need to adapt to a changing environment move to digital. Secondly, they need

Chapter 4: Skills and competencies needed in special libraries for building KBE in Bangladesh

to improve existing products and services. Thirdly, they need to make use of new opportunities. Therefore, it is essential for the IPs to adapt with this changing environment to provide innovative services and products to the user. Regarding innovation, the respondents gave their opinions from different points of views. For example, R2 and R24 reported that innovation is another way to develop the creativity and innovation skills. Similarly, R11 told that innovation skills could be improved by innovating new products and services in special libraries. In addition, another respondent (R16) mentioned that IPs of special libraries should have close co-operation of efficient networking among universities, public innovation centers of firms and at the same time healthy competitions and open market to create more innovation skill.

4.9.5 Research & development (R&D)

The effective commercial application of new ideas involves much more than just pure research. Many other factors are related including the extent of market competition, the intellectual property regime, and the availability of financing for innovative enterprises (Bernanke, 2011). Most of the respondents stated that the IPs can develop their skill through research (R8, R15, R28, and R35). Similarly, one respondent (R5) reported that they should research deeply how to improve their professional skills and betterment of the profession. Moreover, other respondents (R22, R30 & R34) in the different organization asserted that IPs of special libraries can develop their skills through R&D.

4.9.6 Attend workshops, seminars, symposium with follow-up and relevant courses

Some of the respondents suggested that by arranging training, workshop, seminar, symposium, adequate training and relevant courses with follow-up, the IPs of special libraries can develop their skills. Moreover, they can create social media platform to develop themselves. In addition, the IPs can engage themselves in different programs, symposiums of banking, finance and economic for their professional growth (R4, R8, R19, R24, and R35). Moreover, another respondent (R18) also suggested that KBE related diploma or professional degree could be started for the IPs of special libraries in Bangladesh.

4.9.7 Visiting different libraries and information centers

Practical experience is very important to develop the skill. Therefore, some of the respondents (R8, R9 and R30) suggested that visiting different types of modern special libraries and Information centers, the IPs of special libraries also can develop their skills in Bangladesh. The researcher found that different national and international special libraries in Bangladesh are providing innovation service; modernize library themes such as learning common, maker space, STEM education, and modern digital tools etc. in the library. Some of those special libraries have open access for everyone; the IPs can visit these libraries and develop their practical knowledge.

4.9.8 Adequate training, entrepreneurship and knowledge sharing (KS)

Most of the respondents suggested that IPs of special libraries could develop their skills through proper training in Bangladesh. They need to continuous learning to develop their skills for contributing KBE in Bangladesh (R2, R6, R8, R9, R12 R17, R23, R28, and R30). One respondent (R3) suggested that lifelong learning and clear perception in new theme and development, the IPs of special libraries can grow with their skills. The IPs of special libraries should take advanced training in their field (R5 & R6). On the other hand, another respondent (R10) suggested that they need to become entrepreneur to develop new thing in the special libraries. In addition, entrepreneurship is the best way to involve KBE in Bangladesh. Entrepreneurship education and training alone cannot create a diversified and KBE in a short period of time. In fact building a KE requires more than introduction of entrepreneurship education and training. In addition, to entrepreneurship education it requires improvement in the national innovation system, large investment in ICT and a good macroeconomic performance (Gangi, 2017). Moreover, one respondent (R14) reported that after getting proper training, technological facilities, experienced and resourceful person and budget; proper monitoring, evaluation and accountability is important to sustain KBE activities. On the other hand, another respondent (R17) asserted that getting promotion in the organization and getting more scope to involve in the library activities also could develop their skills and experience. Few of the respondents (R15 & R30) stated that through proper training and KS activities in the organization, the IPs also

can improve and develop their skills. However, IPs of special libraries should have software training for developing their skills. In addition, another respondent (R32) recommended that IPs need to get opportunities from the organization for developing themselves through national and international training. Furthermore, one respondent (R33) reported that through proper and adequate training the IPs of special libraries can develop their skill in Bangladesh.

4.9.9 Gather subject and economic knowledge as well as knowledge-based training

Maximum respondents highly recommended about the IPs to implicate KBE in Bangladesh, they need to be self-learner or entrepreneur and gather subject knowledge as well as economic knowledge. In addition, the IPs of special libraries need to develop their skills in various ways to support the organization. One respondent (R11) stated that they need to enroll in special LIS focused courses. Moreover, they need to practice what they learn in theory and also reformation in product delivery services in the organization. On the other hand, another respondent (R13) asserted that the IPs need to increase analytical skill to solve the problem to face the complex situation. They should have proper knowledge about the profession what needs to serve among the organization. Moreover, few other respondents (R15 & R19) reported that by participating in the KS activities among the organization or outside the organization, they can increase their skills. They also shared that there are various ways to develop IPs skills in Bangladesh such as by gathering both subjective and economic oriented knowledge. Moreover, another respondent (R25) reported that the librarian or the IPs need to impress by his/her skill ability to the users, management and community. The IPs should engage themselves in learning and gaining knowledge. After that they should apply the same knowledge in the sector where they work. Conversely, another respondent (R26) asserted that the information professionals should be trained by different knowledge-based training. In addition, the IPs of special libraries could be regarded as the information repository simulator to build KBE in the library. Moreover, one respondent (R32) recommended that we have to align with growing information management field, ability to work out of box and speed up work efficiency with digital tools. Furthermore, we need to increase user demand; more positive attitude

between the users of the organization. Few other respondents (R36 & R38) expressed that need to identify the different economic indicators and find out the areas where the IPs can involve and involvement in different stakeholders' in the process of KBE. Knowledge is power and knowledge is capital. Knowledge plays an important role in the economy of any country.

4.10 Recommended skills and competencies for the students of library and information science (LIS) education

Library and librarians roles are changing rapidly in the digital era. But as a student of LIS education is very difficult to cope up with these changes for the modern economy. To understand the clear scenario of the field in special libraries of Bangladesh, we asked the respondents in their previous experiences what they think about student of LIS education should develop their skills before entering into the workplace.

Hamada & Stavridi (2014) showed the personal skills and professional skills for the young librarians. Moreover, he showed a broad range of skills for the young librarians as personal skills and professional skills for the development.

- i. **The personal skills:** analytical, creative, flexible, reflective, detective-like, adaptable, responsive to needs, enthusiastic, self-motivated, interactive and engaging, tolerant, networking skills, practices self-evaluation, multidisciplinary reader, confident, accepting of individual differences and respectful of cultural diversity.
- ii. **The professional skills:** information literacy, communication, critical thinking, team work, ethics and social responsibility, maintain professional attitude with youth, problem solving, leadership, time management, self-learning and professional development, ability to advocate and promote service, maintains confidentiality, working knowledge of English, possess clear vision of integrating technology into library programs.

The respondents recommended skills for the LIS students to develop:

- Communication skills
- ICT skills with practical experiences
- Experience on library management database and e-resources
- Behavior skills, attitudes, manners and etiquette and motivation
- Higher education and research methodology
- Creative and innovation skills
- Subject knowledge and continued learning
- Visit libraries and information centers
- Internship
- Classification, cataloguing and indexing skills

4.10.1 Communication skills

Librarian is the facilitator of access between knowledge and the user in the knowledge-environment. If the librarian has much professional competence, but he fail to deliver and satisfy users because of his/her lacking in communication and presentation skills. Then the IPs will not get credit of their work. The IPs can get respect and acceptance among users only through the strength of his/her communication skills (Moita, 2015). Most of the respondents were highly recommended about 'Communication skills', what student of LIS education should increase before entering into the workplace (R2, R4, R8, R9, R10, R11, R15, R16, R20, R22, R23, R24, R28, R30, and R33). Because, in student life, they are getting more time to develop their communication skills. When they are already in the job market, it is very difficult for them to develop in the workplace. Similarly, some of the respondents reported that students should have communicative knowledge (R3) and improve in English as well as communication (R12). Moreover, few of the respondents (R23 & R32) expressed that student of LIS education could develop English Language proficiency as well as communication before coming to the job market.

4.10.2 ICT skills with practical experiences

ICT, particularly the internet, is having a significant impact on the operations of business enterprises and is claimed to be essential for the survival and growth of nations' economies. Consequently, it is encouraging the development of the ICT sector as a way to diversify its economy and position itself to play a leading role in the global emerging digital economy (Mutula & Van Brakel, 2007). In this study most of the respondents highly recommended that ICT skills is the most important skills for the LIS education to develop themselves before entering to the workplace (R2, R4, R8, R9, R10, R11, R22, R23, R24, R28, R33, and R35). One respondent (R1) noted that the student of LIS must know the modern info-management in the ICT-based environment. They must have comprehensive knowledge on user need and their information seeking behavior. On the other hand, another respondent (R5) reported that to gain knowledge about the technology used in the library the students can increase their skills. Moreover, R1 asserted that 'Info. Literacy skills' is also very important for the LIS education to know and aware them before entering to the workplace. Another two respondents (R12 & R14) reported that LIS students should have IT-based knowledge and ICT skills with practical experience. Similarly, R26 stated that student should be gathered tactical ICT basis knowledge-based information. Interestingly, one respondent (R36) who is very experienced LIS professionals recommended that student need to have ability to learn the method of learning and studying a subject quickly and precisely; applied ICT knowledge; system analysis and design; SWOT analysis; and information literacy before entering to the workplaces.

4.10.3 Experience on library management databases and electronic resources (e-resources)

E-resources solves some professional solutions including space problem, providing remote access, convenience in use, increased readership with improved services, leading to more opportunities for productive research output and academic excellence within shortest possible time (Chandel & Saikia, 2012). Libraries are modernized with their systems and collections. Therefore, libraries are developing their library management software and e-

resources to increase the user demand of the information. Therefore, it is essential to develop in those areas. Some of the respondents (R17, R 22, R24, R30, and R32) shared that this is the perfect time to gather IT-based knowledge and have taken training on library management software and different databases and familiar with e-resources. On the other hand, another respondent (R26) stated that they should be achieved more knowledge about the different open source library software.

4.10.4 Behavior skills, attitudes, manners and etiquette and motivation

LIS education students should understand that they need to work on their attitude before coming to the workplaces. Most of the respondents shared that students of LIS education need to understand how to show respect to the hierarchy and senior colleagues in the workplaces (R8, R10, R13, R15 R34 and R35). Therefore, LIS students need to be careful of their behavior. On the other hand, few other respondents (R15 & R28) expressed that they need to be presentable with behavior skills, communication as well as smartness before entering to the competitive job market. Moreover, manner and etiquette needs to develop recommended by one of the respondents (24). In addition, another respondent (R4) asserted about motivation skills is essential for the LIS students.

4.10.5 Higher education and research methodology

The nature and purpose of higher education in the twenty-first century, focusing on how it can help fashion a green knowledge-based economy by developing approaches to learning and teaching that are social, networked and ecologically sensitive (Blewitt, 2010). LIS students can chose higher education to develop themselves for the better future. On the other hand, R&D is the significant factor which is connecting to the development in the country. To support R&D is one of the major roles what LIS professionals need to provide to the user. Therefore, if LIS students could develop themselves in research methodology in early stages, they will be capable to support R&D and also can work as a researcher for the development. Two respondents (R17 & R24) recommended about higher education for the LIS students. They need to learn about research methodology for involving R&D in the future. Moreover, another respondent (R3) stated that they need to follow lifelong learning

process for their improvement. On the other hand, one respondent (R14) expressed that self-study and must have a goal to build up a career as IPs to make several project-based works.

4.10.6 Creative and innovation skills

Few of the respondents (R8 & R30) mentioned that the students need to develop their creative thinking skills for more innovations. Practical steps can be taken to increase the success of small creative businesses in managing both the generation of new ideas (creativity) and the successful exploitation of those new ideas (innovation). Formal education courses have an important role in encouraging creativity and flair alongside the acquisition of core business skills which is necessary for innovation (Wilson & Stokes, 2005). On the other hand, another respondent (R16) recommended that critical thinking and problem solving skills, sustainable use of resources LIS students should develop before entering into the workplace. Critical thinking and problem solving skills is necessary to solve the problem in a complex situation and bring new things or ideas to restart with innovation. If the LIS students have these skills beforehand, he or she will get better job in the competitive market.

