

OBSTACLES TO TECHNOLOGICAL INNOVATION IN THE SERVICE SECTOR: THE CASE OF MENA COUNTRIES FIRMS BASED IN CHINA

Othman Abada 

School of Management, Shanghai University, Shanghai, China

Othman.abada@gmail.com

Zaur Hasanov

School of Management, Shanghai University, Shanghai, China

Zaur_hasanov@hotmail.com

Asma Benzazoua Bouazza

School of Management, Shanghai University, Shanghai, China

benasma13@hotmail.com

Abstract

Technological innovation plays an important role in economic growth, nations strive to stimulate and attract more research and development that leads to innovation, nowadays firms are paying more and more attention to technological innovation, as they realize the importance of affective service through advanced innovative technology, this help firms to satisfy their clients' needs, remain competitive in the market and consequently sustain its growth and development. But unfortunately their efforts to accomplish these goals and to capture a share of the income are hampered by many obstacles. So far and beside firm size and age there are other obstacles can be financial, knowledge related and organizational, its also important to mention that a very limited number of researches have had highlighted these obstacles, consequently this study comes as an investigation to these obstacles.

Keywords: *Technological innovation, obstacles, firm, china*

INTRODUCTION

With globalization and the development in technology the world has become more interconnected than ever before. In recent years, there has been a growing interest in technological innovation, in order for firms to survive they need to innovate, it's a key factor of competitiveness. Technological innovation has attracted more and more interest of practitioners, however firms still face some challenges when implementing their technological innovation strategies, those challenges can be summarized as; Excessive and high economic risk; Lack of appropriate sources of finance; holding to the change within the firm; lack of skilled personnel; lack of information on technologies and market; fulfilling regulations, legislations; lack of customer responsiveness to new products; easiness of copying or imitating innovation can become an innovation barriers to the enterprises .A deeper understanding of these obstacles, along with an active approach of defining those barriers ,planning strategies to avoid them, , can help to implement successful innovation strategies and ensure its full value is realized.

Research Objective

The objective of this research is to examine the barriers that affect the implementation of innovation by MENA countries service firms based in china.

When firms learn about the factors leading innovation plans to fail, it will help them overcome this barriers, which increase the firms productivity, deliver a good service with minimal cost, maintain a sustainable growth and create competitive advantages, this research will also help future firms learn from previous experiences.

RESEARCH METHOD

This study was carried out using a research survey design. A research survey design is a method of collecting information by administering questionnaires to a sample of individuals, The research was performed through a survey using a mixture of semi-structured questionnaires. The population of the study is MENA countries service firms based in china. The method of selection of sample is random sampling to find 200 firms. But we managed to have 103 questionnaires successfully fulfilled Efforts were also made to select a range of firms with different characteristics such as markets, sizes a history and duration of their operation, so the sample has a mix of homogenous and heterogeneous characteristics. Within the selected sample the interviewees were CEOs, business owners, entrepreneurs who can give value-added information about their experience with innovation.

Sampling Design

Purposive sampling can be very useful for situations where we need to reach a targeted sample quickly and where sampling for proportionality is not the main concern.

In this study the target population include CEOs of firms, and business owners .We have narrowed the sample to one industry, our target population was only MENA countries service firms based in china that has been at least operating in china between the years 2012 and 2014.from the total of 200 firms that were purposively selected only 103 did meet our research characteristics.

Data Collection

The data of this study were collected using questionnaires. In order to achieve the aims of the research, the design of the questionnaires needed to be suitable for dealing with diversity among respondents. The participants are CEOs of MENA countries service firms based in china, with different educational backgrounds, and based in different locations in china.

These interviews were conducted on both formal and informal base with a structured and an unstructured set of questions. It was conducted in Arabic, English, French and Arabic based dialects, depending on what is deemed to be appropriate to the participant's ease of expression. This method provides a broad spectrum of viewpoints about the operation as it has the goal of achieving an unbiased contribution from all parties. All interviews were consequently be transcribed and translated into English.

In order to make sure that I will obtain a speedy and efficient response to the surveys we intended to visit these firms personally.

