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A Literature Review on Barriers and Enhancers of Knowledge Transfer

1. Introduction

The present paper results from a literature review carried out as part of COTRANS (Conditionings of Knowledge Transfers and Innovative Activity of Enterprises). COTRANS is an international research project including partners from Portugal and Poland (Faculty of Management at University of Gdansk, Faculty of Finance and Management at Torun School of Banking and School of Management and Technology of the Porto Polytechnic). The project aim is the development of a conceptual model on Knowledge Transfer.

Knowledge constitutes the basis of the learning process at any organization. “Knowledge and the way how organizations work with it directly influences their readiness for action and success, especially in knowledge society” (Mládková, 2014). According to Drucker (1993), knowledge is a management resource and power. In turn Wiig (1997) argues that knowledge is a form of belief.

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2 School of Management and Technology – Polytechnic of Porto; CIICESI; INESC-TEC
3 Marketing Department, Faculty of Management, University of Gdansk
4 Management Department, Faculty of Finance and Management, WSB University in Toruń
5 Marketing Department, Faculty of Management, University of Gdansk
6 Marketing Department, Faculty of Management, University of Gdansk
7 Management Department, Faculty of Finance and Management, WSB University in Toruń
8 School of Management and Technology – Polytechnic of Porto; INESC-TEC; CIICESI
9 School of Management and Technology – Polytechnic of Porto; CIICESI
Knowledge can be analyzed from the tacit and explicit perspectives (Nonaka & Takeuchi, 1996; Polanyi, 1966)\(^\text{13}\). For Nonaka & Takeuchi (1996), most western managers understand that useful knowledge is “hard” or quantifiable (Explicit). However, knowledge also depends on tapping the tacit and often highly subjective insights, intuitions, and ideals of employees (Tacit). Knowledge as argued by Davenport & Prusak (2005)\(^\text{14}\) is present in organizations’ documents or repositories, but is also in organizational routines, processes, practices, and norms. For Argote & Darr (2000)\(^\text{15}\), knowledge resides in the individuals, technology, structure, routines and coordination processes within organizations.

In order to improve organizational knowledge, it is possible to use many different strategies, however, it is important to learn, first from the inside. “Both knowledge and project management literature suggests that in practice lessons learned processes rarely happen, and when it does, it is concerned with lessons identification rather than organizational learning” (Duffield & Whitty, 2015)\(^\text{16}\). This capacity of firms to learn from their past experiences is closer to the tacit knowledge concept.

Whether tacit or explicit, in a dynamic competitive environment, knowledge becomes the key source of constant advantage over the competition and the main condition for reaching success. Both development and an organization’s ability to survive are largely dependent on its ability to gain knowledge and use it effectively.

Despite the fact that knowledge is a crucial factor for organizations, knowledge does not appear by law. It is mainly a matter of organizational culture and strategy. Because knowledge is a key factor for success, a strategy for knowledge creation must be implemented. So, the first step depends on firms’ management. Knowledge creation strategies may help the manager in the creation of value and knowledge in the organization. In order to successfully implement knowledge strategies, there are several suggested models (Brookes, 2014; Duffield & Whitty, 2015).

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Due to their dimension, some firms may explore knowledge through their own R&D departments, while others may be in an R&D network. Or it may even be a stakeholder within a logistic process benefiting from upstream or downstream R&D activity results. In fact, “the effectiveness of knowledge transfer between a firm and a supplier has a significant impact on profit and should be considered before implementing supplier development activities” (Clemons & Slotnick, 2016).

Even though firms recognize knowledge as a crucial factor for development, profits, and innovative activities, most firms do not undertake R&D activities due to a lack of resources or competences. Since knowledge has become the most important source of competitive advantage, this leads to the importance of the role of universities as producers of knowledge (Anatan, 2015). “As universities gradually become the center of society’s knowledge production system, their role in innovation becomes more diverse. In the pursuit of such a role, universities are encouraged to establish a university–industry collaboration (UIC) context that supports faculties and students to engage in entrepreneurial activities” (Huang & Chen, 2015).

Firms that find themselves in a weak position in terms of knowledge creation and have a desire for innovation may start with knowledge exploration “on the outside”, in particular partnering with the higher education system.

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Upstill & Symington (2002)\textsuperscript{21} \textit{apud} Nilsen & Anelli (2015)\textsuperscript{22} argued that there are three basic modes for technology transfer from public research to the business sector:

- **Non-commercial transfer**: seminars, informal contacts, publications, secondments and staff exchange and training;
- **Commercial transfer**: collaborative research, contract research, consulting, licensing and sale of intellectual property and technical services;
- **New company generation**: direct spin-offs, indirect spin-offs and technology transfer companies.

Knowledge transfer or exchange occurs when stakeholders are able to identify advantages. Knowledge exchange goes beyond the concept of knowledge transfer (Ankrah & AL-Tabbaa, 2015; Salleh & Omar, 2013)\textsuperscript{23}. Knowledge exchange presents a wider perspective for University-Industry Collaboration (UIC) as it implies a bi-directional exchange of knowledge. From this perspective, the customer’s role is no longer a passive recipient of value at the end of a transaction, but is co-creating value with the supplier during an exchange (Canhoto, Quinton, Jackson, & Dibb, 2016)\textsuperscript{24}.