4.10.7 Subject knowledge and continued learning

Some of the respondents (R1 & R15) reported that LIS students must have comprehensive knowledge on user-need and information seeking behaviors. Therefore, LIS students need to understand the library services to provide customary service to the users of the organizations. Students of the LIS education could gather practical knowledge as well as leadership skills. Practical knowledge is necessary to become a strong leader in future to lead the strong team. On the other hand, most of the respondents highly recommended that they need to have proper subject knowledge and educate them with continuously or continued learning for their development (R20, 25, R27, R29, R33 and R35).

4.10.8 Visit libraries and information centers

Practical knowledge and experiences is essential to learn quickly. Bangladeshi education system still doesn't have the opportunity to gather practical knowledge. Therefore, LIS students did not get opportunity to gather practical knowledge. Therefore, one respondent (R2) who is very experienced LIS professionals recommended that they can visit libraries and information centers in Bangladesh and become learners to develop themselves. The researchers found that some of the special libraries have open access facilities and they have different events for the students. Therefore, students of LIS education can visit the libraries and join the different library activities.

4.10.9 Internship

There are a good number of literatures showed that internship experience and how it impacts on practical skills development (Ross & Elechi, 2002; Divine et al., 2007; Cooper, 2013; Bird, Chu & Oguz, 2015). Internship is essential for the LIS students to gather practical knowledge as well as personal and professional development. Moreover, the students will have experiences on official environment to deal with the users. One respondent (R5) recommended that students need to gain IT knowledge and they can do internship in the prominent libraries to develop themselves.

4.10.10 Classification, cataloguing and indexing skills

Classification, cataloguing and indexing skills is the core knowledge for the LIS education students. Moreover, it is needed in all types of the libraries. In addition, LIS students should have knowledge on DDC, LC and UDC for classify books, journals or reports for the library. One respondent (R9) recommended that classification, cataloguing and indexing skills is important that they can develop in their student life. Furthermore, LIS student can develop practical experiences on classification skills using technology or library management software. Therefore, they will able to work on the databases or library management software in the library.

4.11 Respondents responses regarding special libraries play a significant role for building KBE in Bangladesh

The respondents were asked through questionnaire whether they agree or not that special libraries have significant role to build KBE. Most of the respondent strongly agreed that special libraries have a bigger role to build KBE in Bangladesh. On the other hand, one respondent (R13) not agreed that special libraries are playing the vital role to establish KBE in Bangladesh. Another respondent (R7) stated that not all, some of special libraries in working for KBE in Bangladesh. On the other hand, one respondent (R25) reported that all types of libraries are playing an important role to make and develop KBE in Bangladesh. Certainly the special library has the significant role in KBE, told by another respondent (R3). Moreover, one respondent expressed that KBE is necessary for corporate with developed economy. Special library will be effective for developing KBE in Bangladesh and recommending it for the development recommended by another respondent (R22). Furthermore, R24 reported that it can improve our economy.

4.12 Respondents recommended opportunities regarding the IPs role could be more effective to develop KBE in Bangladesh

The respondents were also asked to recommend some more opportunities what they think the IPs role could be more effective to develop KBE in Bangladesh. The recommendations received from the respondents are enumerated below:

4.12.1 Special libraries can arrange training, workshops, and seminars and orientation program

Training, workshop, seminar and symposium can help manpower to build capacity and skills. In addition, orientation to a new situation or environment can enhance the efficiency and capability of the information professionals. "Library staff training and development is a crucial element in ensuring positive user experiences within libraries. A staff component consistently exposed to relevant training and development interventions should not be

underestimated” (Lockhart & Majal, 2012). One respondent (R18) of this study recommended that special libraries can arrange workshops, seminars, share and exchange ideas about KBE between the IPs. Similarly, another respondent (R14) suggested that the special libraries need to arrange training, workshops and seminars with follow-up with KBE. In this regard, R26 suggested that special libraries are actually the best platform to build up KBE for its parent organization. On the other hand, another respondent (R26) recommended that different types of knowledge-based services may be provided for its organizational orientation. One respondent (R5) recommended that special libraries could make consortium among them especially who has the same objectives in the organization.

4.12.2 ICT-knowledge and relevant software operating skills

The advancement of ICTs has had an undeniably profound effect on redefining the production processes by which human work is performed. Beyond this commercial impact however, ICTs have also proven to be a catalyst for a more holistic and wide-ranging social and economic transformation (Brown & Grant, 2010). No nation can develop without ICT-based education as ICTs are the fuel of any development. Similarly one respondent (R36) of this study recommended that application of ICT knowledge is a must so that one can involve himself in the ICT activities with the IT professionals. He also added that the IPs of special libraries should possess the spirit to bring him forward to the higher authority and they should prove themselves, as an integral part of the organization with tangible output. They have to accommodate themselves with the changing situation. Another respondent (R16) reported that his recommendation would be intensive application of ICT of providing greater availability of e-services. Similarly, R38 recommended that the IPs of special libraries need to have latest relevant software operating skills, language skills and professional attitudes etc. to contribute KBE in Bangladesh.

4.12.3 Overcome the challenges

The study found that the IPs of special libraries are facing a number of challenges including lack of understanding the librarian roles and skill set, lack of opportunities for the specific training, right person for the right position, lack of proper technological facilities,

inadequate budget for the professional development. The IPs of special libraries need to overcome those challenges to contribute KBE in Bangladesh. Moreover, the organization should support the IPs to work smoothly in the organization. One respondent (R1) recommended that since special libraries are serving researchers and some advance users so the stuffs of these libraries are always facing some new challenges and immediately they need to try to overcome those by anyways thus they become more skilled and they are contributing much to develop KBE in Bangladesh.

4.12.4 Innovation and innovation project in the special library

There are a number of literatures shows innovations and innovation projects in the library (Yanxin, 2003; Pungitore, 1995; Rowley, 2011; Bieraugel, 2015; Zaugg & Warr, 2018). Innovation creates knowledge economy to develop national innovation system in the country. Therefore, special library should increase their innovation and innovation project for the library to develop KBE in Bangladesh. Libraries are making some attempts to draw on customers in service innovations and not only rely on management and employees. The main conclusion is that there are unexplored possibilities for customer involvement in the library service innovations (Scupola & Nicolajsen, 2010). One of the experienced respondents (R2) in the special libraries of Bangladesh recommended that effective flow of information across the organization is compared with the proper blood circulation in a human body, where librarians are compared with hearts. Librarians' role should be innovative in order to get the ultimate success of his/her institutions.

4.12.5 Knowledge management (KM) and economic oriented knowledge

Over the past several years there have been thorough discussions about the importance of KM within our society. The management of knowledge is stimulated as an important and necessary factor for organizational existence and maintenance of competitive strength (Mårtensson, 2000). Knowledge is the capital and key to develop KBE. Therefore, KM is essential to understand. One respondent (R7) recommended that the IPs of special libraries should have clear overview about KM and also link knowledge with economic development in Bangladesh. Moreover, core themes for KM relate to: the creation

of knowledge repositories; the improvement of knowledge acquisition; the enhancement of the knowledge environment; and the management of knowledge as an asset (Rowley, 1999). Therefore, it is necessary to contribute in KBE the IPs need to gather economic oriented knowledge and also know how to manage knowledge for their respective organization.

4.12.6 Create awareness, clear concept and understanding about KBE

To contribute in KBE, it is necessary for the IPs to clear concept of KBE, why it is needed, why the IPs of special libraries need to know about this and how it is related to Bangladeshi economy. Moreover, the organization needs to have scope and opportunity for the IPs of special libraries or special organizations in Bangladesh. One respondent (R14) shared that special libraries are playing a vital role for building KBE in Bangladesh and he thinks proper planning and initiative, positive motivation, right people right time, the right place, required technology and budget, skillful professional's right direction and monitoring can make the best of it. On the other hand, another respondent (R19) recommended that special libraries, parent organization authority should have clear concept and willing to create KBE in Bangladesh. Moreover, one of the respondents (R20) suggested that create awareness and understanding about KBE among the IPs of special libraries in Bangladesh. On the other hand, another respondent (R26) asserted that actually special libraries are the best platform to build up KBE for its parent organization. It may be provide different types of knowledge-based services as its organizational oriented.

4.12.8 More desired and expanded role of the IPs

The IPs could refer to anyone who is capable for the transfer of information and knowledge in the organization. They might hold different titles such as 'Project Manager', 'Database Manager', 'Customer Relation Manager', 'Information Specialist', 'Documentation Specialist', 'Information Manager' or 'Chief Information Officer'. They will apply their knowledge to create value and responsible for managing the creation, capture, synthesis, sharing and application of the collective intelligence of their organizations. They will accomplish the procedure and confirm that business needs are served and advance high-level of KM strategies and generate a KM infrastructure (Al-Hawandeh & Foo, 2001). One

respondent (R32) who is expert in KM and working in the international organization expressed that the IPs of special libraries more expanded role could be 'Online Record Manager', 'Knowledge Manager' which is different from library, 'Monitoring and Evaluation Manager', 'Database Administrator', and 'Information Disseminator' in the organization to involve KBE in Bangladesh.

4.12.9 Female library professional participation and development

Bangladesh needs a significant higher ratio of female participation in the labor force to realize its vision of reaching middle income status by 2021 (The World Bank, 2015). Female professionals' participation is necessary in Bangladesh to develop KBE for improving Bangladeshi economy. One respondent (R20) recommended that more female library professionals need to participate in the LIS profession and they need to develop themselves. The number of LIS female professionals are working in the different special libraries of Bangladesh, therefore they should develop their skills according to fulfill the demand of the user.

4.13 Chapter summary

The main aim of this chapter was to identify the key skills that are needed for the IPs of special libraries to successfully engage in KBE of Bangladesh. The finding of this chapter was that IPs of special libraries need to have advanced skills to engage in KBE of Bangladesh. Some of the IPs who are highly skilled, and they are playing a vital role for their organizational development and they need to develop their skills for longer period time. Skill development is very necessary for building KBE in Bangladesh. "Global competition is understood as a competition for skills - the more skilled the workforce the more competitive the economy. This leads to policies aimed at up-skilling the workforce, where the goal is to create a more highly skilled economy than one's competitor nations" (Brown et al., 2008).

In this chapter, there are number proves to appear that the instruction and skills of the workforce are critical factors to economic growth and development and raising efficiency in the special libraries to involve in KBE. Therefore, IPs of special libraries need to keep

Chapter 4: Skills and competencies needed in special libraries for building KBE in Bangladesh

forward to adjust and adapt with this modern economy. The respondent from the different organizations shared their own experiences regarding different skills what the IPs of special libraries need to develop to involve more in KBE. They need to develop their services to fill up the demand of the organization. They need to be more ICT based, communicative, innovative, entrepreneur, creative thinker for providing modern services in special libraries. In this chapter showing different figures it has been analyzed also. On the other hand, to work in those respective organizations on hiring which criteria was getting priority that also has been explained. The LIS professional, student of LIS education and young library professionals in Bangladesh, they should aware of to engage KBE in Bangladesh. There were a number of barriers for the IPs to involve in KBE such as 'Lack of understanding the librarian roles and skill set', 'Lack of opportunities for specific training', 'Right person for the right position', 'Lack of proper technological facilities', 'Inadequate budget for professional development' and etc. These barriers also need to overcome by the IPs of special libraries to develop them for this modern economy. Moreover, the organization also needs to support the IPs to develop and grow their skills for the economic development of Bangladesh.

Chapter 5

**State-of-the Art of Initiatives taken
to Facilitate Knowledge Sharing
(KS) activities for KBE in
Bangladesh**

5.1 Introduction

The main aim of this chapter is to analyze the initiatives taken to facilitate knowledge sharing (KS) activities for knowledge-based economy (KBE) in Bangladesh. KS is very important for knowledge creation and knowledge creation is essential for innovation and development. Therefore, it is necessary to have KS activities in the organization. In the competitive world, the company needs to realize that the significance of KS activities in the organization. It is essential for success in corporate sectors. Knowledge is a critical organizational resource and in order to gain a sustainable competitive advantage; organizations must in some ways rely on their employees, because KS is the main activity through which employees can contribute to knowledge application, innovation, and consequently the competitive advantage of the organization (Özbebek & Toplu, 2011). KS is the passing information to one another. In the KBE, an organizations most valuable asset is knowledge capital, but the employee of the organization and organization by self does not want to share knowledge willingly. Therefore, in order to build KBE in Bangladesh, it is very important to know KS activities within the organization. KS should include one or more of the following elements: (1) new content or substance (gained through mutual learning and collaborative innovation); (2) new processes (including current forms of policy dialogues with KS relevant processes, as well as the longer-term institutionalization of KS in organizations); (3) new partnerships (new collaborative and trust-building relations, including complementary knowledge partners, possibly following joint standards) (OECD, 2015).

