

Triple Helix Revisited: Can the Involvement of Diaspora Enhance Technology Innovation Performance in Emerging African Economies?

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Abstract

An increasing number of research works have investigated the importance and impact of the triple helix, a collaborative system of knowledge generation among University-Industry-Government (UIG) in the development of national innovation competence. However, regardless of the level of effort, triple helix still remains to be an abstract concept in the case of Africa in general and Ethiopian innovation system in particular. On the other hand, studies show that a large number of manpower with better technical and managerial capabilities that can provide supportive knowledge and skills for the technological innovation and transfer efforts of emerging economies is residing in the advanced economies. Thus, the aim of this theoretical framework is to shed light on the importance of harnessing the knowledge and skills of the Diaspora community and integrating it to the current triple helix model. On top of that, the paper identifies the primary problems related to the implementation of the model in the case of Ethiopia.

Keywords: Triple helix; Diaspora; Innovation performance; Emerging economies; Africa

Introduction

Innovation has long been perceived to be the result of a complex system of interaction among different role players [1]. According to Fransen and Kuschminder [2] innovation at both national and firm level are effective if institutional, regulatory and economic efforts are aligned in the direction of the national economic agenda. Consequently, triple helix, the collaborative system of knowledge generation among university, government and industry is becoming a widely used innovation model [3]. Nevertheless, due to some socio-economic and socio-cultural factors, the integration and practice of the model in the case of developing countries such as Ethiopia yet did not bring visible effect on the innovation competence and performance of the manufacturing firms [4].

The main objective of the paper is to identify the problems in the integration and practice of the current triple helix model in the case of Ethiopia. It will also suggest an alternative quadruple that considers the actual conditions of the country and includes the diaspora community. A one day KJ analysis role played by a group of experts from academia, government institutions, and leather and textile product manufacturing firms was used as data source. Based on the analysis, six factors related to collaborative culture, sphere orientations, sphere development, continuity of collaboration, availability of resources, and the level of trust, were identified as primary causes. Moreover, the group of experts believes that the involvement of the Diaspora community as one sphere in the model might help to solve some of the problems in the current triple helix practice.

Literature Review

The concept of triple helix

Innovation is becoming a primary source of organizational and national competitive advantage [5]. However, according to Fransen and Kuschminder [2], effective innovation practice is possible only if institutional, regulatory and economic efforts are organized in the direction of national economic interests. In such an effort, governments in both developed and developing countries rely on the integration and practice of triple helix innovation model [6,7]. Etzkowitz [8] defined

triple helix to be “a spiral innovation model that captures reciprocal relations at different points of knowledge capitalization”. It comprises three important role player, university, government, and industry [9].

The university in the triple helix model is an entrepreneurial university that plays multiple roles [6,7]. According to Bangun and Sukaraya [10], it generates and transfers innovative knowledge, develops human capital and leads into the process of solving regional and national economic problems. On the other hand, the industry provides necessary resources, uses generated knowledge to produce products of higher customer values and generates its own knowledge [6]. According to Casas et al. [11], also the national government through business and economic motivation influences the knowledge generation and implementation processes.

Triple helix as an innovation philosophy is accentuated not only in the developed economies but also in developing ones [6]. However, the practice of the model in the case of developing countries like Ethiopia is being challenged by different socio-economic and socio-cultural factors [12]. With the aim of transforming the universities, boosting the performance of small and medium enterprises and improving the involvement of the government in the development of innovation competence, Ethiopia has started practicing triple helix [4]. Yet, the practice didn't bring visible improvement to the innovation competence and performance of the manufacturing firms.

Diaspora a source of knowledge

“To this day we continue to lose the best among ourselves because the light in the developed world shines brighter” - Nelson Mandela [12].

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Ever widening economic gap between nations and the huge appetite for skilled manpower in the West among other reasons are triggering an increase in the migration of the productive segment of the African population. As reported by Mohamoud [13], currently more than a third of highly qualified African manpower is in the Diaspora community. The diaspora is defined to be “an ethnic minority group of migrants residing and acting in host countries but maintaining a sentimental and mental link with the country of origin” Newland and Patrick [14]. Though mostly targeted on the attraction of remittance inflow, a number of countries in Africa have invested an effort to involve the Diaspora community in national economic agendas [14]. Newland and Patrick [14] also argued that if strategically handled, the migration of skilled manpower to the developed countries has an indirect positive economic effect on the country of origin. The Diaspora has a potential of facilitating industrial development, improving international trade, investing in technology demanding sectors, and facilitating the flow of market and technology related information to origin country [15].

