Faculty of Economics and Business

The Impact of Intellectual Capital on Innovation in Pharmaceutical SMEs in Karachi, Pakistan

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Master of Science
2019
The Impact of Intellectual Capital on Innovation in Pharmaceutical SMEs in Karachi, Pakistan

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A thesis submitted
In fulfilment of the requirements for the degree of Master of Science
(Entrepreneurship)

Faculty of Economics and Business
UNIVERSITI MALAYSIA SARAWAK
2019
DECLARATION

I hereby declare that this research is the result of my own investigation, except where otherwise stated. Other sources are acknowledged by giving explicit references are appended. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

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Matric No. 14020087
DEDICATION

This thesis is dedicated to my loving father Furqan Ali Qureshi and mother Waseem Fatima. It was my father’s vision and all-time support, which encouraged me to pursue my higher studies. Additionally, I dedicate this thesis to my wife Kanwal Naz who supported me throughout this journey as their understanding, patience and love made the completion of this work possible.
ACKNOWLEDGEMENT

Bismillah Hir Rahman Nir Raheem

In the name of Allah, the Most Gracious, the Ever Merciful

First of all, I would like to express my deepest gratitude and admiration to my supervisors, Dr. Sharizal Bin Hashim and Dr. Muhammad Khalique who have been very patient and humble in guiding and supporting me from the beginning of my first day in the university and throughout the completion of this thesis. They helped me immensely, in focusing my thinking and ideas towards the right way and gave me valuable ideas and understanding. I truly consider them as my mentors, my guardians, my friends and my brothers far away from my homeland, in Malaysia. I am glad to have them in my M.Sc. journey.

I would like to extend my appreciation and many thanks to the former Dean, Faculty of Economics and Business, Associate Prof. Dr. Rohaya Mohd. Nor who showed great concern whenever I requested him for his kind assistance; thank you very much for your continuous encouragement, support and help during my stay in Universiti Malaysia Sarawak. I would also like to extend my appreciation and many thanks to many others who have always reached out to help me in my quest to learn. They are really special people who, in spite of their precious time constraints and busy schedule were always willing to spare time for me. I like to say my special thanks to the kind, humble but truly professional faculty members of Faculty of Economics and Business, Universiti Malaysia Sarawak. I am also thankful to my colleagues who have never hesitated to share their knowledge with me.

I am also very much thankful to the Dean, Centre for Graduate Studies Professor Dr. Fasihuddin Badruddin Ahmad for taking keen interest in the matters related to the international students. I would also like to express many special thanks to all staff of Centre
for Graduate Studies and the members of academic and non-academic staff of Faculty of Economics and Business at Universiti Malaysia Sarawak for their support and help. Last but not least, to my best friend Muhammad Jamil Khan (the driving force for higher studies), Muhammad Zaheer Khan, my sisters Humera Qureshi and Sadia Qureshi, I thank you so much for continuously giving me the undivided support, strength, eternal prayers and love. I am also in debt to the sacrifices of my wife Kanwal Naz, both financially and emotionally during my stay in Malaysia.

I am thankful to my parents’ morale and financial support throughout education journey. They have raised me well and always wishing me success all the time. I know that how hard my father has worked to support me. My father was supposed to retire several years ago but he has sacrificed to work very hard to support me and gave me full freedom to complete my higher education without getting any stress of finance to support my studies. I also know that my mother has been praying a lot for me. She was the source of positive attitude to move forward whenever I encountered hindrances and problem with my M.Sc. work. Hopefully, my achievement will give them a blissful pleasure and I sincerely hope that I have met their expectations. I wish I can repay them for my forever appreciation somewhere, someday. I realized that I have rarely expressed my emotions to my father and my mother throughout my life. My father and my mother are true blessings in this world.
ABSTRACT

The competitive forces for pharmaceutical SMEs have changed where most of the strategies focus more on innovation and intellectual capital in order to accomplish the objective of creating competitive value. However, there were limited studies focused on intellectual capital and innovation in the context of Pakistan’s pharmaceutical SMEs. Therefore, this study focusing on investigating the intellectual capital role towards Pakistan’s pharmaceutical SMEs competitive advantage in much deeper way and particularly in the context of innovation. The research model used in this study is based on six independent variables of intellectual capital namely human capital, structural capital, customer capital, social capital, technological capital and spiritual capital that lead to SMEs innovation advantage. There were total 392 questionnaires distributed in pharmaceutical SMEs, out of which 63 percent useable questionnaires were returned. Factor analysis was used to check the reliability and validity of the constructs and multiple regression analysis was used to test the hypothesis. The study found that each of six components of intellectual capital have positive association with the innovation. However, the study also found in overall model of intellectual capital, technological capital is statistically insignificant to innovation in pharmaceutical SMEs. The results showed that the pharmaceutical SMEs in Karachi, Pakistan are less adaptive to employ technology elements in creating value that effect their competitive advantage position. Theoretically, this study takes into account the relatedness of resources and the influences of past interaction underpinning an old trajectory in the bridging of technological capital discontinuities. Particularly, this study addressed the relationship between the technological capital and innovation for investments and new capabilities development during competence-destroying change.