5.2 Data collection techniques

For collecting data, we applied survey method using one structured questionnaire with open and closed-ended questions, face-to-face and telephonic interview. To explore the scenario of initiatives taken to facilitate KS activities for KBE in Bangladesh, we used seven-point Likert scales with the following scores: 1=Strongly Disagree; 2=Somewhat Disagree; 3=Disagree; 4=Neutral; 5=Somewhat Agree; 6=Agree; 7=Strongly Agree in Table 5.2 to 5.3 and 5.5. To build KBE in Bangladesh, it is necessary to explore the initiatives taken to facilitate KS activities for KBE in Bangladesh. Therefore, we asked the respondents through

the structured questionnaire about the current initiatives taken in the organizations to facilitate KS activities for KBE in Bangladesh. The first question was perceptions on the environment of sharing of knowledge in their respective organization; the second question was about challenges that they are facing in sharing information between colleagues and other sections within the organizations; third question was how to share knowledge if they get opportunity in the institutions. Moreover, the fourth question was about their opinions regarding whether KS activities play a vital role to develop organizational economy in particular to KBE in Bangladesh.

5.3 Data analysis methods

For data analysis, we used the descriptive analysis methods of SPSS 25.0. The mean and standard deviation of the responses were calculated based on the seven-point Likert scales as mentioned above and Microsoft excels was also used for graphical presentations.

5.4 Respondents' perceptions of sharing knowledge in the organization

The respondents from the special libraries were asked to indicate their levels of agreement with some specific reasons for responding in significant factors. The findings have been synthesized enumerated below:

5.4.1 Facilitates knowledge creation, storage, retrieval and transfer

The dynamism of new economy requires IPs not only to create knowledge quickly but also to acquire and apply knowledge through KS (Nooshinfard & Nemati-Anaraki, 2014). KS activities are helping to create knowledge creation in the organization. Moreover, KS is the most popular aspect to increase knowledge creation in the organization. Some of the respondents stated that the IPs of special libraries need to promote knowledge creation and encourage the other staffs in the organization. Moreover, few of the respondents mentioned that the librarians or the IPs are often called knowledge workers for the organization. To encourage the knowledge creation in the special library, a knowledge worker needs to participate in KS activities. The respondents agreed with this statement

(with a mean score of 6.26). KS is not like when we cut a cake into some pieces and distribute them for the entire people who share. But each individual brings 4 a cake and came back with a bigger one that is KS (Anna, Nove & Puspitasari, 2013). However, to develop national system of innovation in the country, knowledge creation is essential. Moreover, libraries are right place to make it happen. Furthermore, the respondents reported that the IPs of special libraries need to store those knowledge creations in special libraries to support the organizations. In addition, the respondents also described that the IPs of special libraries need to retrieve the information and when it is necessary they need to able to transfer this knowledge to the user.

Table 5.1 Respondents’ perceptions on sharing knowledge in their respective organization

| Statements | N | Min. | Max. | Mean | Std. Dev. |
|---|----------|-------------|-------------|-------------|------------------|
| Facilitates knowledge creation, storage, retrieval and transfer | 39 | 4 | 7 | 6.26 | .850 |
| Accomplishes development of tasks | 39 | 4 | 7 | 6.08 | .839 |
| Improves job performance | 39 | 4 | 7 | 6.21 | .767 |
| Speeds decision making | 39 | 4 | 7 | 5.95 | .826 |
| Increases performance management | 39 | 4 | 7 | 6.00 | .649 |
| Ensures transparency and accountability of the work | 39 | 4 | 7 | 6.13 | .833 |
| Provides training and development for the colleagues | 39 | 3 | 7 | 6.15 | .961 |
| Enhances team member knowledge | 39 | 5 | 7 | 6.26 | .637 |
| Develops personal interaction with the colleagues | 39 | 5 | 7 | 6.13 | .656 |
| Increases job effectiveness | 39 | 5 | 7 | 6.21 | .570 |
| Improves creativity or innovation | 39 | 5 | 7 | 6.41 | .677 |
| Valid N (listwise) | 39 | | | | |

5.4.2 Accomplishes development of tasks

The operational investment in KS will pay off when opportunities for learning make teams more happy and productive. Ultimately, employees will be vested in the company that creates this positive work environment for them (Skrabanek, 2017). If the KS activities happened in the organization, the task could be done easily by the staffs of the organization. Therefore, the staffs are already aware of what is going to happen in next, so they are pretty much ready before to finish the task on time. The respondents agreed with this statement (with a mean score of 6.08) with their previous experiences in the organization. The respondents stated that KS is essential to finish the task otherwise the task cannot be done properly. In addition, they also asserted that the task in the libraries to finish on time KS activities is mandatory. Moreover, they also asserted that KS activities improving or developing the tasks in the organization and builds the relationship within the colleagues. The team can able to finish on time with no harassment.

5.4.3 Improves job performance

Sharing knowledge improves staffs performances in the organization. KS mechanisms are correlated with employee performances and sharing increases among individuals, therefore organization performance will be improved. Moreover, KS had a significant positive impact on employee performance and individuals in the organization will be able to expand their knowledge assets by sharing internal or external knowledge resources (Kohansal, Alimoradi & Bohloul, 2013). Some of the respondents reported that improving job performance in the organization is very important to become competitive between others in the organization. If the staff has potentiality, if he or she got trained up by KS activities in the organization, their job performance will definitely improve. Moreover, if the staffs are improving their job performance, the organization also will be benefitted and developed. Therefore, KS impacts in the organizational economy. The respondent strongly agreed (with a mean score of 6.21) with their own experiences in the organization in Table 5.1. The respondents also noted that the IPs of special libraries need to aware of their job performances in the organization to prove themselves as better

candidates in the organization and contributes more in to develop organizational economy.

5.4.4 Speeds decision making

This is the very important aspect in the KS activities in the organization. KS helps to decide very earlier in a complex situation and start with thinking solution of the problem, which is very important for developing KBE in Bangladesh. It is easy to finish the task, if the work is distributed to each of the staffs and sharing the information before. For example, if the work is distributed between ten peoples and a different person has given different opinion and feedback which is very effective to finish the task smoothly. KM and decision-making strategies are crucial factors for the organizations (Abubakar et al., 2017). The IPs of special libraries could use digital resources and digital apps or the database to get the information and share others. The respondent agreed with this statement (with a mean score of 5.95). Some of the respondents noted that maximum decision they need to take when they seat together to collaborate each other for solving any problem among the organizations. Similarly, some other respondents reported that the library team seat together to discuss various problems and bring new things including solutions in the special libraries.

5.4.5 Increases performance management

After KS activities, the staff's performances are increasing among the organization. Some of the respondents gave opinion that it is very easy to distribute the work among the colleagues. On the other hand, another respondent shared that it is very stress-free to divide the work between appropriate members of the organization to finish the task within a short period of time. According to the demand of the subjects or the task KS is fare front in to work faster in any organization. Giampaoli, Ciambotti & Bontis (2017) reported that there is a strong relationship between KM practices and intermediate activities of creative problem solving and problem-solving speed. In addition, creative problem solving has a direct impact on both organizational and financial performances, whereas problem-solving speed has a direct effect only on financial

performance. The respondents agreed with this statement (with a mean score of 6.00) in Table 5.1. The IPs of special libraries have seen this achievement with their own experiences.

5.4.6 Ensures transparency and accountability of the work

If the organization has the KS activities it ensures the organization of having transparency and accountability of the work. OECD Secretary-General Gurría (2018) reported that openness and transparency are key ingredients to build accountability and trust, which are necessary for the functioning of democracies and market economies. Openness is one of the key values that guide the OECD vision for a stronger, cleaner, fairer world. OECD whole heartedly supports efforts to increase openness and transparency through the free flow of information and the sharing of knowledge. The IPs of special libraries also believes this, but some times in the organizations it is not happening very smoothly. Some of the respondents stated that it depends on the leadership team of that organization and the organization structures sometimes. If the hierarchy of the organization is willing to support to ensure transparency in the work to all, then organizational performance increased. The respondents agreed with this statement (with a mean score of 6.13).

5.4.7 Provides training and development for the colleagues

Staff development is sign of the organizational performances. If there is an opportunity to provide training and development, the organizational performances will be increased. Not all the organizations have the same opportunity of training and development for the staffs. If there is no opportunity for the staff for training and development that organization performance cannot be a perfect position. Some of the respondent expressed that the organization should have the opportunity for the staffs for better performance. Therefore, the organization with better performance counts as an organizational economy and contribute in KBE. The respondents agreed with this statement (with a mean score of 6.15).

5.4.8 Enhances team member knowledge

The sharing of knowledge within team is critical for team functioning. However, working with team members who are in different locations (i.e. in virtual teams) may introduce communication challenges and reduce opportunities for rich interactions, potentially affecting KS and its outcomes (Staples & Webster, 2008). In KE, the IPs of special libraries need to have strong skills and the opportunity to conduct KS virtually. If the KS is happening it means everyone is filled in and it reduces the stress, skill sharing, and experience sharing, to become an open forum. The IPs of special libraries, need to able to work with team for their development of the organization. Some of the respondent reported that to build KBE, the organization needs to ensure about KS activities in the organization. The respondents strongly agreed with this statement (with a mean score of 6.26) with their personal experiences.

5.4.9 Develops personal interaction with the colleagues

KS develops personal interaction among the colleagues, when the person is willing to share their knowledge with the other colleagues in the organization, their relationship is also built up. Casimir, Lee & Loon (2012) asserted that the influence of perceived cost of sharing knowledge and affective trust in colleagues on the relationship between affective commitment and KS in the organization. Some of the respondents in special libraries expressed that on their previous experiences that KS activities is helpful, but sometimes it depends on sender and receiver relationship. If the sender is highly qualified to deliver knowledge and also the receiver is capable to receive this, than a good relation could be developed in the organization. But somehow it failed; the KS activities are not happening always in the organization. The respondent agreed with this statement (with a mean score of 6.13) in the Table 5.1.

5.4.10 Increases job effectiveness

The respondent stated that KS activities in the organization increase job effectiveness in the organizations. If the organizations have KS activities, the efficiency of the staffs will increase day-by-day. Through KS activities everyone will be informed in the organization

what needs to be done and what is going to happen next. Therefore, everyone in the organization more organized beforehand with satisfaction about the task and less pressure in the workplace. Furthermore, it increases personal interactions and bonding with the team member. Nevertheless, everyone in the organization is already in the team and takes decision to prepare for facing this problem. The respondent agreed with this statement (with a mean score of 6.21).

5.4.11 Improves creativity or innovation

With the advent of the economy knowledge age, knowledge has become the fundamental means of wealth creation and prosperity and the most important driving force for business success. As a result, skilled workforce has been recognized as the engine of growth to support the KBE and to ensure the permanence of innovative organizations (Ashari & Jayasingam, 2014). KS helps to improve creativity and innovation in the organization. The respondents stated that the IPs of special libraries can help and encourage the user with creativity and innovation. Moreover, they also expressed that IPs of special libraries need to be creative to solve the problem and bring some innovative solution for the libraries as well as for the organization. The IPs of special libraries need to have broad range of skills to share and promote the knowledge in the organization. The respondent strongly agreed with this statement (with a mean score of 6.41) in Table 5.1.

5.5 Challenges in sharing knowledge in the organizations

The respondents in special libraries shared with their own experiences about the challenges in sharing information among their colleagues and other sections within organizations. The findings are enumerated below:

5.5.1 Lack of immediate response by the colleagues to share information

The recipients' characteristics play different roles in different situations (responsive and proactive KS) in triggering the knowledge sharers' motivation to share. In responsive KS, a recipient's learning attitude and personal relationship with the knowledge sharer affected the sharer's willingness to share. In proactive KS, a recipient's professional ability and

personal relationship with the sharer significantly affected the sharer’s willingness to share (Zhang & Jiang, 2015). Some of the respondents reported that it is happening in the organization. On the other hand, some other respondents stated that they are not facing this kind of problem in the organization. The respondents agreed with this statement (with a mean score of 5.36) in Table 5.2.

