

Theme: Universities as interactive partners

BUILDING INTERACTION BETWEEN UNIVERSITY AND BUSINESS: WHAT DO THE ACTORS THINK ABOUT IT?

The current configuration of capitalist context promotes a dynamic and globalized society in which knowledge gains importance as a factor of production. In this sense, the university, the locus of knowledge production, is called to contribute to local development and the major challenge in this context of uncertainty is to expand the relationship between universities and the productive sector in search of greater economic and social autonomy.

This paper discusses the relationship between the university and companies from the perception of the actors from the State University of Goiás / Brazil (UEG) and local enterprises in the tourism sector and it also investigates whether this relationship contributes to problem solving and innovation. The questions that arise are: what is the type of interaction between universities and industry, and what are the obstacles which must be faced in order to promote partnership and cooperation between them? It is important to highlight that the emphasis on the role of the university in entrepreneurial activities has been extended by governments from public policies.

In Brazil, the incentives for innovation becomes from the Innovation Act (2004) that regulates the relationship between universities and the private sector and also motivates the interest in developing this study. This legal reference legitimizes the joint research, enables researchers to remain in the university and also enables companies to complement their internal investments in R & D.

The hypothesis is that the central actors of the university and companies in Goiás realized the urgent need to consider the interactive role of the university in a society increasingly based on knowledge and establish partnerships that contribute to the local development. Thus, the university has been redirected to consider a new economic, educational, political and social role from a dialogue between these actors (LUNDVALL, 2002, 2007).

The Triple Helix approach

The choice of the triple helix approach (Etzkowitz, 2000) is given by the focus on the innovation process from the interaction between university, government and industry. It also considers the endogenous and institutional issues that strengthen the National System of Innovation in developing countries that highlights the important role of knowledge. In this sense, the university is a great actor and, therefore, has been taken to a process of change that goes beyond the role of education and research which contributes to the regional development and the ability to technology transfer and innovation.

Institutional actors must assume new roles and functions in this context in which knowledge is an important input for socioeconomic development. The university, one of the main sources of knowledge, has been called to rethink its role in promoting innovation from interaction with industry and government and thereby generate economic activity from the results of research activities.

Accordingly, the purpose of the model is to transform the relationship between universities and businesses from a linear model to an interactive model of innovation that focuses on the building of knowledge production networks which allow the interface with the productive sector in an environment that manages a dynamic entrepreneurial university.

The Brazilian context specifically Goiás reveals the weakness of the articulation among institutions (university, business and government). Thus, the relationship between the university and local businesses has been played by different approaches because of its great complexity, but in this paper it is important to identify the triple helix model from the description and analysis of the perception of key players in the university and in the tourism companies.

Methodology

This paper considers a case study (Yin, 2001) with two perspectives: the university and the tourism companies. For this, we chose a qualitative and descriptive approach and the evolutionary theories about the process of innovation. In the first part, we sought to map the existence of interaction between universities and businesses from the description and analysis of questionnaires and interviews with key players in the university – director, teaching, research and extension coordinators and teachers. In the second part, we analysed the interviews with the actors of local businesses in the tourism sector – hotel managers from two tourist regions of Goiás in order to understand the perception of these actors on the relationship between this sector and the local university.

Findings and interpretation

The first part of the case study presents the perceptions of key players from UEG, a regional university. The initial proposal of the university was related to the different needs of the region and in its first decade the main objective was human resources and teacher training.

The answers about the existence of relationships between universities and industry reveal that the central actors understand that there is some kind of relationship. This fact can be explained by the fragile condition of the university. In its creation and evolution, UEG needed to seek to local partnerships because cooperation among peers was essential for its maintenance. An example of this cooperation was the offering of undergraduate programs maintained with the help of city governments and teachers' unions. However, even if there are relationships with local stakeholders, a low percentage of agreement of the researchers indicates that companies are less frequent partners. In interviews with teachers this perception is confirmed, therefore, they agree that there is some interaction with the local actors and add that the relationship is not only with educational institutions and government agencies connected to existing courses but also with companies. This case has highlighted that the relationship with the companies helps in teaching activities such as supervised training, researchers' choices and also the local conditions which enhances the ability to generate economic activity from the results of research conducted by the university.