Keywords: Pharmaceutical SMEs, intellectual capital, technological capital, innovation
Kesan Modal Intelektual mengenai Inovasi dalam Farmaseutikal PKS di Karachi, Pakistan

ABSTRAK

Daya saing farmaseutikal PKS telah berubah di mana kebanyakan strategi memberi tumpuan kepada inovasi dan modal intelektual untuk mencapai matlamat pewujudan nilai yang kompetitif. Walau bagaimanapun, kajian terhadap hubungan modal intelektual dan inovasi adalah terhad terutamanya di dalam konteks farmaseutikal PKS di Pakistan. Oleh itu, kajian ini memberi tumpuan kepada kajian peranan modal intelek terhadap keunggulan kompetitif farmaseutikal Pakistan dengan lebih mendalam dan khususnya dalam konteks inovasi. Modal penyelidikan yang digunakan dalam kajian ini adalah berdasarkan enam elemen modal intelektual iaitu modal insan, modal struktur, modal pelanggan, modal sosial, modal teknologi dan modal rohani yang mempengaruhi tahap inovasi PKS. Terdapat 392 soal selidik yang diedarkan kepada farmaseutikal PKS di Pakistan, di mana 63 peratus borang soal selidik telah dikembalikan. Analisis faktor digunakan untuk memeriksa kebolehpercayaan dan kesahihan pembinaan dan analisis regresi berganda sebelum digunakan untuk mengui hipotesis. Kajian mendapati bahawa setiap enam komponen modal intelektual mempunyai hubungan yang positif dengan tahap inovasi. Walau bagaimanapun, dari segi modal keseluruhlan modal intelektual, modal teknologi secara statistik tidak signifis dengan tahap inovasi. Keputusan menunjukkan bahawa farmaseutikal PKS di Karachi, Pakistan kurang memberi tumpuan terhadap elemen teknologi di dalam mewujudkan nilai yang memberi kesan kepada kedudukan kelebihan daya saing mereka. Secara teorinya, kajian ini mengambil kira keterkaitan sumber dan pengaruh kajian lalu yang menyokong trajektori lama di dalam memperkukuhkan kelemahan modal intelektual. Terutamanya, kajian ini membincangkan hubungan kait antara modal teknologi dan inovasi sebagai sebuah pelaburan dan pembangunan keupayaan baru untuk membina kelebihan daya saing.
Kata kunci: farmaseutikal PKS, modal intelektual, modal teknologi, inovasi
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LIST OF ABBREVIATIONS

APEC  Asia – Pacific Economic Cooperation

CC    Customer Capital

GDP   Gross Domestic Product

HC    Human Capital

IC    Intellectual Capital

ICM   Intellectual Capital Management

INO   Innovation

K-ECONOMY Knowledge Focused Economy

R&D   Research and Development

SC    Structural Capital

SC    Social Capital

SPC   Spiritual Capital

TC    Technological Capital

IPS   Innovation in Pharmaceutical SMEs

IMS   Intercontinental Marketing Services
CHAPTER 1
INTRODUCTION

1.1 Introduction

The practice of intellectual capital is very crucial in an organization to see the changing patterns of the economy worldwide i.e. from production-based economy to knowledge-based economy. The knowledge-based economy is focused on knowledge and innovation. To take the benefit of knowledge, the leading challenge for the organizations is to be innovative all the time. To utilize the skills, knowledge, intellectual capacity and information technologies these organizations would be the shining stars and conqueror in future across the globe (Doz et al., 2001; Amiri et al., 2010). Therefore, the most significant action in present business world is to restructure a production-based economy to a knowledge-based economy. In present-day global economy, knowledge is considered as the strength and main origin for organizational counteracting edge (Hitt et al., 1999; Daud and Yusoff, 2010; Shaari et al., 2010).

A considerable number of academicians, researchers and practitioners have recognized that intellectual capital is a prime and essential component in producing “New Knowledge Economy”. Bornemann et al. (1999) determined that in “this new economy intellectual capital has become the one and only counteracting edge of an organization”. Stewart (2002) who is also one of the researchers in the field of intellectual capital conceded that “information and knowledge are like competitive nuclear weapons of our era”. The favourable outcomes will be with those who administer their intellectual capital intelligently. Intellectual Capital is a very influential operator to transform an organization to a knowledge-based economy from a production-based economy. To consider pharmaceutical
SMEs, the intellectual capital has been considered as a significant resource of competitive benefits that impact the degree of innovation and inventiveness (Taliyang et al., 2011). Dost et al., (2016), also studied the relationship between intellectual capital and innovation. They conclude that intellectual capital exerts significantly positive impact on innovation.