Table 5.2 Challenges in sharing information for the IPs in the organization

| Statements | N | Min. | Max. | Mean | Std. Dev. |
|--|----------|-------------|-------------|-------------|------------------|
| Lack of immediate response by the colleagues to share information | 39 | 1 | 7 | 5.36 | 1.769 |
| Lack of trust of sharing knowledge | 39 | 1 | 7 | 5.18 | 1.760 |
| Lack of proper IT platform to share | 39 | 1 | 7 | 5.31 | 1.922 |
| Lack of organizational guidelines on sharing | 39 | 1 | 7 | 5.26 | 1.929 |
| Lack of encouragement of Information Professionals to initiate ideas | 39 | 1 | 7 | 5.36 | 1.769 |
| There is no reward system for KS in the organization | 39 | 1 | 7 | 5.18 | 1.985 |
| Lack of initiative for collaboration in the institutions | 39 | 1 | 7 | 5.15 | 1.954 |
| Lack of International-mindedness | 39 | 1 | 7 | 5.00 | 1.933 |
| Valid N (listwise) | 39 | | | | |

5.5.2 Lack of trust of sharing knowledge

Trust is very important in sharing knowledge among the organization. KS provided that trustworthy relationships between the members of an organization would lead to enhance the KS activities. In order to promote the KS attitudes within the organization, the managers should consider KM enablers (top management support, organizational culture, and openness in communication) along with trustworthy environment as an energetic force for the development of KM systems (Yasir & Majid, 2017). Some of the respondents shared that they have found this in the colleagues in the organization. On the other hand, few other respondents expressed that they always get the chance to share knowledge. Moreover, they have strong relationship between the colleagues. The respondents agreed

with this statement (with a mean score of 5.18). Furthermore, some of the respondents also reported that it depends in the organization top management.

5.5.3 Lack of proper IT platform to share

Some of the respondents from the international and private organization reported that they have proper IT platform to share knowledge. Sometimes the respondents worked as trainer to give training and share the information among the organizations. But there is no incentive or additional benefit for this. On the other hand, some other respondents from the government organization stated that they do not have proper IT platform to share knowledge in the organization. Moreover, in some case the administration failed to understand what the librarians or the IPs role in the organization. But few respondents from the government organizations reported that they have huge platform to share knowledge and they have option to get incentive from the organizations. Moreover, they have more option to open with sharing knowledge and promote the organizational activities. The respondents agreed with this statement (with a mean score of 5.31) with their own experiences.

5.5.4 Lack of organizational guidelines on sharing

The researcher found that not all the organizations have the proper guidelines on sharing knowledge. Some of the respondents from the government organization shared that they have some rules to share knowledge among the organizations. On the other hand, the private and international organizations they have an option to share knowledge and encouraged by the organization also. But for this they are not getting paid, therefore, in some cases they lose motivation to share knowledge. The respondents agreed with this statement (with a mean score of 5.26).

5.5.5 Lack of encouragement of the IPs to initiate ideas

Most of the respondents in the special libraries stated that the organization sometimes not understanding what is the IPs roles in the organization. Moreover, they expressed that with their experiences they are not encouraged to initiate new ideas sometimes. The most effective method to promote KS was to link it with rewards and performances appraisal.

Top management support was also vital to ensure the success of KS in the organization (Wai-Ling, Sandhu & Kishore, 2009). The respondents also reported that top management's encouragement sometimes motivates the IPs of special libraries. On the other hand, Israilidis et al. (2015) found that employees' ignorance may negatively affect their intention to share knowledge, thus leading to poor decision-making and communication in organizations. Employees' ignorance could also limit the organizational ability to repel external threats, implement innovation and manage future risks. The respondents agreed with this statement (with a mean score of 5.36) in Table 5.1. Therefore, encouragement and motivation in the organization are necessary to initiate new ideas. Some of the respondent shared that sometimes encouragement and motivation in the workplace is working well rather than getting better salary in the workplace.

5.5.6 There is no reward system for KS in the organization

A good number of the respondents in the organizations from the special libraries expressed that there is no reward or incentives in the organization for KS activities. Therefore, the people of the respective organizations sometimes lose motivation to share knowledge among the colleagues and in the organizations. Al-Alawi, Al-Marzooqi & Mohammed (2007) investigated the role of certain factors in organizational culture in the success of KS. Such factors as interpersonal trust, communication between staff, information systems, rewards and organization structure play an important role in defining the relationships between staff and in turn, providing possibilities to break obstacles to KS. On the other hand, the researchers found that a good number of government organizations have the incentives or reward for the staffs in the organization for KS activities. Jackson et al. (2012) found that leader reward behavior is positively related to higher task performance and organizational citizenship behavior, and fewer intentions to turnover. These relationships are mediated by employees' perceptions of fairness and work morale. The respondents agreed with this statement (with a mean score of 5.18).

5.5.7 Lack of initiative for collaboration in the institutions

Leading business thinkers agreed that knowing how to collaborate is the key to effective knowledge creation and sharing, and to future business success. But collaboration is voluntary, and difficult to manage for hierarchical organizations accustomed to top-down control (Payne, 2008). Most of the respondents shared that they have collaboration opportunities in the organizations. On the other hand, few other respondents stated that they have lack of collaboration in the organizations. The respondents agreed with this statement (with a mean score of 5.15).

5.5.8 Lack of international-mindedness

A good number of the respondents in the special libraries expressed that they do not need to face lacking of international mindedness in the organizations. But some of the respondents from the international organizations reported that they are facing lack of international mindedness problem in their respective organizations. Moreover, sometimes they are not highly skilled enough to share their knowledge in the respective organizations. The respondents agreed with this statement (with a mean score of 5.00) in Table 5.1.

5.6 Different ways to share knowledge in the respective organizations

The respondents were asked to specify how they share their knowledge if they get opportunity in the institutions. More than eighty-four percent (84.61%) of the respondents reported that they share their knowledge 'attend the courses, symposia, conferences and workshops'. On the other hand, more than eighty-two percent (82.05%) of the respondents stated that they organize 'professional development' for the staff's training to share knowledge in the organization. Moreover, 74.35% of the respondents asserted that they share knowledge in the organization through 'share via internet-based online cloud like email, Google applications, podcasting, blogging, social media, and Microsoft education platform' etc.

In addition, 71.79% of the respondents stated that they share their knowledge 'arranging in-house training when new tools in use and exiting tools are changing' and 'collaborate

between the colleagues' in the organization. Furthermore, 69.23% of the respondents reported that they 'interlink with other department' in the organization and share their knowledge. 46.15% of the respondents reported that they are sharing knowledge 'participating in regular job appraisal'. In addition, 35.89% of the respondents asserted that they have shared their knowledge in a 'groupware (team, working groups)' in the organization. Interestingly, 2.56% of the respondents expressed that they share their knowledge within the organization 'set up a digital KS platform', 'motivate staff' to involve, 'guide in proper way' and through 'interpersonal dialogue'.

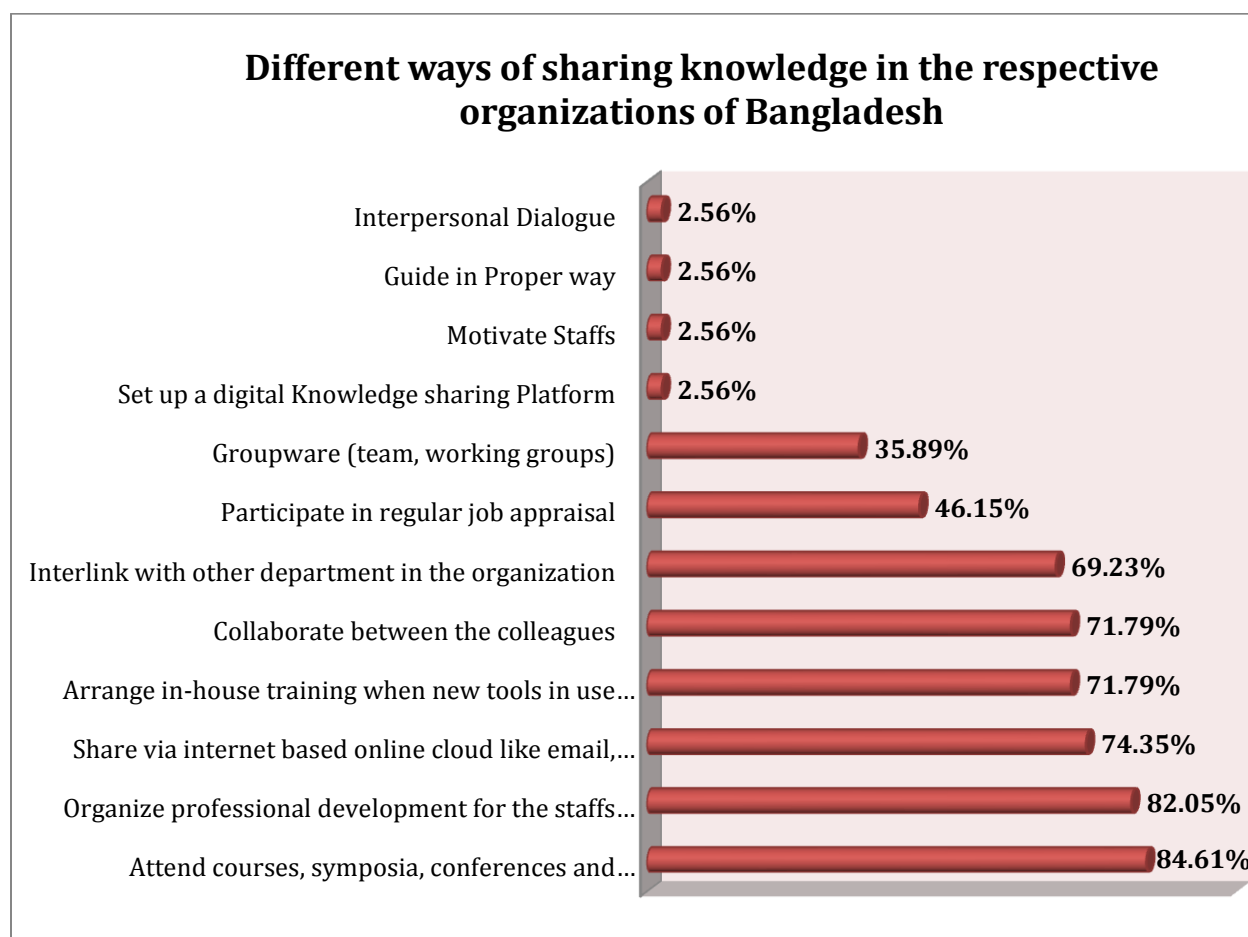


Figure 5.1: Different ways of sharing knowledge in the respective organizations

5.7 KS activities play vital role to develop organizational economy

Knowledge is power and sharing knowledge is more power now-a-days if it is happening in the organization. Therefore, the study was investigating whether KS activities play a vital

role in the organization to develop organizational economy. The findings are noted in Table 5.3 and enumerated below:

5.7.1 KS embeds in the organization's vision and strategy

Knowledge is seen for organizational effectiveness. KS works as an intangible asset in the organizations. Intangible assets have substantial implications for financing knowledge organizations vision (Bontis, 2001). In knowledge economy (KE), KS activities help the organization to reach their goal for the future. If the organizations already have bad experiences or complex situation before through KS activities in the organization, it is easy to overcome the problems and ready for the better performances in the next time. The respondents agreed with this statement (with a mean score of 6.00). The respondents stated that they also believe that if KS activities are not happening in that organization, the organization failed to fulfill their vision and mission.

5.7.2 KS increases effectiveness and sustainability of service

KS increasingly affects knowledge effectiveness under the condition of explicit knowledge (Wu & Lin, 2013). KS developing effectiveness in the service sector for sustainability. The respondent expressed that if KS is happening in the organization, the service sector of that organization is going to improve for better output in the future. They also stated that through KS activities every team member are getting opportunity to share their experiences and having KS environment in the organization. If the organizations could share their knowledge around others or outside of the organization, the organization is going to have good business sector and success with their organizational economy. The respondents agreed with this statement (with a mean score of 6.10) in Table 5.3.

