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The Model of the Impact of Returning Iranian Experts on the Performance of Knowledge-Based Companies in Iran

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Abstract

After experiencing decades of migration after the world wars, the modern world is witnessing the return of expert immigrants to their countries. Iran also participates in this process by adopting policies to attract elites to the country. Studies have shown that returning experts, having strengths, capabilities, and characteristics that result from their education, work, and experience abroad, as well as weaknesses resulting from being far from the country's business environment, affect the performance of companies through specific mechanisms. The purpose of this study is to analyze the impact of graduates or immigrant experts on the performance of knowledge-based companies in Iran. In the first step, the characteristics that affect the performance of knowledge-based companies were identified. These characteristics included "personality characteristics", "social network characteristics" and "specialized characteristics" which affected the model under study as independent variables. Then, the mechanism of this effect was studied by examining the mediating variables "technology capability development" and "financial resources attraction". In this way, the model of the effect of returning specialists on the performance of knowledge-based companies was designed. In this thesis, the sequential data-based research method was used and qualitative research was conducted first and then quantitative research was conducted. In the qualitative study section, interviews with experts and content analysis were used. Using the results of content analysis of the interviews and related literature, a questionnaire was designed for the quantitative part of the study. In the quantitative study section, the final model was designed using the aforementioned questionnaire and then analyzing their outputs through partial least squares structural equation modeling. The resulting model suggests that "personality trait" directly affects company performance. "Social network trait" affects performance through the mediation of resource attraction. "Specialty trait" affects performance through the mediation of "technology capability development". This study also examined the effects of the control variables "company size", "company life stage" and "company field of activity" and it was observed that these variables do not have a significant effect on company performance. The findings of this study provide great assistance in policy-making for cooperation with returning specialists, including residents and non-residents.

Keywords: Returning specialists, brain drain, migration, performance, knowledge-based company, elite abduction, elite development, elite rotation

.1INTRODUCTION

The migration of graduates and specialists abroad is a problem that many countries, including developing countries, have faced after World War II. There is much serious debate about the phenomenon of graduate migration, emphasizing that it puts pressure on the income of developing countries in the long run (Adams, Jr, & Page, 2003). Development economists are more lenient with graduate migration, but they still believe that the funds that migrants send to the country or the taxes they pay do not have much effect on creating welfare for the country, because it is very difficult to reproduce skilled human resources, and this migration causes a sharp decrease in technological capacity and limits the potential for technological upgrading and the entry of superior technologies.

In recent years, the flow of professional migration has shifted towards an increasing number of professional migrants returning to their home countries and establishing businesses in their

home countries (Lin, Lu, Liu, & Choi, 2014; Pruthi, 2014; Kapur D. , 2001; Wright, Liu, & Filatochev, 2008), and many scholars have assessed this phenomenon as significant.

People who migrate to developed countries return to their home countries after a period of migration, bringing with them their expertise, skills, and work experience. These migrants, known as "returnees," have become a subject of interest and study by many researchers as a new channel for transferring knowledge and technology to the countries of origin of migration. Researchers have provided more or less different definitions of these "returnees." Dai and Liu define returnees as: "Returnees are scientists, engineers, or students who have studied, worked, or completed internships in OECD countries and then returned to their home countries" (Dai & Liu, 2009). Martin Kenny et al. (2013) define returnees as individuals who have completed their academic studies abroad, worked in an ICT firm, and then returned to their home country to run their own firm or start a company independently (Kenney, Breznitzc, & Murphree, 2013).

In recent years, with the implementation of the policies of the Islamic Republic of Iran in attracting elites from abroad and also the change in the country's macroeconomic policies from an oil economy to a knowledge-based economy, many of these Iranian specialists have returned to the country temporarily or permanently and started their own businesses. This thesis aims to address the pattern of influence of these individuals in knowledge-based companies.

.2RESEARCH QUESTIONS

Main Question:

•What is the pattern of influence of returned Iranian specialists on the performance of knowledge-based companies?

Sub-Question:

•What are the key capacities and capabilities of returned Iranian specialists that improve the performance of knowledge-based companies?

•In which of the stages of the company's life cycle do these capacities have the greatest impact?

