

The role of intermediaries in developing the technological cooperation between small knowledge-based companies and Industrial and economic firms based on Guaranteed-Buys method

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Abstract

This paper presents the roles of intermediaries for developing the technological cooperation between small knowledge-based companies and Industrial and economic firms based on Guaranteed-Buys method in Iran. The research methodology is Case Study. The interview, literature review and investigation of the statistics and real events created the triangulation in this research. At the first, the challenges in the cooperation between small knowledge-based companies and Industrial and economic firms in Iran were identified and thereafter the suggested framework suggested to solve these challenges by intermediaries and based on the Guaranteed-Buys method.

In the framework the role of intermediaries in the cooperation development between small knowledge-based companies and Industrial and economic firms were investigated deeply in the context of Iran based on the Guaranteed-Buys method. The roles of intermediaries were categorized and analysed in 5 functions: clarifying the needs of industrial and economic firms, making relations, contract management, capability building and technological capability assessment.

Keywords: Intermediary, Technological cooperation, Small knowledge-based companies, Industrial and economic firms

Introduction

Industrial and economic firms can be highly important to stimulating SME growth. SME's can develop their growth strategies with guaranteed revenue streams from larger companies (Jamieson et al., 2012). Smith et al. (1991) believed the inter-firm collaboration can be beneficial to small firms because "it provides the possibility of exploiting new technology; accessing new knowledge, expert users, new markets, and additional funds; and the possibility to improve management skills". The other side, the large firms can be profitable too. Sawers(2008) presented several examples about the benefits of the collaboration for larger companies based on the literature review: "small firms have people with the right combination of specialized skills to develop new products and enable large firms to monitor the development of new technology and equipment. When small firms offer specialist, unique competencies and abilities to large firms, collaborative arrangements are more likely to be equal, and small firms may be able to negotiate advantageous contracts with larger firms. Nevertheless, small firms are confronted by hazards of collaboration" (Sawers et al., 2008).

Based on the literature review, the roles of intermediaries for developing the technological cooperation between small knowledge-based companies and

Industrial and economic firms are critical. Badal(2013) identified four roles for intermediaries: identifying and supporting the talents, financial supports, clarifying the needs of larger companies and facilitating the collaboration process for small firms.

There are different models for improving the collaborations between small knowledge-based companies and Industrial and economic firms. Guaranteed-Buys model is one of the important ones. In the Guaranteed-Buys model, the larger firms which have more financial and market resources, guarantee the revenue stream of small firms by providing their needs with the small firms' products (Jurgensen, 1998; Inoue et al., 2008; Janssens et al., 2014; Sioshansi, 2015).

This paper presents the roles of intermediaries for developing the technological cooperation between small knowledge-based companies and Industrial and economic firms based on Guaranteed-Buys method in Iran. The intermediaries can be from different structures such as private or public sectors with various tasks. In the research, our focus on the role of intermediaries which are from consultant or commercial companies. So we did not investigate the role of intermediaries which are financial supporter or policy maker.

The article is organized as follow. Section 2 gives a brief overview of the existing literature on Guaranteed-Buys model and the roles of intermediaries. The details of the methodology are discussed in section 3. In section 4 we present the result. Conclusions are discussed in section 5.

Literature review

There are 3099 Knowledge-based companies in Iran which have get their certifications from Vice-Presidency for science and technology in Iran (Vice-Presidency for Science and Technology , 2017). More than 70 percent of these companies are start-ups or small companies. The governmental system in Iran in the recent decade, supports the knowledge-based companies more than other companies such as more financial resources or tax motivations. However the main objective of policy makers is changing the economy of Iran from resource-based to knowledge-based economy. So the knowledge based companies should be more powerful and they should penetrate to current industrial firms. The Guaranteed-Buys model is one of the models can help to meet this objective.

The use of Guaranteed-Buys model is two-fold. Jurgensen et al.(1999) pointed out in their research that "To equip its institutions, government needs to purchase units of the product category as such and, to the extent that governmental purchases favour the new product, government purchases help to decrease the firm's unit cost of production. A decreasing unit cost might give the producer an incentive to charge lower consumer prices" (Jurgensen et al., 1999).