5.7.3 KS builds success to improve livelihoods and shared prosperity

KS always effective for developing organizational economy, if the organizational economy is improved the staffs of that organization is going to get motivated and increased a good relationship with among one another. Therefore, the staffs of that organization are giving his/her full efforts to the organization. Therefore, the organizational economy is going to be developed and improved. If the organizational economy is improved, staffs of that

Chapter 5: State-of-the art of initiatives taken to facilitate KS activities for KBE in Bangladesh

organization is going to get more salary to improve their livelihoods and shared the prosperity to one another. The respondents agreed with this statement (with a mean score of 6.10) in Table 5.3. Some of the respondents stated that their jobs in sharing current information in the organization sometimes made the organization competitive in the business market. Few of the respondents explained that the organization will get more popular rather than other organization and develop more. Furthermore, they also asserted that their salary will increase and their family will be benefitted by this as well as the government will get the taxes.

Table 5.3: KS play a vital role to develop organizational economy

| Statements | N | Min. | Max. | Mean | Std. Dev. |
|--|----------|-------------|-------------|-------------|------------------|
| KS embeds in the organization's vision and strategy | 39 | 2 | 7 | 6.00 | 1.124 |
| KS increases effectiveness and sustainability of service | 39 | 4 | 7 | 6.10 | .882 |
| KS builds success to improve livelihoods and shared prosperity | 39 | 4 | 7 | 6.10 | .882 |
| KS solves operational problems by continually evaluating | 39 | 3 | 7 | 5.82 | 1.073 |
| KS improves organizational performance in the core business | 39 | 4 | 7 | 5.87 | .894 |
| KS implements and encourages more innovations | 39 | 4 | 7 | 5.92 | .984 |
| KS provides a clear communicable plan to go and how to get there | 39 | 3 | 7 | 5.79 | .978 |
| KS increases awareness and understanding across the organization | 39 | 4 | 7 | 6.10 | .912 |
| Valid N (listwise) | 39 | | | | |

5.7.4 KS solves operational problems by continually evaluating

Some of the respondents stated that KS help to solve operational problem in the organization to continuous evaluating. On the other hand, other respondents shared that

there is no proper system to evaluate in the organization. Moreover, few other respondents asserted that there is no scope even in the organization to evaluate operational problems. Furthermore, some other respondents reported that they have proper systems of evaluating operational problem in the organization. The respondents agreed with this statement (with a mean score of 5.82) in Table 5.3.

5.7.5 KS improves organizational performance in the core business

Lee & Yu (2011) found that an organization should establish, and maintain, relationships between employees to improve the sharing of knowledge within the organization, ensure a high interaction between employees, and create well-arranged knowledge resources for the organization. Some of the respondents expressed that KS activities helped the organization in organizational performances in the core business. They also told that the employees of the organization get better opportunities to improve themselves for the organizational performances. Marouf (2016) found that the role of KS cultures in business performance in the organization. The respondents agreed with this statement (with a mean score of 5.87).

5.7.6 KS implements and encourages more innovations

Sáenz, Aramburu, & Rivera, (2009) provided empirical evidence about the impact of KS on innovation. Moreover, it reveals what the most effective KS mechanisms are for this purpose, and provides companies with a basic framework in order to shape their KM strategies. Some of the respondents stated that KS encourages innovation. They also reported that innovation encourage people to solve the problems and face the complex situations in the organization. Moreover, another respondent expressed that experiences are very important to face the next problem as well as knowledge in the organizations. It brings new ideas in the organizations to solve the problem. The respondents agreed with this statement (with a mean score of 5.92) in Table 5.3.

5.7.7 KS provides a clear communicable plan to go and how to get there

Some of the respondents asserted that KS activities create a clear communicable plan in the organization and how to reach there. If the organization has KS activities in the

organization, then every employee of the organization will be aware of beforehand to avoid any complex situations about their responsibilities and the job what needs to be done. The respondents agreed with this statement (with a mean score of 5.79).

5.7.8 KS increases awareness and understanding across the organization

The respondent stated that if the organizations have the opportunity to have KS activities among the organization, the employees got awareness of the jobs needs to be finished. Therefore, the employee of the organization will understand the importance of the task needs to be finished on time. Moreover they also asserted that it creates a problem solving environment in the organizations and help the organization in the core business. The respondents agreed with this statement (with a mean score of 6.10) in Table 5.3.

5.8 Chapter summary

To develop KBE in Bangladesh, it is essential for the organization to support and inspire the staff to share knowledge among the colleagues in the organization. In this chapter there is number of proves that KS activities are helping in the organization to become successful organization. In addition without proper KS activities the organization can't be a successful organization. The result of this chapter shows KS activities have huge impact to the organization and organizational economy. It also reveals that KS help to facilitates knowledge creation, storage, retrieval and transfer; accomplishes development of tasks; improves job performance; speeds decision making; increases performance management; ensures transparency and accountability of the work; provides training and development for the colleagues; enhances team member knowledge; develops personal interaction with the colleagues; increases job effectiveness; and improves creativity or innovation in the organization. Moreover, the IPs of special libraries could face some challenges in sharing knowledge in the organizations to accelerate KBE in Bangladesh including 'Lack of immediate response by the colleagues to share information', 'Lack of trust of sharing knowledge', 'Lack of proper IT platform to share', 'Lack of organizational guidelines on sharing', 'Lack of encouragement of the IPs to initiate ideas', 'There is no reward system for KS in the organization', 'Lack of initiative for collaboration in the institutions', 'Lack of

Chapter 5: State-of-the art of initiatives taken to facilitate KS activities for KBE in Bangladesh

International-mindedness'. Therefore, the organization should help the staff to avoid those problems in the organization.

The study also finds that there are different ways to share knowledge in those respective organizations. They shared knowledge in the organization through 'attending the courses, symposia, conferences and workshops', 'organize professional development for the staff's training', and 'share via internet-based online cloud like email, Google applications, podcasting, blogging, social media'. Moreover, they also share knowledge through 'Microsoft education platform', 'arrange in-house training when new tools in use and exiting tools are changing' and 'collaborate between the colleagues' in the organization. Furthermore, 'interlink with other department' in the organization, 'participating in regular job appraisal', 'groupware (team, working groups)' and 'digital KS platform', 'motivation' and using 'interpersonal dialogue' in those respective organizations. The study also indicates that KS activities helped to develop in organizational economy. Moreover, "KS embeds in the organization's vision and strategy", "KS increases effectiveness and sustainability of service", "KS builds success to improve livelihoods and shared prosperity", "KS solves operational problems by continually evaluating", "KS improves organizational performance in the core business", "KS implements and encourages more innovations", "KS provides a clear communicable plan to go and how to get there" and "KS increases awareness and understanding across the organization" in the organization. Therefore, it is understandable that KS has significant role to develop organizational economy. If the organizational economy is developed the country's economic growth will be developed. The IPs of special libraries need to share their knowledge to develop the organizational economy. They need to arrange training, workshops and more professional development courses for the users of the organization. They need to use more digital tools and applications to increase efficiency of the users. Therefore, the IPs role will be effective for developing KBE in Bangladesh.

Chapter 6

Conclusion

Chapter 6: Conclusion**6.1 Introduction**

This last chapter brought out the complete findings of this research and discussed to answers of the major research question (MRQ) and subsidiary research questions (SRQs) which was made in the chapter one. It includes the perceptions of information professionals (IPs) in special libraries regarding knowledge-based economy (KBE), the key skills that are needed for the IPs of special libraries to successfully engage in KBE, and recommendations and suggestions for the creation of greater opportunities for the IPs of special libraries, including LIS professionals for building KBE in Bangladesh. Moreover, the study also explores the initiatives taken to facilitate knowledge sharing (KS) activities in the respective organization for KBE in Bangladesh. Finally, this study examines whether the special library play a significant role for building KBE in Bangladesh or not. Moreover, it also shows some recommendations for more opportunities regarding the IPs role could be more effective to contribute KBE in Bangladesh with suggestions. In addition, it shows the limitations for this study and directions for further research in this chapter.

6.2 Answers to research questions

Here are the research questions and answers to remembering the four SRQs and one MRQ in the study:

SRQ-1: What are likely to be the perceptions of the IPs in special libraries regarding KBE in Bangladesh?

Although Bangladesh has already started moving to KBE, the result of our study indicates that the perceptions of the IPs of special libraries regarding KBE are in an entry level. Some of the respondents who were working for knowledge management (KM) they have clear understanding about KBE but many of the respondents are still confused about the clear conception of KBE. Even though, they already knew about 'Digital Bangladesh' and the country move to middle-income country by 2021; and can join the ranks of the developed countries by 2041. Chapter three from Table 3.1 to 3.4 represents the findings of this

Chapter 6: Conclusion

research questions regarding the perceptions of the respondents in the special libraries of Bangladesh. The findings delineates (Table 3.1 of Chapter three) that regarding the respondents understanding as an experienced IPs of special libraries about KBE “The World Bank’s Knowledge for development program is based on four pillars: (1) economic and institutional regime, (2) education and skills, (3) information and communication technology (ICT), and (4) innovation” with the highest mean score of 6.31 on 7-point Likert scales followed by “depends on entrepreneurship, innovation, research and development (R&D) with and “peoples’ education and skills for growth and competitiveness in the global economy”(mean score 6.21). Moreover, “KBE is an economy which knowledge working as a capital for the economic growth and development” (mean score 6.15), “based on intellectual capital (IC) to develop organizational economy” (mean score 6.15), and “highly skilled people working as a human capital (HC) for the economic growth and development” (mean score 6.15). Furthermore, “improves the competitiveness of science, research, technology and innovation for social development and creation of wealth” (mean score 6.05), “creates an opportunity to encourage our national economy to international level” (mean score 6.0), and “process to overcome the problem and improve the productivity growth in the future” with the lowest mean score of 6.03. The study also shows (Table 3.2 of Chapter three) the respondents’ perceptions about KBE as an experienced IPs of special libraries that, “KBE will promote professional capacity in LIS professional with new opportunities”, with the highest mean score of 6.08 on 7-point Likert scales followed by “special library will play a vital role for building KBE in Bangladesh” (mean score 5.97) , “KBE is a new phenomenon for the IPs” (mean score 5.87), “include in the LIS curriculum” (mean score 5.82) and, “KBE is difficult to understand” with the lowest mean score of 3.77. There is a wide-range of literatures about building KBE in the developing and developed countries (Mustapha & Abdullah, 2004; Blankley & Booyens, 2010; Dyker & Radosevic, 2000; Yue, 2001). Therefore, building KBE is essential in Bangladesh, it also necessary to know how KBE can be established. The respondents shared their point of views (Table 3.3 of Chapter three) that “improve quality of education” with the highest mean score of 6.64 on 7-point Likert scales followed by “set-up progress ICT foundation for better access” (mean score 6.51), “increase education system for better employment opportunity in future” (mean score 6.41), “develop education for more lifelong learning” (mean score

Chapter 6: Conclusion

6.38), and “build-up world-class universities in the country and focuses in R&D with innovative work” (mean score 6.36) for developing KBE in Bangladesh. Moreover, “ensure general, moderate and fast broadband” (mean score 6.33), and “increase investment for innovation” (mean score 6.31) for building KBE. In addition, “create gainful plans of action to scale up ICT-based applications” (mean score 6.28), “improve the efficiency or quality of the labor force” (mean score 6.21), “increase HC for an advanced Bangladesh” (mean score 6.15), “nurture the innovative entrepreneurs” (mean score 6.13) and “put resources into science and innovation for ability improvement” (mean score 6.13) is also necessary to build KBE in Bangladesh. Furthermore, “understand the potential of innovation in the service sector” (mean score 6.18), “move from speculation-driven-economy to innovation-driven-economy” (mean score 6.10), “advance e-government and public sector reform” (mean score 6.10), “develop political stability for better control and combating corruption” (mean score 6.08), “grow more public-private associations” (mean score 6.08). Nevertheless, “enhance the part of government to help and empower KBE” (mean score 5.95), and “include more in global economic system” with the lowest mean score of 5.72 to build KBE in Bangladesh. There are a number of literatures showed that librarians or the IPs have a bigger role in the KM and knowledge economy (KE) era (Tarango & Machin-Mastromatteo, 2017; Ajiferuke, 2003; Wei-Choo, 2000; Ashcroft, 2004; Jantz, 2001; Ngulube, 2002; Abell & Oxbrow, 2006). Therefore, it is necessary to understand the IPs expected functional role in special libraries to accelerate KBE in Bangladesh. However, the study finds (Table 3.4 of Chapter three) that regarding the IPs of special libraries expected functional role in the KE era “support for research and development” with the highest mean score of 6.59 on 7-point Likert scales followed by “build a dynamic and digitized collection of information resources” (mean score 6.44), “preserve information to facilitate accurate decision making in corporate, academic and government settings” (mean score 6.38), “develop knowledge creation and innovation” (mean score 6.33). Moreover, “meet information needs to achieve the mission and goals of the organization” (mean score 6.31), “provide training to improve efficiency of the user” (mean score 6.31), “promote media and digital literacy in the organization” (mean score 6.15) and “analyze and interpret the information which is originated, described, stored, organized, retrieved, disseminated, modified and used” (mean score 6.08) respectively. On the other hand, “compete

Chapter 6: Conclusion

intelligence and market research for business development” with the lowest mean score of 5.72 (Chapter three for more details).