ANALYSIS & FINDINGS

Each samples are obtained by mentioned above in excessive economic risk (investigate); The innovation cost is too high (HTC); The lack of appropriate source of finance (LSF); holding to the change within the firm's rigid organization (FO); Lack of skilled personnel (LSP) .five factors on the score function and technology innovation ability, we calculate the technology innovation of each sample points (I). According to the growth evaluation method we can calculate the growth points of each sample (G), the specific calculation process slightly. Growth (G) as the ordinate score, the abscissa denotes the technical innovation points (I) can draw a scatter diagram as shown in figure 1.the scatter diagram presents technology innovation and growth (G) (I) the two variables in the curve of the relationship, therefore we need to build several curve models and analyze the results.

Figure 1: Scatter diagram of Scores of technological innovation and scores of growth

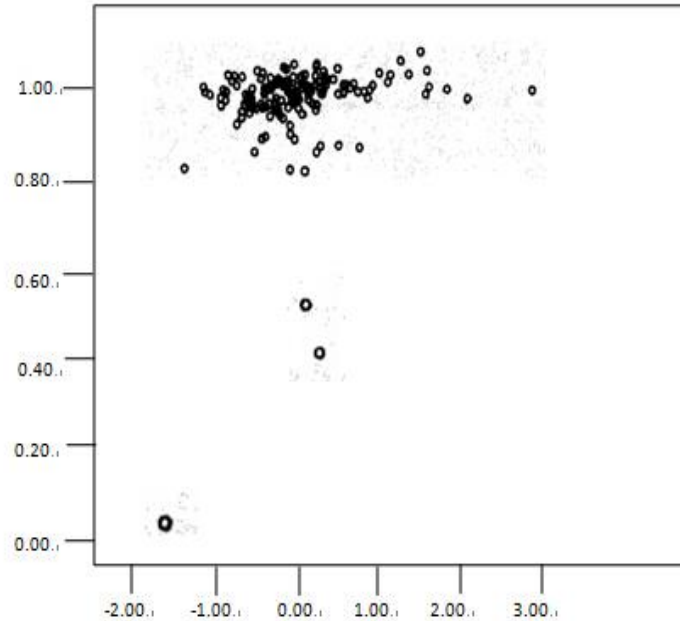


Table 1: Curve fitting results

Equation	Model test					Parameter estimation			
	R ²	F	df1	df2	Sig	Constant	Coefficient1	Coefficient2	Coefficient3
1'curve	0.067	10.921	1	91	0.001	0.870	0.043*** (0.013)		
2'curve	0.121	10.337	2	90	0.000	0.883	0.067*** (0.015)	-0.034*** (0.011)	
3'curve	0.173	10.413	3	89	0.000	0.891	0.037*** (0.018)	-0.076*** (0.017)	0.028*** (0.009)

The extraction method for regression analysis, sample:103, *:p<0.1, **:p<0.05, ***:p<0.01

From the point of the curve model test results, we can see that the enterprise's technology innovation plays a significant role in growth (Beta =0.043, $p<0.011$), which indicates that technological innovation has a significant role in promoting the enterprise growth. From the point of quadratic curve model test results, enterprise's technological innovation and growth in first inverted u-shaped relationship, lowered after the Beta value coefficients were 0.067, 0.034, $p<1.00$ are From the point of cubic curve model test results, also inverted u-shaped relation with the approximation, the Beta value coefficients were 0.037, 0.076, 0.028, both $p < 0.01$.

In the empirical hypothesis 5, therefore, only in a certain range, the small and medium-sized enterprise growth and inverted u-shaped relationship to the degree of technological innovation. Growth and the degree of the technological innovation of small and medium-sized

enterprises have been lowered after the inverted u-shaped relationship, it is visible that technological innovation of small and medium-sized listed companies growth range effects significantly, consequently the degree of technological innovation of small enterprises is lower, its impact on corporate growth is positive.

After a large increase at the enterprise growth, the technological innovation decreased instead. The figure above shows that the degree of technological innovation did not invert a u-shaped vertex, enterprises should strengthen technological innovation.

