A COMPARATIVE STUDY OF SUCCESS FACTORS IN TECHNOLOGY-BASED ENTREPRENEURSHIP IN IRAN AND INDIA

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DEDICATION

This piece of research is a heartfelt and loyal endowment to the presence

of the promised savior of human beings,

"IMAM MAHDI (pbuh)"

whose appearance is

acme of knowledge, evolution of mankind and bliss of humanity.

I dedicate this entire effort and my life to his Holiness.

I wish I'll be counted among his companions.

CERTIFICATE

This is to certify that the thesis entitled **"A Comparative Study of Success Factors in Technology-Based Entrepreneurship in Iran and India"** being submitted by Mr. **Seyed Ali Omrani** to the Indian Institute of Technology, Delhi for the award of the degree of Doctor of Philosophy is a bonafide record of the research work carried out by him under our supervision and guidance. The thesis work, in our opinion, has reached the requisite standard, fulfilling the requirements of the said degree. The results contained in the thesis have not been submitted, in part or full, to any other University or Institute for the award of any degree or diploma.

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In the name of God, the Beneficent, the Merciful.

Praise be to God, Lord of the Worlds.

How poor is a man when he finds himself incapable of a worthy appreciation to Almighty GOD. How beautiful the great poet of Persia, Saadi Shirazi, describe it; "Laudation to the GOD of majesty and glory obedience to him is cause of approach and gratitude in increase of benefits. Every inhalation of the breath prolongs life and expiration of it, gladdens our nature. Wherefore every breath confers two benefits and for every benefit gratitude is due. Whose hand and tongue is capable to fulfill the obligation of thanks to him?"

I kneel before almighty God to pray on my great achievement of acquiring the knowledge. This is a great bliss to follow the holy prophet of Islam (peace be upon him) in order to acquire the knowledge even if the home is left behind.

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ABSTRACT

Drucker considers innovation as being the specific instrument of entrepreneurship: “the act that endows resources with a new capacity to create wealth” (Drucker, 1999). Schumpeter develops important ideas with regards to innovation as a source of economic change (Schumpeter, 1928; Sehumpeter, 1942; Schumpeter, 1947) and technological innovation as a source of business cycle (Schumpeter, 1934; Schumpeter and Fels, 1939). He also puts entrepreneur (Schumpeter, 1934) and later the larger firm (Sehumpeter, 1942) at the center of the innovation process. Bailetti (2012) defines technology based entrepreneurship as “an investment in a project that assembles and deploys specialized individuals and heterogeneous assets that are intricately related to advances in scientific and technological knowledge for the purpose of creating and capturing value for a firm.” The importance of technology based entrepreneurship is addressed by literature in one way or other. The technology as a tool in entrepreneurs’ hand is a mean to accelerate the growth of innovation system of the country in one hand and enhance the welfare of human being in other hand through economic growth.

The study of the available literature on entrepreneurship suggests a lack of study on technology based entrepreneurship in developing countries. Whilst there is not an agreed and concrete definition for technology entrepreneurship, there is general recognition of the need to look closely at the characteristics and behavior of these enterprises, especially in view of their perceived importance in economic growth and job creation. The research on various aspect of this type of entrepreneurship is necessary especially in developing countries. The researcher for this study is deeply motivated from the importance of the technology based entrepreneurship and their potential for economic growth of the country. The study is done in two countries of Islamic Republic of Iran and Republic of India. The focus of the research is in two regions in both countries where the homogeneity of the environment could assure the reliable finding for the research. The Tehran and Capital region in Iran and Delhi and National Capital Region in India is taken under study. The study focused on entrepreneurs. The sample includes entrepreneurs who run their technology based business as a SMEs form of enterprises. They are mostly CEO, CO of SMEs. The sample size is 120 received complete questionnaires from the personal meeting with

every entrepreneur who run the technology based firm (every country has got sample size of 120 each)

The researcher used mixed methodology including various qualitative and quantitative techniques in order to fulfill the research objectives. The first step was to develop the questionnaire. The exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) are applied to find out the important success factor in technology based entrepreneurship in Iran and India. Interpretive Structural Modeling (ISM) is used to find out the interrelationship between the group factors, technology and performance of the technology based entrepreneurial firms in the research. Structural Equation Modeling (SEM) is further used in order to quantify the model that is developed through ISM methodology. The success factor index (SFI) is developed on the basis of surveyed technology based entrepreneurs through questionnaire methodology. The proper approach to develop the SFI is adopted from a careful literature review on index development. Finally case study approach is adopted to validate the SFI in each country.