SRQ-2: What are likely to be the key skills needed for the IPs of special libraries to successfully engage KBE in Bangladesh?

Skill workforce is necessary for the economic development of the country. There is a wide-range of literatures showed that how skills are important in KE and the key driver of the KBE (Reitz, 2005; Abell & Oxbrow, 1999; Seltzer & Bentley, 1999; Kim & Mauborgne, 1999; Brown, Hesketh & Williams, 2003; Hepworth, Binks & Ziemann, 2005; Fenwick & Hall, 2006; Wagner, 2006; Warhurst, 2008; Ananiadou & Claro, 2009; Hendarman & Tjakraatmadja, 2012). Moreover, the IPs or the special librarians also need to improve their skills and competencies to contribute in KBE of Bangladesh. There are a number of literatures revealed how the librarian or IPs role in the KE era in the world (Materska, 2004; Hayes, 2004; Klusek & Bornstein, 2006; Trilling & Fadel, 2009; Taylor et al., 2012). Therefore, identify the key skills and competencies that are needed for the IPs of special libraries to contribute KBE in Bangladesh is also important. However, the findings of the study indicate that key skills and competencies are necessary for the IPs of special libraries. Figure 1 and chapter four indicates that more than eighty-nine percent (89.74%) of the respondents reported that strong ‘ICT skills’ which was the highest in the percentages, with their practical experiences need for the IPs of special libraries to contribute KBE in Bangladesh. On the other hand, 87.17% of the respondents stated that strong ‘information management skills’ is necessary to manage the information both printed and digitally, followed by ‘communication skills’ (84.61%), ‘creativity and innovation skills’ (76.92%), ‘leadership skills’ (71.79%), ‘analytical skills’ (69.23%), ‘management skills’ (66.66%), ‘intellectual skills’ (58.97%), ‘initiative and self-direction skills’ (53.84%), ‘media literacy (35.89%). Interestingly, 2.56% of the respondents reported that ‘strong moral skills’ (self-respect, honesty, and dignity), ‘behavior skills’, ‘marketing skills’, and ‘info. product re-engineering skills’, ‘subject knowledge’, ‘motivation skills’, ‘administrative skills’, ‘confidence’, ‘customer care skills’, ‘monitoring and evaluation skills’, ‘public relation skills’, ‘event management skills’, and ‘team management skills’ also necessary to implicate KBE in

Chapter 6: Conclusion

Bangladesh. Moreover, Table 4.1 and chapter four indicates the expected qualities of the IPs in the KE era, “integrated and widespread ICT applications” with the highest mean score of 6.54 on 7-point Likert scales followed by “understand the importance of IT and flow of information” (mean score 6.51), “communicate both orally and in writing” (mean score 6.46), “find information quickly using online catalog, digital resources and databases” (mean score 6.44), and “provide strong level of customer service” (mean score 6.41). In addition, the IPs should have qualities of “adapt to new tools, systems, and situations” (mean score 6.38), “identify and evaluate information services, sources and products” (mean score 6.33), “work as a team player maintaining effective working relationships” (mean score 6.31), “involve in knowledge creation and innovation” (mean score 6.26) to involve in the KE era. Furthermore, “exercise new initiative and work independently” (mean score 6.23), “manage the environment, physical and digital assets” (mean score 6.21) and, “overcome issues by focusing on solutions instead of on the problems” with the lowest mean score of 6.00 is needed to contribute KBE in Bangladesh. However, respondents shared certain barriers according to their experiences for the IPs of special libraries to accelerate KBE in Bangladesh. The findings (Chapter four and Figure 4.3) show that, more than seventy-nine percent (79.48%) of the respondents declared about ‘lack of understanding the librarian roles and skill set’, (the second highest position in percentage), with their experience could be major barrier for the IPs to involve KBE in Bangladesh. On the other hand, more than seventy-one (71.79%) of the respondents, which was the second highest reported that ‘lack of opportunities for specific training’ and ‘right person for the right position’ could be another obstacles for the IPs in the organization, followed by ‘lack of proper technological facilities’ and ‘inadequate budget for professional development’ (66.66%), ‘lack of employee motivation’ (46.15%), ‘organizational hierarchy approval’ (35.89%), ‘explain to sub-ordinates’(25.64%), ‘lack of convenient time’ and ‘lack of subject knowledge’ (5.12%), ‘lack of patronizing and motivation’ and also ‘lack of skilled professional’(2.56%) could be barriers for them to involve KBE in Bangladesh (Chapter four for more details).

SRQ-3: What are the recommendations and suggestions for the creation of greater opportunities for the IPs of special libraries, including LIS professionals to build KBE in Bangladesh?

The roles of the IPs are essential to develop KBE; therefore, it is necessary to know for the IPs of special libraries including LIS professionals to build KBE in Bangladesh. A good number of literatures have explored the relationships and recommended about IPs and LIS professionals' roles for the greater opportunities in the KE era (Abram, 1997; Loughridge, 1999; Owen, 1999; Biddiscombe, 2001; Bryson, 2001; Breen et al., 2002; Arnal, Ok & Torres, 2003; Pantry & Griffiths, 2003; Jain & Mutula, 2008; Dasgupta, 2009; Roknuzzaman & Umemoto, 2009; Yaacob, Jamaluddin & Jusoff, 2011; Moahi, 2012). The findings (Figure 3.1 of chapter three) of the study indicates that the modern and expanded roles of the special librarian or the IPs of special libraries in Bangladesh. The highest percentage more than ninety-two percent (92.30%) of the respondents stated that 'Knowledge Management Specialist' is an expanded and desired role for the IPs to develop KBE in Bangladesh. On the other hand, more than sixty-one percent (61.53%) of the respondents, which is the second highest also declared 'Database Manager' as the desired expanded role for the IPs to develop KBE in Bangladesh. This was followed by other roles such as 'Information Broker' (46.15%), 'Innovative Technology Leader' (35.89%), 'Facilitator' (51.28%), 'Educator Train Clients' (20.51%), 'Innovator' (28.20%), 'Policy Maker' (15.38%), 'Media Specialist' (20.51%), 'Data Management Officer' (2.56%), 'Executive of Information and Knowledge Management' (2.56%), 'KBE Goal Oriented Programmer' (2.56%), 'Knowledge Trainer' (On the basis of the nature of respective organization) (2.56%), 'Information Managers' (2.56%), 'Reference Editor' (2.56%), 'Deputy Manager/Manager/Sr. Manager' (2.56%), 'System Analyst' (2.56%), and 'Service Innovation Provider' (2.56%). In order to create greater opportunities for the LIS professionals in those 31 respondents' organizations, the study shows the characteristics or attributes on hiring to accelerate KBE in those respective organizations (Table 4.2 of Chapter 4). The findings show that the respective organization will see on hiring 'applicants' communication skills' with the highest mean score of 6.62 on 7-point Likert scales followed by 'applicants' attitude & manner' (mean

Chapter 6: Conclusion

score 6.33), 'applicants' educational qualifications' (mean score 6.21), 'analytical knowledge' (mean score 6.05), 'previous work experience' (mean score 5.85), 'academic performance' (mean score 5.46) and 'previous employer references' (mean score 5.03). To explore the scenario of LIS professionals the respondents were asked to mention the numbers of professionals are working in these special libraries in the respective organizations. On the other hand, 'recommendations' with the lowest mean score of 4.10 on hiring. The findings (Figure 4.2 of chapter 4) defined that the number of professional are working as a LIS 'Professional', 'Semi-Professional' or 'Non-Professional' in the (N=31) respective libraries or information centers in Bangladesh. However, the study finds that total number 300 (100%) of people are working in the libraries or information centers in those organizations. In addition, 133 (44.33%) people are working as LIS 'Professionals' who completed their graduation, post-graduation, M.Phil. or Ph.D. from the LIS education in the respective universities of Bangladesh. On the other hand, 19 (6.33%) people are working as a 'Semi-Professionals' who completed their diploma, certificate course from the same discipline in the different colleges or institutes. Moreover, 148 (49.33%) are 'Non-Professionals' who completed their graduation, post-graduation or others certificate courses from the other subject areas, but work in the special libraries of Bangladesh. Therefore, it is clearly seen that LIS professionals are not working in every areas, which not a good sign for LIS professionals and LIS students. The respondents also suggested different ways to develop skills for the IPs to contribute KBE such as ICT training and knowledge; higher education; English proficiency training or courses; innovation; research & development; attend workshops, seminars with follow-up, and symposiums; visiting different libraries and information centers; adequate training, entrepreneurship and KS; gather subject and economic knowledge as well as knowledge-based training. The respondents also recommended skills and competencies for the students of LIS education can develop before entering into the workplaces including communication skills; ICT skills with practical experiences; experiences on library management databases and e-resources; behavior skills, attitude, manner and etiquette and motivation; higher education and research methodology; creative and innovation skills; subject knowledge and continued learning; visit libraries and information centers; internship, classification, cataloguing and indexing skills.

Chapter 6: Conclusion**SRQ-4: What are likely to be the initiatives taken to facilitate knowledge sharing (KS) activities in the organization of special libraries for KBE in Bangladesh?**

Knowledge is power and sharing knowledge is more power. KS influences commitments, behaviors, trusts, self-efficacies and motivation in the organization (Bock et al., 2005; Fernie et al., 2003; Riege, 2005; Wang & Noe, 2010; Hsu et al., 2007; Holste & Fields, 2010; Lin, 2007; Casimir, Lee & Loon, 2012). Moreover, KS is based on KM and inter-connected to KE and KBE. There are a number of literatures discussed about KS and KE (Amesse & Cohendet, 2001; Styhre, 2002; Swart & Kinnie, 2003; Adler, 2001; Wang & Wang, 2012). In KBE, knowledge is working as a capital, therefore it is important to know whether the IPs are getting opportunities to share their knowledge in their respective organization. Moreover, the respective organization has any guidelines or policy in sharing knowledge. The findings (Table 5.1 of Chapter five) indicates the respondent's perceptions on sharing knowledge in their respective organization, "improves creativity or innovation" with the highest mean score of 6.41 on 7-point Likert scales followed by "facilitates knowledge creation, storage, retrieval and transfer" (mean score 6.26), "enhances team member knowledge" (mean score 6.26), and "accomplish development of tasks (mean score 6.08). Moreover, "improves job performance" (mean score 6.21),"increases job effectiveness" (mean score 6.21), and "provides training and development for the colleagues" (mean score 6.15). Furthermore, "ensures transparency and accountability of the work" (mean score 6.13), "personal interaction with the colleagues" (mean score 6.13), "increases performance management" (mean score 6.00), "speed decision making" with the lowest mean score of 5.95. The respondents also delineate that the challenges in sharing information between colleagues and other sections within the organization. The findings (Table 5.2 in chapter five) indicate that 'lack of immediate response by the colleagues to share information' and 'lack of encouragement of the IPs to initiate ideas' with the highest mean score of 5.36 on 7-point Likert scales followed by 'lack of proper information technology (IT) platform to share' (mean score 5.31), 'lack of organizational guidelines on sharing knowledge' (mean score 5.26), 'lack of trust of sharing knowledge' (mean score

Chapter 6: Conclusion

5.18), 'there is no reward system for KS in the organization' (mean score 5.18), 'lack of initiative for collaboration in the institutions' (mean score 5.15) and, 'lack of international-mindedness' with the lowest mean score of 5.00 are the challenges in sharing information between colleagues and other sections within the organization. The respondents were asked to specify how they share knowledge if they have the opportunity in the organizations. The findings from chapter five reveal that more than eighty-four percent (84.61%) of the respondents stated that they share their knowledge "attending the courses, symposia, conferences and workshops". On the other hand, more than eighty-two percent (82.05%) of the respondents reported that they "organize professional development for the staffs training" to share knowledge in the organization, followed by "internet-based online cloud like email, Google applications, podcasting, blogging, social media, Microsoft education platform and etc.", (74.35%), and "arranging in-house training when new tools in use and exiting tools are changing" (71.79%). Moreover, "collaborate between the colleagues" (69.23%), "interlink with other department" (46.15%), "participating in regular job appraisal", groupware (35.89%), "set up a digital KS platform", "motivate staff to involve", "guide in proper way" and "using interpersonal dialogue" (2.56%) respectively to share their knowledge. It is also necessary to investigate that KS activity could play a vital role or not for developing organizational economy in particular to KBE in Bangladesh. The findings (Table 5.3 of Chapter five) show that "KS increases effectiveness and sustainability of service", "builds success to improve livelihoods and shared prosperity" and "increases awareness and understanding across the organization" with the highest mean score of 6.10 on 7-point Likert scales followed by "embeds in the organization's vision and strategy" (mean score 6.00), "implements and encourages more innovations" (mean score 5.92), "improves organizational performance in the core business" (mean score 5.87), and "solves operational problems by continually evaluating" (mean score 5.82), and "KS provides a clear communicable plan to go and how to get there" with the lowest mean score of 5.79 for developing organizational economy (Chapter five for more details information).