An innovation intermediary is defined by Howells (2006) as " [a]n organization or body that acts [as] an agent or broker in any aspect of the innovation process between two or more parties". He identified different types of intermediaries and for example in technology transfer he believed the roles of intermediaries are "identifying partners in the first place; helping package the technology to be transferred between the two firms; selecting suppliers to make components for the

technology; providing support in making the deal between the firms concerned” (Howells, 2006).

Also the intermediaries have the responsibility for facilitating the negotiation between small knowledge-based companies and industrial and economic firms. Also Johnson (2008) and Howard Group (2007) presented similar functions and roles for intermediaries.

Research method

Case study is useful for the situations which are uncontrollable and the researchers can't change and manipulate the behaviours of the players (Yin, 2003). The methodology of the research is Case study. In the research we used the 3 steps methodology for Case study.

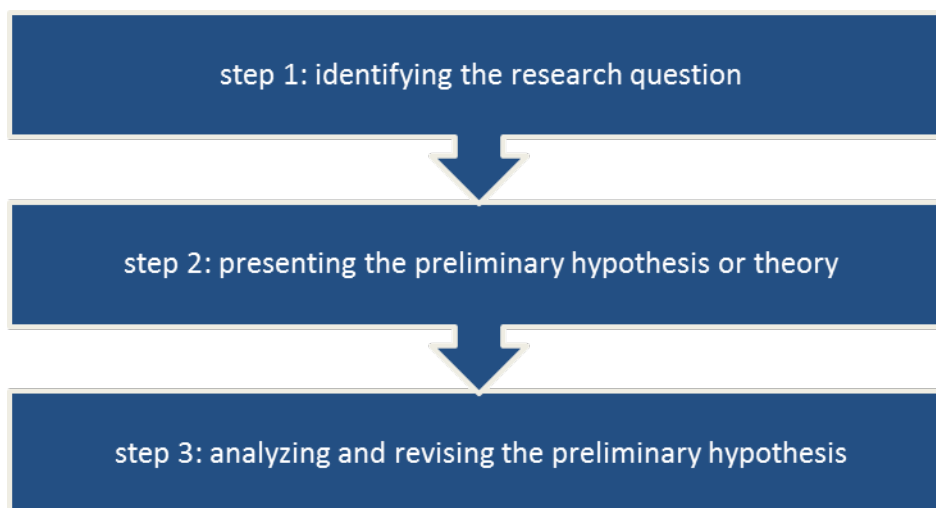


Figure 1: The steps of Case study (Yin, 2003)

The first step in case study is identifying the research question. Thereafter, the preliminary framework of the main roles of intermediaries for developing the technological cooperation between small knowledge-based companies and Industrial and economic firms based on Guaranteed-Buys method was presented for Iran based on the literature review, investigating the events and statistics and beliefs of the several experts.

Then we investigate and analyse deeply the identified roles by interview with 41 experts. The experts are the managers of small knowledge based companies and large firms and policy makers.

Results

At the first, for presenting the preliminary framework, we considered the 9 main challenges for developing the technological cooperation between small knowledge-based companies and Industrial and economic firms in Iran (Naghizadeh, 2017). These challenges are presented in the table 1.

Table 1: the identified main challenges of developing the technological cooperation between small knowledge-based companies and Industrial and economic firms in Iran(Naghizadeh, 2017)

Main challenges
First challenge: the large companies don't know their technological needs.
Second challenge: the technological needs of large companies have not been clarified.
Third challenge: the large companies can't find the capable small knowledge-based firms.
Fourth challenge: the large companies don't accept the risk of financing the product of small knowledge-based firms.
Fifth challenge: the large companies don't accept the risk of extensive buys from small knowledge-based firms.
Sixth challenge: the small knowledge-based firms can't make linkages to collaborate with large companies.
Seventh challenge: the small knowledge-based firms don't know the real technological needs of large companies.
Eighth challenge: the small knowledge-based firms can't provide their financial needs themselves.
Ninth challenge: the small knowledge-based firms have a high risk for selling their products.