There are four objective of the research. The research is started by an extensive review of literature on the identified success factors for entrepreneurship. These factors are confirmed through pilot studies and expert opinion in Iran and India. The first and second objectives are to identify the success factors in technology based entrepreneurship and their relative importance in each country and further to identify the similarities and differences in Iran and India. The first two objectives are mostly looking at macro level and focus at the technology entrepreneurship as a whole. The EFA and CFA are used in order to satisfy the first objective. ISM followed by SEM is used to fulfill the second objective. The result suggest the factors which are having more contribution while others get relatively less contribution towards success of technology entrepreneurship in each country. Further analysis reveals the weakness of some group factors towards the success of technology based entrepreneurship. These results reveal a good insight on what is shortcoming at macro level.

In brief it seems that in entrepreneur's factor, the innovation which has the root in creative imitation is favoring the technology based entrepreneur in both counties. Unfortunately the risk taking propensity is not really favoring Iranian entrepreneurs. The communication of the entrepreneur in India is the least favoring factor. In both countries mostly market oriented strategies are favoring the entrepreneurs and those of

more technology development strategies are having less contribution. Some initiatives from environmental player specially those of government to nurture the entrepreneurship is affecting favorably but still the direct influences of the government and some other polices needs to play more favorable role. The Networks and alliances are not really favoring the entrepreneurs and probably are mostly of luxury bodies in the industry. While Iranian technology entrepreneur seem to enjoy more of the customers and market, Indian Technology entrepreneurs are mostly favored by the competition in the market. Both technology entrepreneur in Iran and India are claim to be favored by their managerial capabilities. Although Iranian entrepreneurs believe the cross functional team of their firms help them to perform better the Indian technology entrepreneurs are not. Entrepreneurs in both countries do not believe that firms' location is really favoring their performance. The most important difference is the contribution of Technology of the firms toward its success.

The technology of the firms does not contribute to success of the technology based entrepreneurship in Iran. The technology of the firms does have a negative contribution (that is unfavorable impact) on success of the technology based entrepreneurship in India. It could be due to long term return on technology investment whereas entrepreneurs are mostly interested in short term return on their investments. Strategy factors do not have a significant contribution in success of entrepreneurs. Organization factor is the only group factor which has a significant contribution with similar range of influence in success of entrepreneurs in Iran and India. There is a real gap between the available resources, energies and potentials in both country to lead the entrepreneurs towards getting success but the only real contributor is organization factor which is having comparably low effect. It indicates that although the fundamental factors in the model are having high efficiency but still lacks effectiveness. It might primary addressed by higher authority of the countries who deals with entrepreneurship growth and promotion.

The other two objectives of the research are to develop a SFI for the entrepreneur in technology based entrepreneurial firms and further to examine the relation between the SFI of the entrepreneur and the performance of the technology based entrepreneurial firm. The last two objectives are mostly micro level in nature. Two separate SFI are developed for technology based entrepreneurship in Iran and India. The output value of

SFI suggest to a specific firm on the strengths, weaknesses, opportunities and threat that she faces. Therefore the entrepreneurs would be able to look at possible solution towards the improvement of the firm's performance. The result of the SFI could suggest a benchmark that compares various firms. The case study approach is used to fulfill the last objective of the research. Ten cases of technology based entrepreneurship in each country are studied. The SWOT analysis based on SFI of each firm is conducted. Finally the results of SFI and performance of the firm is tested using Pearson correlation. The result shows a high correlation between firm's performance and developed SFIs.

Key words:

Technology based entrepreneurship, Success factors, SMEs, Iran, India, Exploratory factor analysis (EFA), Confirmatory factor analysis (CFA), Interpretive structural modeling (ISM), Success index factor (SFI), Case study.

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