MRQ: How do special libraries play a significant role for building KBE in Bangladesh?

There are a number of proves in this study reveals that special libraries are playing a vital role for building KBE in Bangladesh. Even though to investigate, we asked the respondents through structured questionnaire whether they agree or not that special library has significant role to build KBE in Bangladesh. Most of the respondents strongly agreed that special libraries have a bigger role to build in KBE in Bangladesh. On the other hand, a very few number of respondent not agreed that special libraries are playing the vital role to establish KBE in Bangladesh. One respondent stated that not all, some of the special libraries is working for KBE in Bangladesh. On the other hand, another respondent asserted that all types of libraries are playing an important role to make and develop KBE in Bangladesh. Certainly the special library has the significant role in KBE, told by another respondent. Moreover, one respondent stated that KBE is necessary to corporate with developed economy. Furthermore, it can improve our economy stated by another respondent. We also asked the respondents if they agreed that special libraries are playing significant role for building KBE in Bangladesh, then they can recommend some more opportunities regarding IPs role could be more effective to contribute KBE in Bangladesh (see details in chapter four). According to the respondents' recommendations on KBE, special libraries can arrange training, workshops, and seminars and orientation programs; ICT-knowledge and relevant software operating skills; overcome the challenges; innovation and innovation project in the special library; KM and economic oriented knowledge; create awareness, clear concept and understanding about KBE; more desired and expanded roles for the IPs; female library professional participation and development is necessary (see details in chapter four). Therefore, it can be suggested that libraries need to work as an innovation center in the KE era. Librarian or the IPs in special libraries need to be more innovative and critical thinker. More innovative projects are necessary in the library. Moreover, library or information services need to be reforming using modern technology, applications including learning commons, maker spaces, STEM education, digital services, library renovation, learning zone (common), digital strategy, digital by default, flipped

Chapter 6: Conclusion

learning etc. Furthermore, the IPs of special libraries also can follow developed countries innovative project and services for the library. LIS professionals as well as the IPs of special libraries need to acquire higher education including R&D with innovative works and gather more economic oriented knowledge. Therefore, the IPs of special libraries need to practice and get opportunity to use e-resources and digital technologies in the work place to ensure e-services to the users of the organizations. Furthermore, the IPs of special libraries need to gather massive knowledge about ICT applications, ICT tools, IT, digital technologies, digital literacies, digital tools, digital services, software, network to provide services to the users in this modern economy. LIS students and the young LIS professionals should develop their communication, ICT, creative thinking, analytical, behavior skills as well as gather practical and subject knowledge to involve in KBE. Therefore, it is necessary to create awareness among them about competitive job market for better future in Bangladesh. Moreover, they should develop themselves with research methodology knowledge to do support more in R&D in the organizational development. To establish KBE in Bangladesh, the country needs more female professional contribution. LIS jobs are much secured for the female LIS professionals. Therefore, they need to be encouraged to join the country economy. 'Knowledge Management' is a course which is introduced in the LIS education. 'Knowledge economy' and 'knowledge-based economy' are also related to KM. If KBE can also include in LIS education, the students of LIS education as well as LIS professionals will have clear understanding of KBE and they can contribute more developing KBE in Bangladesh.

6.3 Practical implications of the research

We are expecting this practical implication and benefits of the research.

6.3.1 Implications of the IPs of special Libraries

Based on the result of the study the IPs of special libraries will be conscious of the effect of KBE in Bangladesh. Moreover, they will get a clear concept about what is the IPs modern role in this age of knowledge economy. They also will know about the key skills and competencies that are needed for the IPs of special libraries to involve KBE in Bangladesh.

Chapter 6: Conclusion

Moreover, what skills are getting more priorities and need to develop they will get some directions from this study. Therefore, how the IPs of special libraries can develop their skills and also some suitable suggestions for them to develop their skills to contribute KBE in Bangladesh. In addition, this study also states that what could be the barriers for them to involve in KBE and overcome those challenges. Apart from this, if the IPs of special libraries want to work in those respective special libraries in Bangladesh, they will aware of beforehand what are the characteristics and attributes that has been given priority on the job hiring. Besides, this study finds the benefit of sharing knowledge through the IPs in the organization. Therefore, the IPs of special libraries will get some guidelines and instructions the benefits of sharing knowledge in the organization. Moreover, they will also understand how KS helps in organizational economy and how it is connected in the national economy.

6.3.2 Implications for LIS education and professionals

The findings of the study show how KBE is important in Bangladesh to create national innovation system. Now the concept and role of library have been revolutionized and it has become a place for knowledge creation and innovation. Thus, the new name of 'Library' could be 'Library Innovation Hub', 'Innovation Lab', 'Innovation Center', 'Information Common', and 'Learning Common'. Hence, the IPs of special libraries could start using innovation tool kit and technological innovation projects, social innovations, service innovations, and knowledge creations & innovations in the library. Library innovation is going to affect organizational innovation, and organizational innovation is going to impact regional innovation and regional innovation is based on national innovation system as well as the country performances. LIS education is the core for the LIS professionals; therefore, the study will give some guidelines and directions about how innovation is important for the LIS education and professionals. Besides, the study also indicates the IPs of special libraries need to be entrepreneur, higher educated, highly skilled for contributing KBE in Bangladesh. This study also shows the barriers for the IPs to accelerate KBE in Bangladesh and recommends for the IPs to overcome those problems. Knowledge education is getting popular day-by-day. This study also helps the KM experts in the LIS education to know more about KBE and how it is connected to KM and its impact on Bangladesh. To create a

Chapter 6: Conclusion

knowledge society in Bangladesh, the study will help to understand the current scenario and present status of IPs of special libraries in Bangladesh.

6.3.3 Implications of LIS students

This study is discussed about important skills for the LIS students. Therefore, the students of LIS education will get some instructions about their skills to develop before entering into the workplaces. Moreover, this study also finds the expected characteristics or attributes among the IPs on hiring in those thirty-one respective organizations. There are a number of recommendations and suggestions for the LIS students about the most priority skills that should be adopted immediately. The study also indicates that the key skills that are more important and necessary for the students of LIS education to develop in the student life. In addition, they will get to know from this study about some suitable suggestions and different ways to develop their skills. They will get to know different ways to share knowledge in the organization. Therefore, they will be able to understand about the modern technology for sharing knowledge in the organization.

6.4 Research limitations

The study was conducted taking some selective special libraries of Bangladesh; it could not cover all special libraries in Bangladesh. Particularly, the study could not include different district-level special libraries of Bangladesh. The researcher couldn't take face-to-face interview from all the respondents of special libraries, as some of the respondents couldn't be able to give time to the researcher for their busy schedule and the official restricted entrance procedures in the organization. There is also a lack of adequate time and fund for this study.

6.5 Directions for further research

The current study provides guidelines and recommendations for further research to investigate another research including all special libraries of Bangladesh with adequate time and sufficient fund. To build KBE in Bangladesh, special library is one area to develop and the IPs of special libraries have the role to develop and play the significant role only for

Chapter 6: Conclusion

that organization. In addition, further research project may be undertaken covering all libraries as well as all LIS professionals, LIS students, and KM experts in LIS education to explore the potentialities and massive contributions of LIS professional for converting Bangladesh into knowledge-based society and her economy will be knowledge-based economy.

6.6 Chapter summary

The main aim of this chapter was to conclude the overall summary of the findings from study as well as practical implication with further research. The findings summary of this chapter answered all the research questions. Moreover, the study also suggested that libraries need to move traditional to an innovation center in the KE era. Librarian or the IPs of special libraries need to be more innovative and critical thinker for this modern economy. Library or information services need to be reforming using modern technology, applications including learning commons, maker spaces, STEM education, digital services, library renovation, learning zone (common), digital strategy, digital by default, flipped learning etc. Furthermore, the IPs of special libraries also can follow developed countries innovative project and services for the special library. Library innovation is connected to the organizational innovation. Besides, the study also suggested that LIS professionals as well as the IPs of special libraries need to acquire higher education including R&D with innovative works, use e-resources and digital technologies to ensure e-services, massive knowledge about ICT applications, ICT tools, IT, digital technologies, digital literacies, digital tools, digital services, software, network to provide services to the users in this modern economy. In addition, the study also finds the importance of creating awareness to the student of LIS education and the young LIS professionals for developing their communication, ICT, creative thinking, analytical, behavior skills as well as gather practical and subject knowledge for the competitive job market and better future in Bangladesh. To establish KBE in Bangladesh, the country needs more female professional's contribution. LIS jobs are much secured for the female LIS professionals to join the country economy. KE and KBE can be introduced with KM in LIS education for better understanding of KBE to

Chapter 6: Conclusion

contribute more in Bangladeshi economy. Moreover, the study also indicates the practical implications of the research for the IPs of special libraries, LIS education and professionals and the LIS students. The study also discusses how innovation is important in the library to connect with organizational innovation, regional innovation system, and national innovation system to grow with the country performances. This chapter indicates limitations and directions for future research as well.

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Appendix A: Questionnaire on “The Role of Special Libraries for Building Knowledge-based Economy in Bangladesh”



University Of Dhaka

The Role of Special Libraries for Building Knowledge-based Economy in Bangladesh

Targeted Groups: The Information Professionals in the Special Libraries in different positions

Conducted by

Syeda Mukta Begum

Supervisor: Professor Dr. Md. Shiful Islam

M.Phil. Program

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Background

To examine the role of special libraries for building Knowledge-based Economy (KBE) in Bangladesh, as an M.Phil. researcher, I am conducting this survey under the supervision of Professor Dr. Md. Shiful Islam in the Department of Information Science and Library Management at the University of Dhaka. This study will cover the Information Professionals of special libraries in different positions. I would like to take this opportunity to express my heartfelt gratitude to you in advance and also invite to provide information about KBE in your organizations.

Summary and Guidelines

In this questionnaire the researcher divided into 4 sections. Section 1 includes 5 questions from 1.1 to 1.5, which seek to know about the perceptions of Information Professionals regarding KBE in Bangladesh, Section 2 contains 7 questions from 2.1 to 2.7 highlighting skills and competencies needed in special libraries for building KBE and Section 3 asks 5 questions 3.1 to 3.5 focusing the state-of-the art of initiatives taken to facilitate knowledge sharing activities for KBE. Section 4 contains 3 general questions from 4.1 to 4.3 regarding the background information of the respondent. The questions are of both closed and open-ended category.

Confidentially

The researcher is ensuring that your survey responses will be strictly confidential and will not be disclosed or shared with any individual or organization under all circumstances. The data and information provided by you will be exclusively used in academic purpose.

Contributions

The highly expectation from this study is that LIS professionals will be benefitted through knowing the significant role of special libraries for building KBE in Bangladesh. More specifically, the perceptions and experiences from the Information Professionals in special libraries will contribute a lot for LIS education.