Ethiopia is one of the countries in the continent suffering from the migration of the productive part of the population [8]. For instance, a recent US census bureau report indicated that currently there are more than 140,000 Ethiopian Diaspora members and 30,000 decedents residing in America [13]. In addition, 59% of Ethiopian Diaspora living in the US has been reported to have a college education or higher [14].

Methodology

The paper is part of an ongoing research work that aims to identify problems related to the involvement of the diaspora community in the overall economic agenda of developing countries. More specifically, the paper investigates the core problems related to the low performance of the integration and practice of triple helix innovation model in Ethiopia. A one day KJ analysis role play by a group of experts from academia, supporting government institutions and textile and leather products manufacturing firms in the country is used as a source of data. According to Scupin [16], the KJ method is a group-based decision-making process developed by Jiro Kawakita in 1970 for the purpose of military related complex problem-solving. The group of experts participated in the process has prior experience in the practice of triple helix model in the country. Hence, the input is believed to be reliable.

Result and Discussion

Gaps in the current model

To support its ambitious economic transformation, Ethiopia is trying to build its innovation competence through the integration and practice of triple helix innovation model [4]. As part of the effort for example, the Ethiopian association of triple helix supported by

different economic partners of the country has been working for years to boost the innovation competence and performance of the small and micro enterprises in the country. However, regardless of the painstaking efforts from the collaborative spheres, the integration of triple helix innovation model in the country yet did not bring a visible effect [4]. Hence, with the aim of identifying the problem areas causing such a low performance in the practice of the current triple helix model, a group of experts from university, government institutions and manufacturing firms played a one day KJ analysis role. As the result of the one day KJ analysis role play, the group of experts identified six primary factors and related root causes resulted in a low performance in triple helix practice of the country. In general, the implementation of triple helix innovation model in the case of Ethiopia is fraught with problems related to lack of skilled manpower, inexperienced and underdeveloped institutions, lack of technical and managerial skills, and insufficiency of resources necessary for the university R&D activity. Consequently, in transforming the resource based economy into knowledge-based economy, the country is constantly seeking for international consultancy. Such gaps, however, can be filled with the inclusion of the knowledge and skills of the Diaspora community [14] (Table 1).