•What is the mechanism of influence of these capacities and capabilities on the performance of knowledge-based companies?

.3RESEARCH OBJECTIVES

The studies conducted show that returnees, having strengths, capabilities, and characteristics acquired from education, work, and experience abroad, as well as weaknesses resulting from being far from the country's business environment, affect the performance of companies through specific mechanisms. The purpose of this study is to analyze the impact of returnees on the performance of knowledge-based companies in order to provide suggestions for attracting and utilizing the capabilities of resident and non-resident Iranian returnee elites. Therefore, the objectives of this research are as follows:

(1Improving the effectiveness of activities related to the return of experts abroad and their activities in knowledge-based companies

(2Improving the performance of knowledge-based companies through the use of returned experts

(3Developing efficient policies to maximize the potential of returned experts in knowledge-based companies

.4THEORETICAL FOUNDATIONS

Elite kidnapping:

According to the prevailing definition of elite kidnapping (the widely used term for elite flight), it is a sharp decrease in educated people and experts due to the movement of skilled people from a less developed region to a more developed region. Thus, elite kidnapping is a process in which a country or region loses its most talented and educated human resources through their migration to other countries or regions.

Elite development:

Elite development refers to the return of elites to their country of origin. Elite migrants from developed countries have acquired knowledge and experiences in developed countries that they use when they return to their country in their new business or in teaching at universities or working in multinational companies (Cyranoski, 2009).

Elite rotation:

Elite rotation is the circular movement of elites between the home country and the countries of immigration destination. Globalization has led the phenomenon of elite migration to the point where the world benefits from the capabilities of elites. In this model, elites travel between the home country and other countries and humanity benefits from their elitism.

Returnees:

Educated or specialized migrants who, after completing their education, acquiring skills or work experience in fields requiring technology, return to Iran temporarily or permanently and participate in entrepreneurial or economic activities.

Knowledge-based company:

The Law on the Support of Knowledge-based Companies approved in 2010 defines knowledge-based companies as follows:

Knowledge-based companies and institutions are private or cooperative companies or institutions that are formed to synergize science and wealth, develop a knowledge-based economy, achieve scientific and economic goals (including the development and application of inventions and innovations), and commercialize research and development results (including the design and production of goods and services) in the field of superior technologies with high added value, especially in the production of related software.

.5RESEARCH BACKGROUND

Neda Gershasbi and colleagues considered inventors as innovation pioneers representing the elite and showed that the percentage of elite turnover for the period (2006-2010) was 85.9 for North America, 42.8 for Europe, and 15.2 for Asia. They concluded that, given that the

percentage of inventor turnover equal to 50 indicates a perfect balance between the migration of inventors abroad and the migration of inventors into a country, and the value of 100 indicates the best performance of the country in attracting inventors, Asia has the weakest performance in elite turnover after Africa. The performance of North America in elite turnover is far ahead of others. This initial study indicates the existence of a significant imbalance in the migration of inventors in Asia. By studying the migration statistics of inventors in different countries, they showed that the United States is the most important destination country by attracting a large percentage of all immigrant inventors, and has an elite turnover rate of 94%, while this rate in Iran is close to zero (Neda Gershasbinia, 2010).

Bai (2019) found that there are contextual constraints to entrepreneurial return investment, including regulatory regime and normative challenges. He found that by studying successful returnees in China, the returnee firm can overcome its environmental research conditions by developing international network connections with researchers in international academic centers. However, the firm may not be able to properly respond to the constraints of the regulatory regime without a good understanding of its home country and therefore needs to re-adjust accordingly (Bai, 2019).

Another study points out the weaknesses of returnee entrepreneurs in market entry and studies how the cooperation between investment resources and the founder's experience abroad facilitates and speeds up investment creation, and seeks to answer the question of how returnee entrepreneurs affect the relationship between investment resources and the speed of entrepreneurial entry. Using a new sample of 388 new ventures covering a wide range of technologies in China, it is concluded that overseas returnees are slower to grow new ventures than domestically grown entrepreneurs. On the other hand, foreign-invested new firms with innovative technology are slower to enter the market due to higher levels of external commitments and nascent nature. However, if these firms have a returning founder with business experience, foreign market presence, and technological knowledge, the negative effects on entry speed are significantly reduced (Fei Qin, November 2017).