The intellectual capital is the core of a knowledge-focused economy and is built on three important piers: first, the knowledge procured with expertise to determine on what to buy, what to sell, and what to do; second, knowledge-focused capitals have become more precious for the organizations and third, in order to able to become more competitive, unique innovative management procedure should be practiced. Therefore, organizations required to administer and to take advantage of their intellectual capital to attain their objectives (Teece, 1998; Bornemann et al., 1999; Mayo, 2000; Amiri et al., 2010; Ding and Li, 2010) and have shifted towards a focus on the role that it can play as a critical antecedent to innovation (Dost et al., 2016).

Furthermore, the implementations of intellectual capital have succeeded considerable magnitude among the researchers, academicians and practitioners. At the start of the twenty first century intellectual capital became visible as a prime origin of competitive edge for organizations. According to Khalique et al. (2011a) intellectual capital is a highly considerable source for the organizations to yield competitive edges in a knowledge-based economy. However, Sharabati et al. (2010) stipulated that despite the prime focus of intellectual capital; most of the organizations don’t know the actual role and implementations of intellectual capital in the organizations. In a knowledge-based economy, organizations are facing fierce globalized competitiveness for their sustainability; and need intellectual capital as critical strength that leads towards economic development (Huang and Liu, 2005). The organizations which have prime focus on intellectual capital and to employ
them successfully and vigorously benefitted more in competitive environs (Zhang and Li, 2007).

Intellectual capital constituted the elusive assets of organization, including knowledge and innovation (Bontis, 1999). The pattern in the business era switched from a capital centric environment to a knowledge-based environment. Therefore, the identification and implication of intellectual capital is essential for the favourable outcomes of the organizations in competitive environment (Khalique, 2011). Knowledge is an important element that alters the competition model of business and it has been acknowledged as one of the success factors in many crucial perspectives, such as innovation and quality (Wang and Chang, 2005; Ooi, 2009; Gholipour et al., 2010). The knowledge-based pharmaceutical SMEs are based on innovation, knowledge and information technology, while their sustainability is based on motivation, skills, information technology, expertise and effective communication (Ismail, 2009; Evangelists and Raffa, 2010) and capabilities and competencies of people which are used to generate value (Halim, 2010).

The Organization of Economic and Development (OEDC, 2001) has agreed that the role of pharmaceutical SMEs is vital towards the development of their national thrift. Sharabati et al. (2010) argued that an enormous quantity of the existing research on intellectual capital has focused on the developed countries. The researchers from the developing countries also have conducting their research to identify the importance and role of intellectual capital; Malaysia (Bontis et al., 2000), Mexico (Trevinyo-Rodriguez and Bontis, 2007), Pakistan (Khalique et al., 2011a; Khalique et al., 2011d) and Iran (Maboudi et al., 2015) in different industries. The contribution of this research identifies the impact of intellectual capital on innovation in pharmaceutical SMEs, particularly in Karachi, Pakistan while results may be varied from other countries of the same industry.
In Pakistan there are few studies on the significance and role of intellectual capital toward the innovation. Khalique (2011) introduce the concept and identify the role of intellectual capital in high tech electrical and electronic SMEs in Pakistan. There are 3.2 million of SME units functioning and providing 80% of employment in non-agricultural sector in Pakistan. The contribution in Gross Domestic Product (GDP) is approximately 40% and sharing a total export value of 30%. The pharmaceutical SMEs are also participating their role in the economy in providing productive output, value addition, increasing employment opportunities and export (Rohra and Panhwar, 2009; Ahmed et al., 2010; SMEDA, 2010). According to Kalim and Lodhi (2002), the Government of Pakistan requires concentrating more on fortifying the knowledge-based economy to counter the new upcoming global challenges. Rahman (2007) argued that innovation, knowledge, research, entrepreneurship and technology are the prime operators for the process of socio-economic development. The understanding and acceptance of the importance of knowledge-focused economy and diverse strategies to advocate and reinforce the idea, the Government of Pakistan has taken several steps to advocate the knowledge-based economy in Pakistan. The Education Affairs and Services have been given with Rs. 64,014 million in the budget estimates 2014-15 as compared with Rs. 59,277 million in budget estimates 2013-14. The bulk of expenditure at Rs. 47,693 million has been assigned for Tertiary Education Affairs and Services in budget 2014-15, which is 74.5% of the total distribution under this lead. In fiscal budget 2014-2015, started from the first July the Government of Pakistan has assigned an amount of Rs. 64,014 million for public sector and the government guaranteed to take place significant course of actions to set up a knowledge-based economy to elevate the socio-economic evolution in the country (Ministry of Finance: www.finance.gov.pk).