Regarding the type of relationship, the central actors' points of view are different. The directors and research coordinators indicate a relationship of "service delivery", set mostly from encouragement and assistance in events held in the university and the teaching and extension coordinators point to the "agreement with the research project". Therefore, we conclude that the provision of service and agreements with research project are alternative designs for this relationship. We also conclude that equipment development, transference of technology and software development practically does not exist in this university.

The result of the interview provides further explanation about the type of relationship between university and company. For teachers, this relationship can be formal or informal and frequently occurs from teaching activities which are considered the most significant in

this university. It means that this relationship occurs from the diffusion of knowledge and the training of human resources.

Thus, the different actors point that teaching activities especially those of supervised training motivate the company's interaction with the local, since the university conducts evening courses, develops basic research and human capital training. They also highlight that the area of teacher knowledge can define this interaction since it is in the interest of the local company. This type of relationship is established by informal social relationships in the local community which enables confidence among stakeholders and establishes a culture of learning among peers cooperatively. Even if it is occurring sporadically, the relationship with the local company is a condition that has been part of the history of the institution and therefore the local but without any structure and formality.

The supervised training that is common to all students and the moment they acquire practical knowledge combined with theory facilitates learning and increases the level of knowledge. The learning activities carried out in different areas of business are noticeably more significant for achieving autonomy and create a network of essential contacts for professional life.

The development of these activities in partnership with business is made by the researcher's expertise, equipment and laboratories that are available to carry out the projects because even with the different local conditions, the ideological think is still a predominant factor to promote or defeat the kind of relationship with this institution. Moreover, it should be considered the interests of both the researcher and the company such as the production and dissemination of knowledge and the profit. For example, the engineering and agronomy areas conduct applied research and develop activities from teaching and research in the form of consulting, training and knowledge transfer to local development and they are considered potential entrepreneurial activities.

Other answers that clarify the interaction of the university carried out in partnership with local businesses are the activities in teaching projects (actions, stage), research and extension (courses, events, programs). The signs of central actors are for the student's participation in events, projects, "Junior Enterprise" and supervised training. Accordingly, it can be understood that UEG relates to companies from the theoretical and practical knowledge produced in their activities – teaching, research and extension.

The interaction between university and business can be stimulated by the teachers' purpose of linking theory and practice by stimulating student's participation in class and their interest. From this, the interaction between university and business allows the student to go further in their studies and contribute to the community through a multitude of elements that allow a dialogue based on local experience. Another type of stimulus that motivates the interaction is the shortage of materials and resources for the organization and development of practical activities of teaching, research and extension that mobilizes the university to look for external partnerships collaboration.

This study considers another aspect which is related to the difficulties in the relationship between the UEG and local businesses. The two alternatives that stood out in the results of the questionnaire of the directors and coordinators were "lack of infrastructure and incentive mechanisms" and "lack of interest of the actors." The central actors consider that the interaction depends on the public resources and financial support from the government once there are few investments and incentives for this interaction.

The teachers' interviews show another difficulty that explains the perception of the central actors in relation to the relationship between UEG and company. For them, these obstacles come from university and companies. Due to the university, the obstacles are related to

the researchers' theoretical area because they understand that it is necessary to produce knowledge that is very specific to the companies' interest; the absence of scientific researchers; the university culture is still based on the idea of the "ivory tower" in which teachers perform their activities in an individual form and they are not interested in developing them in a cooperative way with another institution.

Thus, there are few initiatives to disseminate their knowledge production because teachers do not make a release schedule of activities and they do not introduce it in the extension activity. There is, therefore, a lack of teachers' interest and also a little experience in performing partnership that make difficult an effective engagement for this relationship. The culture of the university may not be able to take the knowledge assets already accumulated for her to invest more in entrepreneurship and innovation areas.

Teachers also indicate some difficulties for interaction by enterprises. For them, there is no interest in investments and the company prefers to manufacture products that have already been developed rather than to invest in new product development. This idea needs to be changed, although this initiative is economically costly and time consuming, because they prefer to pay or break patents rather than create them.