Using social capital theory and a performance-based capacity approach, Bai et al. (2018) examined the extent to which returnee entrepreneurial firms gained international performance advantages through their entrepreneurial experience with international networks. Using 200 returnee entrepreneurial firms, the paper proposed and tested a structural model focusing on the relationship between entrepreneurial characteristics and firm capacity development. The results showed that having an international network of returnee entrepreneurial firms is important for the development of the firm's international network. This capacity, in turn, affects the opportunity finding and international performance of the returnee entrepreneurial firm. The findings indicate the impact of entrepreneurial performance and organizational learning on internationalization and the specific role of returnees in the international performance of these firms.

)Bai, Wensong; Holmström-Lindb, Christine; Johanson, 2018.(

.6RESEARCH METHOD

The approach of this thesis to the research topic is qualitative and quantitative and it pays attention to different approaches in data collection and analysis, therefore the worldview of the thesis is pragmatic. In this research, a combined qualitative and quantitative approach

(exploratory research design) is used to answer the research questions. The present thesis design has a short history and since 1990, the new theory of the benefits of elite migration for countries of origin began. In addition, the main phenomenon under study, namely graduate migration, does not have a very long history. On the other hand, the subject of the design in our country has a much weaker history and most studies are based on the traditional theory of loss of human capital due to migration and have been the field of economic and sometimes sociological studies. Now, faced with the phenomenon of experts returning to the country, it is necessary to investigate and study the phenomenon exploratoryly, and it is necessary to examine the geography and existing relationships regarding the return of immigrants, the networks they create, and the performance of the companies in which these people work. The following and in Figure 1. The position of using interviews with experts in the present study is shown. The result of the present study is in the category of applied research and the results of this study will help policymakers in formulating policies for attracting Iranian immigrant experts. The research method will be qualitative and quantitative. Part of the data will be obtained through reports, documents, as well as interviews and questionnaires, and part of the data will be obtained from the data available in national or global databases (World Bank, WIPO, Organization for Economic Cooperation and Development, International Organization for Migration, etc.).

First, to discover the model of the impact of the characteristics of returns on the performance of knowledge-based companies, a qualitative study was conducted, and then a quantitative study was conducted to strengthen the qualitative data. Thus, a sequential exploratory approach was used in this thesis.

.7RESEARCH FINDINGS

In order to examine the effect of the company's life stage, company type, company's field of activity, and company size on performance, we used the one-way analysis of variance (ANOVA) test as follows:

The source of changes (variances) in the analysis of variance test is divided into two categories: "between groups" and "within groups". The difference between communities with the researcher's grouping is responsible for part of the variances (between group variance), but part of the variances are due to other factors (error) (within groups). In this test, when the significance level (sig) is less than 0.05, there is a significant difference between the means of the communities, and if the value is less than 0.05, there is no significant difference between the means of the communities. Post Hoc Tests are used to determine which means are different (if the significance level is greater than 0.05, Post Hoc tests are not needed).

Table (1) shows that the field of activity of the company does not have a significant effect on performance.

Table 1. ANOVA test of the field of activity of the company

sig	f	Mean squares	Degree of freedom	Sum of squares	Source of change	Company's field of activity
0.362	1.116	0.712	4	2.848	Intergroup	

		0.638	43	27.451	Intragroup	
			47	30.299	Total	

Table 2. ANOVA test of company life stage

sig	f	Mean squares	Degree of freedom	Sum of squares	Source of change	
0.247	1.444	0.914	2	1.827	Intergroup	Company life stage
		0.633	45	28.472	Intragroup	
			47	30.299	Total	

Table 3. ANOVA test of company type

sig	f	Mean squares	Degree of freedom	Sum of squares	Source of change	
0.214	1.595	1.003	2	2.005	Intergroup	Company type
		0.629	45	28.294	Intragroup	
			47	30.299	Total	

Table 4. ANOVA test of company size

sig	f	Mean squares	Degree of freedom	Sum of squares	Source of change	
0.426	0.869	0.563	2	1.127	Intergroup	Company size
		0.648	45	29.172	Intragroup	
			47	30.299	Total	