Scholars have argued that both university and industry actors are motivated to build relationships with one another to take advantage of their complementary organizational strengths (Mueller, 2006; Siegel, Waldman, Atwater, & Link, 2003)\textsuperscript{25} \textit{apud} (Ankrah, Burgess, Grimshaw, & Shaw, 2013)\textsuperscript{26}.

In the next chapter we will briefly explore the concept and processes of knowledge transfer identifying later the main barriers and enhancers for knowledge transfer.

\textsuperscript{22} Nilsen, V., & Anelli, G. (2015). Knowledge Transfer at CERN. \textit{Technological Forecasting and Social Change}.
2. Knowledge Transfer

Knowledge and technology transfer could be defined as “the movement of know-how, technical knowledge, or technology from one organizational setting to another” (Roessner, 2000). “As a process, knowledge is exchanged ‘between two agents, during which one agent purposefully receives and uses the knowledge provided by another” (Foss & Pedersen, 2002).

Knowledge transfer is a process which puts knowledge into practice. It relies on the flow by which largely tacit knowledge, not technology per se, is transmitted among people from one unit (the source: a single person, group or organisation) to another (the recipient), with all kinds of feedback loops (Formica, Mets, & Varblane, 2008).

Knowledge Transfer may occur in many different ways: National or International Franchise Agreements [(Brookes, 2014; Minguela-Rata, López-Sánchez, & Rodriguez-Benavides, 2010; Sorenson & Sorensen, 2001); Joint-ventures [(Becerra, Lunnan, & Huemer, 2008; Park & Vertinsky, 2014); Along the supply chain/or stakeholder interactions [(Clemons & Slotnick, 2016; Ugolini, Massetti, Sanesi, & Pearlmutter, 2015); From project management and lessons learned

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Considering the importance of knowledge and the limitations of most businesses in developing these activities, the higher education system is an important player in this game.

The cooperation between industry and university is an important strategy for technological innovation [Anatan, 2015; EU, 2007; Formica et al., 2008; González-López, Dileo, & Francesco, 2014; Lai, 2011; Maietta, 2015; OECD, 2012, …] According to Gupta & Barua (2015) “the collaboration of university and industry leads to mainly two types of transfers from university to industry, these are R&D results transfer and technology transfer. The R&D results transferred lead to innovative ideas in the industry which leads to a new product development with the help of technology transfer from university to industries (Guan, Yam, & Mok, 2005). Linkages with R&D institutions and long standing experience with respect to a particular technology tend to facilitate SME innovations” (Krishnaswamy, Subrahmanya, & Mathirajan, 2015).


For Fernández-Esquinas, Pinto, Yruela, & Pereira (2015)\textsuperscript{38} firms interact with universities through a variety of channels, ranging from collaborative research projects, patents, spin-off creation, consultancy and specialized training, to informal relationships. The same authors found evidence that university–industry links can be grouped into five latent dimensions (knowledge generation and adaptation, involvement in new organizations, training and exchange of human resources, intellectual property rights, and facilities and equipment) which are mainly based on exploitation or exploration activities.

Even recognizing the major importance of UIC Garcia-Perez-de-Lema, Madrid-Guijarro, & Martin (2015)\textsuperscript{39} in their research about different university–firm governance styles, the authors concluded that only contractual university–firm relationships have a direct and significant effect on innovation, whereas relational activities promote and support contractual activities.

Dryl et al. (2015)\textsuperscript{40} argue that knowledge transfer is about identifying knowledge that already exists (Exploration), acquiring it (Acquisition) and subsequently applying this knowledge to develop new ideas or enhance the existing ideas to make a process/action faster, better or safer than they would otherwise be (Exploitation). So, basically knowledge transfer is not only about exploiting accessible resources, i.e. knowledge, but also about how to acquire and absorb it well to make things more efficient and effective. In other words, knowledge transfer is crucial for most firms in order to promote innovation (Product, Process, Marketing or Organizational (OECD, 2005)\textsuperscript{41}).

The most common definitions of innovation regard the creation of something new, inventing and introducing change. Innovation in turn spurs economic development (Kontolaimou, Giotopoulos, & Tsakanikas, 2016)\textsuperscript{42} that


results as well from entrepreneurial activity and entrepreneurship (Acs, 2009; Audretsch & Thurik, 2001; Block, Thurik, & Zhou, 2013). If universities, industry and government are able to work aiming at the same objectives, there is a greater chance to get better results.

In the next chapter, based on a literature review, we will identify some important factors that can promote or inhibit the knowledge transfer process, mainly at the university-industry level.

3. Enhancers and Barriers to Knowledge Transfer

After a brief overview of the concept of knowledge transfer and its importance for firms’ development, following the main factors identified in the literature review than can work as an enhancer or barrier to knowledge transfer will be presented.