The second part of the case study presents the perceptions of central actors in the tourism sector on the relationship and interaction between industry and university. The tourism sector has shown a growing economic importance in the state and the development of sector workers' innovative capacity can occur from the interaction and relationship with the university.

Among the companies related to the tourism sector, in this paper we considered the hotels. We interviewed managers from the hotels of two tourist regions of the state: the Region of Water and the Region of Gold. Although there is a geographic proximity, the two regions

have different characteristics. While the Region of Water offers mass tourism, the Region of Gold offers tourism of experience. Both believe that seasonality is one of the difficulties of the sector and they invest in the potential of the region as a tourist attraction which is the thermal waters in the Region of Water and the history, culture and local cuisine in the Region of Gold.

From the analysis of the information obtained in the interviews with the main actors of the companies about the relationship between the university and companies in the sector, we highlight the professional training which can contribute to innovation in the tourism sector.

For enterprises central actors, training in higher education is important and desirable. Managers of hotels consider this training contributes to the professional qualification of the sector. But note that the routine work does not help the formation of those who work in hotels, because the workday in hospitality occurs at the same time of higher education classes.

As a result, especially in the Region of Water, the professional training in the tourism sector has happened in mid-level technical courses and not in higher education. This fact implies the creation of knowledge in the sector since there is not an effective practice for discussions about the decisions and innovations in the sector. Thus, the sector has difficulty in hiring and valuing the professional top-level and it hires unskilled workers and encourages informal work. In this sense, hotels often hire unskilled workers and train professionals to do the activities the way the company needs. As a result, it is understood that, even when sector workers attend a university, the university does not seem to meet the needs of the sector once the theoretical knowledge are not related to such needs.

On the other hand, in the Region of Gold, the relationship between the university and companies can help with the hiring of industry professionals when it encourages the

inclusion of professional in the local companies because the community recognizes and appreciates the professional trained in the region. The managers said that the entrepreneurs of the tourism sector did not allow employees to go to university, but currently, this perception has changed and they motivate employees to build capacity because they believe that this training makes a difference in their performance in hotel.

Managers recognize that there is an appreciation of the professional who leaves the university and the region absorbs trained staff in local universities. They also agree that there are important activities undertaken by the university that allow the relationship between universities and tourism sector which expand the condition of the professional training. Among these activities, they considered the supervised training in enterprises of the tourism sector.

In the Region of Gold, there is no difficulty in creating training opportunities because local businesses are interested in students from universities. Both companies and universities agree that actors of the companies also seek higher education after offering their business as a place for supervised training. It highlights the importance of the relationship between universities and companies that recognize the role of tourism courses in the creation and dissemination of knowledge of sector.

In the Region of Water, hotel managers criticize the way the university organizes the supervised training and its reflection in the practice of business and difficulties in carrying out other activities that promote interaction. The businessmen claim that they are afraid to bring the student to the company and share important information to the company. And also, they do not consider that the activity is well organized and serious.

The relationship between the university and local businesses can contribute to new ways of solving problems, increasing the capacity for innovation and entrepreneurship of industry

professionals. For hotel managers, there is training but there is no interaction or experience exchange with those who truly experiences the tourism activities. Although there are innovative activities in the tourism sector in the Region of Gold, this debate still appears very shy both in companies and in the university and it is still needed to understand the importance of the formal relationship between companies and universities.

Conclusion

The Brazilian reality reveals the lack of articulation between institutions (university, business and government), so the Triple Helix model can be used more as a strategy to point out ways to create a knowledge society than a reflection of that relationship. The lack of infrastructure is pointed out by all stakeholders of the university and it is present in both the local company and the university because the condition of infrastructure companies is highlighted as a barrier to interaction because they say that companies are not very prepared to make this interaction. On the other hand, the fact of low infrastructure in university triggers the absence of trust between the actors because teachers warn of concern for business regarding the reliability of the results achieved at university as they are mainly concerned by the lack of standardization in some equipment which can be a risk, because if there is poor medical infrastructure is possible that the results achieved by the equipment may result in data that are not real.