Table 5. ANOVA test of regression type

sig	f	Mean squares	Degree of freedom	Sum of squares	Source of change	
0.273	1.338	0.851	2	1.701	Intergroup	Return type
		0.636	45	28.598	Intragroup	
			47	30.299	Total	

Table 6. ANOVA test of return years

sig	f	Mean squares	Degree of freedom	Sum of squares	Source of change	
0.475	0.848	0.552	3	1.655	Intergroup	Years of return
		0.651	44	28.644	Intragroup	
			47	30.299	Total	

 Final model

The obtained model answers the characteristics of Iranian returnees in response to the first sub-question of determining the key capacities and capabilities of Iranian returnees that are effective in improving the performance of knowledge-based companies. In this model, by determining the factor loading of the items of the variables of personality, social and professional characteristics, the characteristics of these individuals were well determined, and then the relationship between these variables and the performance of knowledge-based companies related to returnees was examined.

In response to the third sub-question of determining the mechanism of influence of these capacities and capabilities on the performance of knowledge-based companies related to returnees, the mediating variables, technological capability development and resource absorption, were defined with appropriate items, statistically examined and the effect of these variables as mediating variables was examined and applied in the presented model.

The second sub-question is related to the effect of the life cycle stage on the performance of knowledge-based companies. Based on the data of the present study, the age stage as a control variable does not have a significant effect on the impact of returnees on the performance of knowledge-based companies. Based on the existing literature, the researcher does not have sufficient confidence in this result. And the reason for this inconsistency between the literature and statistical conclusions is the limited sample and the small number of knowledge-based companies in the growth and maturity stages. Therefore, as more knowledge-based companies reach the growth and maturity stages, there will be a need for more comprehensive research on the impact of the age stage of these companies on their performance.

8. DISCUSSION AND CONCLUSION

The return of elites, the phenomenon of elite turnover, and the employment of these individuals in knowledge-based companies are the main areas of the present study. The phenomenon of elite migration is a global phenomenon that is gaining momentum due to the growth of science and technology in the world. Elites migrate to more prosperous countries due to their elite status in order to find a space for self-expression and the development of their talents. The

growth of communication technology, easy and accessible communication, international scientific and technical cooperation networks, and in the last two years, the global virus factor of Covid-19, has caused the ability to work remotely that technology has brought to be trusted and exploited in practice. Thus, what is happening in the world is no longer related to the issue of manpower reduction, which has traditionally been the biggest blow to elite migration to developing countries. Today, elite migration and elite flight have given way to elite turnover, and the country that wins the competition to benefit from these elites is the one that firstly understands this change well and secondly has the most precise planning in attracting these elites for the development of its country. In this regard, the present study, considering that elites generally work in knowledge-based companies, has investigated the impact of these individuals' characteristics on the performance of Iranian knowledge-based companies. Thus, a small step is taken towards providing the necessary materials for building a building of scientific and technical cooperation with immigrant elites. One of the most important contributions of this research is the opening of a path for studying how to utilize this enormous scientific and technical resource of the country.

9. SUGGESTIONS TO POLICYMAKERS

1- In attracting Iranians residing abroad to the country, focus should be placed on personality traits including entrepreneurial, learning, and adaptable personalities, and this trait should be given sufficient attention when allocating resources. The present study has reported a significant and direct impact of this trait on performance.

2- One of the most important problems of knowledge-based companies is financing and attracting resources. Since the social network trait, including an international approach and effective external and internal relations, has a significant and strong impact on attracting resources and, in turn, on performance, in addition to expert elites, attracting Iranians residing abroad with social network traits is essential even in the absence of specialized academic education. These individuals can be businessmen or business owners who generally have strong networks.

3- Currently, the criteria for attracting Iranians residing abroad are based only on academic education and specific university centers. Based on the results of the present study, the return of a specialized personality is only effective in developing technological capabilities, including knowledge spillover, knowledge transfer, and reducing the time to acquire technology. Therefore, investment in attracting specialists should be made based on the country's technology absorption capacity.

4- Since the effect of social networks on attracting resources is extensive, it is not necessary for economic elites to return to the country. Generally, these networks are damaged when individuals settle in the country, so it may be better not to permanently return to the country as an option for cooperating with these individuals.

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