Filling the gap in the case of Ethiopia

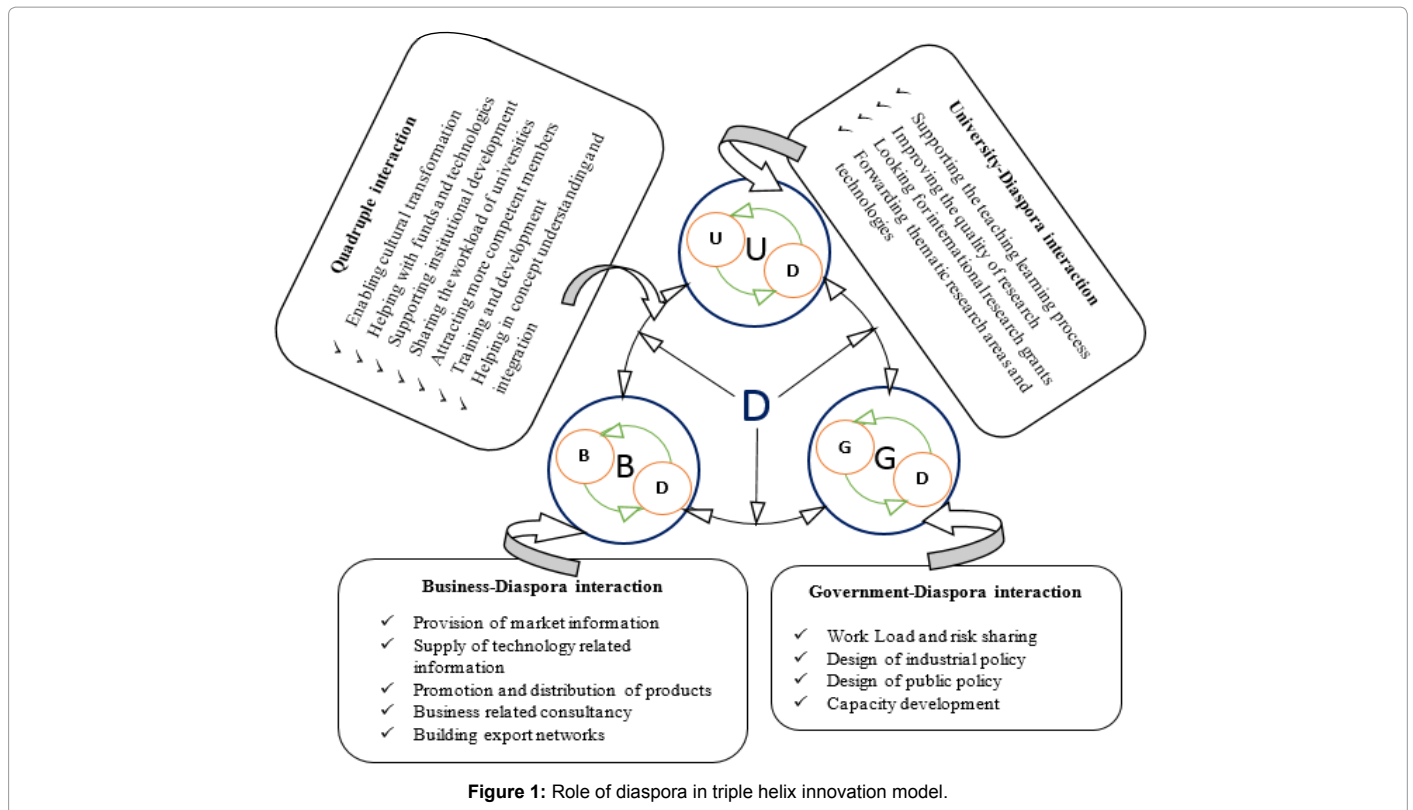
Regardless of the efforts invested in integrating the triple helix model to the innovation system of the country, the result is still low in the case of Ethiopia. Hence, redesigning the model by considering the socio-economic and socio-cultural conditions of the country will have more impact. On the other hand, the low development in each sphere and the lack of resources might be solved by integrating the skills and knowledge of the Diaspora community. The notion supports the findings of Fitriati and Rahmyanti [17], that the more spheres are included in the triple helix innovation model, the better the experience and the effectiveness of the interaction will be. Therefore, the inclusion of the Diaspora community in a more contextualized triple helix model will enrich the effectiveness of both horizontal and vertical interactions [18]. The Diaspora with its market and technology related information, technical and managerial skills and knowledge about international R&D grants will have both specific interaction with each sphere, (Vertical development) and the quadruple networking (horizontal interaction). This, in turn, will have an effect on filling the current gaps in the skills of the spheres of the current model (Figure 1).

Conclusion

With the aim of investigating the problems with the current triple helix innovation model practice in Ethiopia and suggesting an alternative model, the paper uses KJ analysis as a source of data.

Problem	Related causes
Culture	Lack of collaborative culture, lack of information sharing culture, isolated research design by universities, lack of culture of appreciation and dilemma on the capacity of university staff
Sphere orientation	Short term profit orientation of businesses, consideration of triple helix as an ad hoc activity, lack of readiness from university staff, satisfaction with current state of performance and slow paced solution from university side
Sphere development	Lack of necessary internal development in each sphere, newness to the international market, inflexible institutional structure, young universities, newness to the concept of the triple helix, lack of R&D experience and underdeveloped supporting government institutions.
Operation continuity	Difficulty to understand industry problems, frequency of policy changes, lack of sense of ownership from university side, overload on government, policy uncertainties, difference in objectives
Trust and understanding	Lack of legal contract, bureaucratic administration, lack of transparency, desire for power of control, high level of corruption, high risk and low frequency of communication
Resource	Lack of input to solve industrial problems, low level of technical and managerial skills, low research funds, lack of market information, overloaded universities, lack of readiness to share associated costs

Table 1: Causes for low impact of triple helix practice in Ethiopia.



According to the experts in the one day KJ analysis role play, six factors were identified as the primary cause of the low performance of the current triple helix model in the country. Thus, a more contextualized model that integrates the skills and knowledge of the Diaspora community will have more effect in the case of Ethiopia. To have such an effect, the national government needs to identify the possible role players and design a legal framework and motivation package to attract the Diaspora community to collaborate in the transformation of the model.

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