Thus, the lack of infrastructure, whether physical or technological, promotes and also makes difficult the interaction because the limited resources can indicates that the shortage of resources promotes greater cooperation within the university; it enables the relationship and justifies the partnership that is the real condition of deficiency of both the UEG and the local community.

The actors of the university agree with the alternative that relates to the lack of incentive mechanisms because they consider the lack of support from government agencies. Other difficulties occur from the difficult on transferring technology that would be something possible for the local small business that require the production of knowledge from the university and also would comply with the law by paying their taxes. It means that the actors from UEG care and are interested in the contribution that can be given to the local but point out the lack of state incentives.

As a result, teachers also indicate that the bureaucracy of the state agency departs the company of this relationship, report that there is an excess of documents that make them desist and therefore informality prevails in this interaction.

Thus, it appears that the UEG has as the most important activities the "human resources' training" and the "reproduction and diffusion of knowledge". Therefore, the evidence shows that the institutional movement of UEG in relation to partnerships with business and government occur by reduced relations between these institutions and that this interaction occurs in personal relationships, in informality between actors in an attempt to solve the local problems.

The analysis shows that the partnership between the university and local businesses are informal and depend on the personal relationships between the actors of the university and companies. Thus, the relationship between this regional university with local companies is characterized, first, by being symbolically necessary and desired by many municipalities in Goiás and second, by promoting a constant point to develop its new role, even if they do not be aware of the context of innovation.

In this case study, it is clear that there is a relationship and interaction between universities and local businesses expressed in activities such as seminars, continuing education courses

and research, but these relationships and interactions have still developed a shy entrepreneurial attitude, a small capacity for innovation or creation of an office of technology transfer. This means that the university is not well structured to interact with the local business yet. Thus, the university has changed and its incremental changes have promoted the creation, production and transfer of knowledge, technology and innovation, which are important to local development.

The conclusions of this study are preliminary but one of the main challenges for local development is the construction and articulation of an innovation that is in its initial phase. It is believed that the actors already disclose new common strategic research and contribute to public policy from the problems and challenges faced by the university in its transformation. Thus, the relationship between the university and the local company in Goiás contributes to vocational training activities and research practices but it is believed that the activities that generate technologies for economic actors are also in the initial phase.

Another finding from this analysis is that the government, through the development of public policies and financial incentives can promote greater production and dissemination of knowledge for local development from innovation and can also improve competitiveness. In fact, the university is able to play an interactive role on local businesses that can be considered a strategy for local development and innovation. In the case of Goiás, we realize that an incentive for interaction between the university, the state and companies have promoted the regional system of innovation, learning and developing new businesses that contribute to local development. In this sense we believe the relationship and the interaction between university and local business is being building.

Policy implications

Currently, the university is interested in innovation and entrepreneurship and its activities are tools for the relationship with the productive sector. Therefore, one of the initiatives of both UEG and the tourism enterprises should be the implementation of physical, scientific and technological infrastructure and the motivation to the cooperation between the university and the company.

The dynamics of the interaction between university and company have to be built. One possibility is to update the curriculum of disciplines in order to make them more current and consistent with this discussion. Another possibility would be the development of policies that promote alliances between universities, government and businesses to facilitate the completion of regional innovation systems and learning and which may present innovations to market, and this fundamental interaction to the process of competition and for developing region. Thus, it is necessary to build a space of interaction that involves strengthening institutions for effective interaction that contributes to innovation.

Directions for Further research

It is believed that these investigations are important to enlarge and cause the opening of the new mission of the university in this context in which the creation, production and transfer of knowledge, technology and innovation are fundamental to the local development. And even instigate the actors of the region to appreciate the importance of partnership and cooperation between universities, government and local businesses to contribute directly to the socioeconomic development of the state and the future of the regional innovation system. As it clarifies the role of this institution in higher creation, production and transfer

of knowledge, the stakeholders can rethink new research to disseminate strategic actions and public policies for local development and also encourage public policies for higher education in Goiás that contribute to the reduction of delay and overcoming socioeconomic and focus on the development of products and processes and hybrid institutions that would facilitate the creation of new companies and technology transfer.

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