After identifying the challenges, based on the literature review, investigating the events and statistics and the beliefs of focus group, we presented the main roles of intermediaries for developing the technological cooperation between small knowledge-based companies and Industrial and economic firms based on Guaranteed-Buys method in Iran.

The main roles which were identified in the second step of Case study were 1: clarifying the needs of industrial and economical firms, 2: facilitating the relations between small knowledge-based companies and Industrial and economic firms, 3: contract management from the start of negotiation to closing the contract.

Then we analysed deeply the roles of intermediaries based on the guarantees buys in Iran. The experts propounded different considerations about the roles of intermediaries which have been summarized in the table 2.

Table 2: the beliefs of the experts about the roles of intermediaries in Iran based on the Guaranteed-Buys model

Roles	The most important beliefs of the experts
Clarifying the needs	The intermediaries should <ul style="list-style-type: none"> • identify the needs of industrial and economical firms. • clarify the needs of industrial and economical firms by providing technological RFP's and SPEC's based on the guaranteed-buys model. • know the characteristics of industrial and economical firms.
Making relations	The intermediaries should

	<ul style="list-style-type: none"> • focus on the tasks as their main activities. • gather the requirements for collaboration. • be economical institutions. • be manage their risks in the first steps by the supports of governmental system. • have different solutions for making collaboration. • have a database from knowledge based companies and industrial and economic firms. • Improve the capabilities of small knowledge-based companies especially in marketing and negotiation management aspects.
Contract management	<p>The intermediaries should</p> <ul style="list-style-type: none"> • know the different aspects of guaranteed-buys contract. • be active on the all steps of collaboration and support all parts of the collaboration process. • be a law consultant for both sides. • have a new role for managing the guarantees for doing the contract. • manage the financial activities related to the contract. In more cases the intermediaries should know the ways to financing the project with lower cost. Especially this role is more important in Iran because the cost of financing from the banks are high. • have new role as institutions which investigate the capabilities of small knowledge-based firms. The intermediaries should decrease the risk of large companies in the partner selections.

Base on the results of case study, the intermediaries in Iran should have 5 roles: 1: clarifying the needs of industrial and economical firms, 2: facilitating the relations between small knowledge-based companies and Industrial and economic firms, 3: contract management from the start of negotiation to closing the contract, 4: technical and business investigation of small knowledge-based companies and 5: capability building especially in the side of small knowledge-based companies. The roles of capability building and capability investigation were added after interview with experts. The map of challenges and the roles of intermediaries showed in the table 3.

Table 3: The map of challenges and the roles of intermediaries

Challenge/role	contract management	clarifying the needs of industrial and economical	facilitating the relations	capability building	technical and business investigation
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		firms			
First challenge		*			
Second challenge		*			
Third challenge		*	*		
Fourth challenge	*				*
Fifth challenge	*				*
Sixth challenge		*	*	*	
Seventh challenge		*	*		
Eighth challenge	*				
Ninth challenge	*	*	*	*	

Conclusion

The roles of the intermediaries in developing the technological cooperation between small knowledge-based companies and Industrial and economic firms were investigated deeply based on the Guaranteed-Buys method in the context of the Iran.

We categorized the role of intermediaries in developing the technological cooperation between small knowledge-based companies and Industrial and economic firms in Iran based on the Guaranteed-Buys model in 5 categories: 1: clarifying the needs of industrial and economical firms, 2: facilitating the relations between small knowledge-based companies and Industrial and economic firms, 3: contract management from the start of negotiation to closing the contract, 4: technical and business investigation of small knowledge-based companies and 5: capability building especially in the side of small knowledge-based companies.

The policy makers and researchers in Iran and other countries especially developing countries can use the findings of the research for their works. Especially the results of the research are useful for policy makers for creating the eco-system for developing the technological cooperation between small knowledge-based companies and Industrial and economic firms based on the Guaranteed-Buys method.

This research focused on the role of intermediaries in developing cooperation between small knowledge-based companies and Industrial and economic firms based on the Guaranteed-Buys method in Iran. The role of intermediaries in other countries can be different based on their contexts. So the investigation of the role of intermediaries in other countries and comparing the differences and similarities can be suggested topics for the next researches.

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