Contact

If you have any questions or comments or more information to know on this study or the questionnaire, please feel free to contact in this number Mobile: 01710068606 or email me mukta.begum@isdbd.org or syedamukta@yahoo.com

Appendix A: Questionnaire on “The Role of Special Libraries for Building Knowledge-based Economy in Bangladesh”

Questionnaire on “The Role of Special Libraries for Building Knowledge-based Economy in Bangladesh”

Section 1: Perceptions of Information Professionals regarding Knowledge-based Economy (KBE) in Bangladesh

1.1 Please put a tick mark (√) to indicate your level of agreement with the following statements (1=Strongly Disagree; 2= Somewhat disagree; 3=Disagree; 4= Neutral; 5=Somewhat Agree; 6= Agree; 7= Strongly Agree) ranging the questions no 1.1, 1.2, 1.3 to1.4

| Statements | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| KBE is an economy in which knowledge working as a capital for the economic growth and development | | | | | | | |
| KBE is a process to use new and existing knowledge to overcome the problem and improve the productivity growth in the future | | | | | | | |
| KBE is based on Intellectual Capital which is employees’ brains, skills, ability, creativity and potentiality using to develop organizational economy | | | | | | | |
| KBE creates an opportunity to encourage from national economy to international level | | | | | | | |
| KBE is an economy where highly skilled people working as human capital for the economic growth and development | | | | | | | |
| KBE depends on entrepreneurship, innovation, research and development, peoples’ education and skills for growth and competitiveness in the global economy | | | | | | | |
| KBE improves the competitiveness of science, research, technology and innovation for social development and creation of wealth | | | | | | | |
| The World Bank’s Knowledge for Development (K4D) program is based on four pillars: (1) Economic and Institutional Regime, (2) Education and Skills, (3) Information and Communication Technology (ICT) (4) Innovation | | | | | | | |

1.2 Would you please mention your perception about KBE in Bangladesh?

| Statements | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|---|---|---|---|---|---|---|
| KBE is a new phenomenon for Information Professionals | | | | | | | |
| KBE is difficult for me to understand | | | | | | | |
| KBE will help to promote professional capacity in LIS Professionals with new opportunities | | | | | | | |
| KBE will include in LIS curriculum in future | | | | | | | |
| Special library will play a vital role for building KBE in Bangladesh | | | | | | | |

Appendix A: Questionnaire on “The Role of Special Libraries for Building Knowledge-based Economy in Bangladesh”

1.3 Please mention how can we build or develop knowledge-based economy in Bangladesh?

| Statements | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|---|---|---|---|---|---|---|
| Enhance the part of government to help and empower KBE | | | | | | | |
| Develop political stability for better control and combating corruption | | | | | | | |
| Include more in global economic system | | | | | | | |
| Improve the efficiency or quality of the labor force | | | | | | | |
| Increase human capital for an advanced Bangladesh | | | | | | | |
| Grow public– private associations | | | | | | | |
| Improve quality of education | | | | | | | |
| Develop education for more lifelong learning | | | | | | | |
| Increase education system for better employment opportunity | | | | | | | |
| Build-up world-class universities and focuses in research and development with innovative work | | | | | | | |
| Understand the potential of innovation in the service sector | | | | | | | |
| Nurture “innovative entrepreneurs” | | | | | | | |
| Increase investment for innovation | | | | | | | |
| Move from speculation-driven economy to innovation-driven economy | | | | | | | |
| Put resources into science and innovation for ability improvement | | | | | | | |
| Set up progress ICT foundation for better access | | | | | | | |
| Ensure general, moderate and fast broadband | | | | | | | |
| Create gainful plans of action to scale up ICT-based applications | | | | | | | |
| Advance e-government and public sector reform | | | | | | | |

1.4 Please mention how would the role of information professionals be functional to accelerate KBE?

| Statements | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Provide information needs to achieve the mission and goals of the organization | | | | | | | |
| Preserve information to facilitate accurate decision making in corporate, academic and government settings | | | | | | | |
| Provide the right information to the right people at the right time | | | | | | | |
| Develop knowledge creation and innovation | | | | | | | |
| Provide training to improve efficiency of the user | | | | | | | |
| Build a dynamic and digitized collection of information resources | | | | | | | |
| Promote media and digital literacy in the organization | | | | | | | |
| Analyze and interpret the information which is originated, described, stored, organized, retrieved, disseminated, modified and used | | | | | | | |
| Compete intelligence and market research for business development | | | | | | | |
| Support for research and development | | | | | | | |

Appendix A: Questionnaire on “The Role of Special Libraries for Building Knowledge-based Economy in Bangladesh”

1.5 In your opinion, in this knowledge economy era what can be the modern role of special librarian or Information Professionals in Bangladesh?

- Information Broker or Consultant
- Innovative Technology Leader
- Facilitator
- Educator Trains Clients
- Innovator
- Database Manager
- Policy Maker
- Media Specialist
- Knowledge Management Specialists
- If others, please mention
.....

Section 2: Skills and competencies needed in the special libraries for building KBE in Bangladesh

2.1 What are likely to be the key skills needed for Information Professionals to engage in KBE in Bangladesh? If you like to add more skills please do so.....

- Communication Skills
- Creativity and Innovation skills
- Information Management skills
- Media Literacy skills
- ICT skills
- Initiative and Self-direction skills
- Leadership skills
- Management skills
- Intellectual skills
- Analytical skills
-
-
-

2.2 Please mention what could be the quality of the Information Professionals in this knowledge economy era? Please put a tick mark (√) to indicate your level of agreement with the following statements (1=Strongly Disagree; 2= Somewhat disagree; 3=Disagree; 4= Neutral; 5=Somewhat Agree; 6= Agree; 7= Strongly Agree) ranging the questions no 2.2 to 2.3

| Statements | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|---|---|---|---|---|---|---|
| Communicate both orally and in writing | | | | | | | |
| Provide strong level of customer services | | | | | | | |
| Adapt to new tools, systems, and situations | | | | | | | |
| Work as a team player maintaining effective working relationships | | | | | | | |
| Overcome issues by focusing on solutions instead of on the problems | | | | | | | |
| Understand the importance of IT and flow of information | | | | | | | |
| Manage the environment, physical and digital assets | | | | | | | |
| Involve in knowledge creation and innovation | | | | | | | |
| Exercise new initiative and work independently | | | | | | | |
| Find information quickly using online catalog ,digital resources and databases | | | | | | | |
| Identify and evaluate information services, sources and products | | | | | | | |
| Integrated and widespread ICT applications | | | | | | | |

Appendix A: Questionnaire on “The Role of Special Libraries for Building Knowledge-based Economy in Bangladesh”

2.3 What are likely to be the most critical characteristics or attributes you would like to see on hiring as a Resource Person or an Information Professionals to accelerate KBE in your organization?

| Statements | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|---|---|---|---|---|---|---|
| Applicants’ educational qualifications | | | | | | | |
| Applicants’ attitude & manner | | | | | | | |
| Applicants’ communication skills | | | | | | | |
| Previous employer references | | | | | | | |
| Previous work experiences | | | | | | | |
| Academic performance | | | | | | | |
| Recommendations | | | | | | | |
| ICT skills | | | | | | | |
| Analytical knowledge | | | | | | | |
| Information management skills | | | | | | | |

2.4 Please specify the numbers of professionals or staffs are working in the library including LIS -----

- Professionals.....
- Semi-Professionals.....
- Non-Professionals.....

2.5 Please specify what could be the barrier for the Information Professionals to accelerate KBE in Bangladesh.

- Lack of proper technological facilities
- Lack of opportunities for specific training
- Lack of employee motivation
- Right person for the right position
- Lack of convenient time
- Lack of understanding the librarian roles and skill set
- Inadequate budget for professional development
- Explain to sub-ordinates
- Organizational hierarchy approval
-

2.6 How could Information Professionals develop their skills to build KBE in Bangladesh? Please provide some suitable suggestions or comments below:

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2.7 Would you please recommend about skills for the students of LIS education what they should develop before entering into the workplace?

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Section 3: State-of-the art of initiatives taken to facilitate Knowledge Sharing (KS) activities for KBE

3.1 Please specify your perception on the environment for sharing of knowledge in your organization? Please put a tick mark (√) to indicate your level of agreement with the following statements (1=Strongly

Appendix A: Questionnaire on “The Role of Special Libraries for Building Knowledge-based Economy in Bangladesh”

Disagree; 2= Somewhat disagree; 3=Disagree; 4= Neutral; 5=Somewhat Agree; 6= Agree; 7= Strongly Agree) ranging the questions no.3.1 to 3.2 to 3.4.

| Statements | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Facilitates knowledge creation, storage, retrieval and transfer | | | | | | | |
| Accomplishes development of tasks | | | | | | | |
| Improves job performance | | | | | | | |
| Speeds decision making | | | | | | | |
| Increases performance management | | | | | | | |
| Ensures transparency and accountability of the work | | | | | | | |
| Provides training and development for the colleagues | | | | | | | |
| Enhances team member knowledge | | | | | | | |
| Develops personal interaction with the colleagues | | | | | | | |
| Increases job effectiveness | | | | | | | |
| Improves creativity or innovation | | | | | | | |

3.2 What are likely to be the challenges in sharing information between colleagues and other sections within the organizations?

| Statements | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|---|---|---|---|---|---|---|
| Lack of immediate response to share information | | | | | | | |
| Lack of trust of sharing knowledge | | | | | | | |
| Lack of proper IT platform to share | | | | | | | |
| Lack of organizational guidelines on sharing | | | | | | | |
| Lack of encouragement of Information Professionals to initiate ideas | | | | | | | |
| There is no reward system for KS in the organization | | | | | | | |
| Lack of initiative for collaboration in the institutions | | | | | | | |
| Lack of International-mindedness | | | | | | | |

3.3 Please specify how you share your knowledge if you get opportunity in the institutions.

- Organize professional development for the staffs training
- Participate in regular job appraisal
- Attend courses, symposia, conferences and workshops
- Arrange in-house training when new tools in use and exiting tools are changing
- Collaborate between the colleagues
- Interlink with other department in the organization
- Share via internet based online cloud like email, Google applications, Podcasting, Blogging, Social media, Microsoft education platform
- Groupware (team, working groups)
-

3.4 How could KS activities play a vital role to develop organizational economy in particular to KBE?

| Statements | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|---|---|---|---|---|---|---|
| KS embeds in the organization’s vision and strategy | | | | | | | |
| KS increases effectiveness and sustainability of service | | | | | | | |

Appendix A: Questionnaire on “The Role of Special Libraries for Building Knowledge-based Economy in Bangladesh”

| | | | | | | | |
|--|--|--|--|--|--|--|--|
| KS builds success to improve livelihoods and shared prosperity | | | | | | | |
| KS solves operational problems by continually evaluating | | | | | | | |
| KS improves organizational performance in the core business | | | | | | | |
| KS implements and encourages more innovations | | | | | | | |
| KS provides a clear communicable plan to go and how to get there | | | | | | | |
| KS increases awareness and understanding across the organization | | | | | | | |

3.5 Do you agree that the special libraries are playing significant role for building KBE in Bangladesh? If you agreed, please recommend some more opportunities as much as you think the role of Informational Professionals could be more effective to develop KBE in Bangladesh.

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Section 4: Background information of the respondent in the special library

4.1 Please specify your present position in institutions/organizations.

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4.2 Educational Qualifications

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4.3 Name of the organization

.....

I would be happy if you make comments on the questionnaire

.....

.....

Email.....

Contact Number..... Signature and Date

I would like to show my deepest appreciation for completing this questionnaire with your valuable time and a make a success. Thank you very much.

Syeda Mukta Begum
M.Phil. Researcher
Supervisor: Professor Dr. Md. Shiful Islam
Department of Information Science and Library Management
University of Dhaka, Dhaka-1000, Bangladesh
Email: mukta.begum@isdbd.org
Cell Phone: 01710068606

Appendix B: Letter of Permission

LETTER OF PERMISSION

To

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TO WHOM IT MAY CONCERN

Dear Sir/Madam

Greetings!

This is to certify that Syeda Mukta Begum (Session 2012-2013; Registration no. 268) an M. Phil researcher conducting the survey a research entitled “***The Role of Special Libraries for Building Knowledge-based Economy in Bangladesh***” under the supervision of me in the Department of Information Science and Library Management at the University of Dhaka. To partially fulfill of her research objectives, we select your organization for the survey.

I would like to appreciate if you could kindly permit her to collect the data from your organization through questionnaire. It is noted that your survey responses will be strictly confidential and will not be disclosed or shared with any individual or organization under all circumstances. The data an information provided by you will be exclusively used in academic purpose.

Please feel free to contact me if you have any questions or more information to know on this study.

Thanking you.

With best regards,

Dr. Md. Shiful Islam
Professor
Department of Information Science and Library Management
University of Dhaka
Dhaka-1000
Email: shiful@du.ac.bd
Mobile: 01712754231