When the degree of technological innovation reaches a certain degree, the growth of small and medium-sized enterprises with the increase of technology innovation level declines, which contradict our hypothesis 5, but it is consistent with the limitations of small and medium-sized listed companies. small and medium-sized enterprise invest less on research and development unlike large companies with abundant capital ,they are more into scientific research and technology development, as a result technological innovation is a risky activity, small and medium-sized enterprises are more often paralyzed by the limitations of their modest conditions compared to big enterprises that are capable of undertaking the risk.

CONCLUSION

Through the empirical analysis of various factors that hampers technological innovation, financial sources are crucial to the success of innovation, the expenditure of different enterprises on innovation and human resources shows how firms are willing to stay competitive in the market. Professional technical background of top managers is another ingredient for the success of innovation projects, enterprise decision makers tend to rely on their own strategic management with professional and technical background.

This study shows that the degree of enterprise technological innovation had inverted u-shaped relationship with growth. The early the growth of small and medium-sized enterprises is, the increased involvement in the technological innovation takes place.

The uncertainty of the external environment, complexity of the technological innovation project itself, the limitation of innovators in their own ability and strength, all these factors may also disable innovative projects. Therefore enterprises in the process of technological innovation need to adopt wise strategies that balance technological innovation and growth, enterprises should invest moderately in the technological innovation, in a way that present no risk to the economic stability of the enterprise.

Further researches are needed to highlight more barriers that heavily hamper technological innovation within MENA countries service firms based in china.

REFERENCES

- Anna Bergek, Staffan Jacobsson, Bo Carlsson, Sven Lindmark, Annika Rickne., Analyzing the functional dynamics of technological innovation systems: A scheme of analysis Original Research Article Research Policy, Volume 37, Issue 3, April 2008, Pages 407-429
- Anttonen, M., et al., The other side of sustainable innovation: is there a demand for innovative services?, Journal of Cleaner Production (2012), doi:10.1016/j.jclepro.2011.12.019
- Barlow, J., Bayer, S. & Curry, R. (2006) Implementing complex innovations in fluid multi-stakeholder environments: Experiences of 'telecare' Technovation 26 (2006) 396–406
- Beaussart, M. L., Andrews, C. J., & Kaufman, J. C., Creative Liars: The Relationship Between Creativity and Integrity, *Thinking Skills and Creativity* (2010), doi:10.1016/j.tsc.2012.10.003
- Berchicci, L. Towards an open R&D system: Internal R&D investment, external knowledge acquisition and innovative performance Research Policy 42 (2013) 117– 127
- Breinlich, H. & Criscuolo, C. (2011) International trade in services: A portrait of importers and exporters Journal of International Economics 84 (2011) 188–206
- Chang, Y.C., Chang, H.T., Chi, H.R., Chen, M.H. & Deng, L.L. (2012) How do established firms improve radical innovation performance? The organizational capabilities view Technovation 32 (2012) 441–451
- Chung, H.C.L. & Tung, R.L., (2012) Immigrant social networks and foreign entry: Australia and New Zealand firms in the European Union and Greater China International Business Review 22 (2013) 18–31
- D'Este, P., Iammarino, C.S., Savonac, M. & Tunzelmann, N.V. (2011) What hampers innovation? Revealed barriers versus deterring barriers Research Policy 41 (2012) 482– 488
- Dobson, W., & A.E. Safarian (2008) The transition from imitation to innovation: An enquiry into China's evolving institutions and firm capabilities Journal of Asian Economics 19 (2008) 301–311
- Elmawazini, K. (2012) Foreign affiliates, export success of local firms and host country innovation capability Journal of High Technology Management Research 23 (2012) 103–111
- Fareh, S., (2010) Challenges of teaching English in the Arab world: Why can't EFL programs deliver as expected? Procedia Earth and Planetary Science 2 (2011) 327 – 333 1878–5220 © 2011 Published by Elsevier Ltd.
- Galia, F. & Legros, D., (2002) Complementarities between obstacles to innovation: evidence from France www.sciencedirect.com
- Gebauer, H. (2011) Exploring the contribution of management innovation to the evolution of dynamic capabilities Industrial Marketing Management 40 (2011) 1238–1250
- Giorgio Sirilli, Rinaldo Evangelista Technological innovation in services and manufacturing: results from Italian surveys Research Policy 27 (1998) 881–899
- Hipp, C. & Grupp, H., (2005) Innovation in the service sector: The demand for service-specific innovation measurement concepts and typologies Research Policy 34 (2005) 517–535
- Hong, J. (2006) Transport and the location of foreign logistics firms: The Chinese experience Transportation Research Part A 41 (2007) 597–609
- Hsieh, M.H., & Tsai, K.H. (2007) Technological capability, social capital and the launch strategy for innovative products Industrial Marketing Management 36 (2007) 493–502
- Kamalian, A., Rashki, M. & Arbabi, M.L. (2011) Barriers to Innovation among Iranian SMEs Asian Journal of Business Management 3(2):79-90, 2011
- Kim, D.Y., Kumar, V. & Kumar, U. (2012) Relationship between quality management practices and innovation, Journal of Operations Management 30 (2012) 295–315
- Kindström, D., et al., Enabling service innovation: A dynamic capabilities approach, Journal of Business Research (2012), doi:10.1016/j.jbusres.2012.03.003

- Lance A. Bettencourt, Stephen W. Brown, Nancy J. Sirianni 2012 The secret to true service innovation
- Lee, C. (2011) Trade, productivity, and innovation: Firm-level evidence from Malaysian manufacturing Journal of Asian Economics 22 (2011) 284–294
- Martínez-Roma, J.A., Gamero, J. & Tamayo, J.A. (2011) Analysis of innovation in SMEs using an innovative capability-based non-linear model: A study in the province of Seville (Spain) Technovation 31 (2011) 459–475
- O'Regan, N., Ghobadian, A. & Sims, M. (2006) Fast tracking innovation in manufacturing SMEs Technovation 26 (2006) 251–261
- P. Healey, J. Samanta (2008) When Does the 'Learning Curve' of Innovative Interventions Become Questionable Practice? Eur J Vasc Endovasc Surg (2008) 36, 253e257
- Paton, R.A. & McLaughlin, S. (2008) Services innovation: Knowledge transfer and the supply chain European Management Journal (2008) 26, 77– 83
- Peretz, H.V., Binyamin, G. & Carmeli, A. (2010) Subjective relational experiences and employee innovative behaviors in the workplace Journal of Vocational Behavior 78 (2011) 290–304
- Puga, D. & Trefler, D. (2010) Wake up and smell the ginseng: International trade and the rise of incremental innovation in low-wage countries Journal of Development Economics 91 (2010) 64–76
- Qinlan, Q. & Yingbiao, C. (2011) SME, Technological Innovation and Regional Environment: The Case of Guangdong, China Procedia Earth and Planetary Science 2 (2011) 327 – 333
- Salunke, S., Weerawardena, J. & McColl-Kennedy, J.R., (2012) Competing through service innovation: The role of bricolage and entrepreneurship in project-oriented firms
- Salunke, S., Weerawardena, J. & McColl-Kennedy, J.R. (2011) Towards a model of dynamic capabilities in innovation-based competitive strategy: Insights from project-oriented service firms Industrial Marketing Management 40 (2011) 1251–1263
- Sanyal, R.N. & Guvenli, T. (2000) Relations between multinational firms and host governments: the experience of American owned firms in China, International Business Review 9 (2000) 119–134
- Srinivas, S. & Sutz, J., (2008) Developing countries and innovation: Searching for a new analytical approach Technology in Society 30 (2008) 129–140
- Sua, C.T., Chen, Y.H. & D.Y. Sha (2006) Linking innovative product development with customer knowledge Technovation 26 (2006) 784–795
- Tamayo-Torres, I., Ruiz-Moreno, A. & Verdú, A.J (2009) The moderating effect of innovative capacity on the relationship between real options and strategic flexibility Industrial Marketing Management 39 (2010) 1120–1127
- Tether, B.S., (2001) Who co-operates for innovation, and why An empirical analysis Research Policy 31 (2002) 947–967