In order to identify what could determine the success of knowledge exchange Ankrah & AL-Tabbaa (2015) presented a list of factors. In the research it was found that if those factors were correctly managed, they would have a positive effect on the perceived success of knowledge and technology exchange. On the other hand, where the same factors were neglected or mismanaged, it tended to have a corresponding negative impact on the perceived success of knowledge and technology exchange.

The fact that the same factor can work both as a positive or negative impact on knowledge transfer, has led to the search of important factors, not taking into consideration if it is a barrier or an enhancer. Depending on the situation and the conditions under which knowledge transfer is (or is not) occurring the same factor can promote or block the transfer process.

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# Table 1. Categories and Factors that Affect Knowledge Exchange Success

<table>
<thead>
<tr>
<th>Main categories</th>
<th>The factors</th>
</tr>
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<tbody>
<tr>
<td>Capacity and Resources</td>
<td>Adequate resources (funding, human and facilities)</td>
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<td></td>
<td>Incentive structures for university researchers</td>
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<td></td>
<td>Recruitment and training of technology transfer staff</td>
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<tr>
<td></td>
<td>Capacity constraints of SMEs</td>
</tr>
<tr>
<td>Legal Issues, and Contractual Mechanisms</td>
<td>Inflexible university policies including intellectual property rights (IPR), patents, and licenses and contractual mechanisms</td>
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<td></td>
<td>Treatment of confidential and proprietary information</td>
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<td></td>
<td>Moral responsibility versus legal restrictions (research on humans)</td>
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<td>Management and Organization Issues</td>
<td>Leadership/Top management commitment and support</td>
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<td></td>
<td>Collaboration champion</td>
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<td></td>
<td>Teamwork and flexibility to adapt</td>
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<td>Communication</td>
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<td></td>
<td>Mutual trust and commitment (and personal relationships)</td>
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<td></td>
<td>Corporate stability</td>
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<td></td>
<td>Project management</td>
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<td></td>
<td>Organization culture (cultural differences between the world of academia and of industry)</td>
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<tr>
<td></td>
<td>Organization structure (university administrative structure and corporate structure)</td>
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<tr>
<td></td>
<td>Company size (size of an organization)</td>
</tr>
<tr>
<td></td>
<td>Absorptive capacity</td>
</tr>
<tr>
<td></td>
<td>Skills and role of both university and industry boundary spanners</td>
</tr>
<tr>
<td></td>
<td>Human capital mobility/personnel exchange</td>
</tr>
<tr>
<td>Issues Related to Technology</td>
<td>Nature of the technology/knowledge to be transferred (tacit or explicit; generic or specialized; academic rigor or industrial relevance)</td>
</tr>
<tr>
<td>Political Issues</td>
<td>Policy/legislation/regulation to guide/support/encourage UIC (support such as tax credits, information networks and direct advisory assistance to industry)</td>
</tr>
<tr>
<td>Social Issues</td>
<td>Enhancement in reputation/prestige</td>
</tr>
<tr>
<td>Other Issues</td>
<td>Low level of awareness of university research capabilities</td>
</tr>
<tr>
<td></td>
<td>Use of an intermediary (the third party)</td>
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<td></td>
<td>Risk of research</td>
</tr>
<tr>
<td></td>
<td>Cross-sector differences/similarities</td>
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<tr>
<td></td>
<td>Geographic proximity</td>
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</tbody>
</table>

The original table, according to the authors, was constructed by adopting the first two headings (i.e. Capacity and Resources and Legal Issues, Institutional Polices and Contractual Mechanisms) from Fairweather (1991)\textsuperscript{45}, and creating the remaining five headings to suit the emerged sub-themes.

As previously mentioned, most firms do not undertake innovation activities due to a lack of resources or competences. Under this scenario, universities play a major role in supporting innovation under knowledge transfer activities. However, firms do not reach out to universities to buy some existent technology or just to check if there is something interesting on the shelves. Firms define their own strategy for interaction with a university after having reflected on their present and future knowledge needs (Bekkers & Freitas, 2008)\textsuperscript{46}.

Bekkers & Freitas (2008) observed two major patterns of interaction for firms that aim at being innovators or early adopters in their market. “One strategy more focused on collaborative and contract research...; the other more reliant on patents, licensing and specific organized activities to support access and adoption of systemic knowledge... In both cases, as firms need to engage in the application of scientific published knowledge to the specific needs of their products and of the markets’ needs, firms also need to rely on scientific publications, informal contacts with university researchers and students”. These informal contacts lead us to the concept of communication. In this case, we are talking about informal communication, or trust relations.

According to Plewa et al., (2013)\textsuperscript{47} “the critical nature of trust, or a willingness to rely on an exchange partner in whom one has confidence (Morrison et al., 1992, p. 315), for relationship success has been confirmed in many streams of literature, including UILs (Mora-Valentin, Montoro-Sanchez, & Guerras-Martín, 2004) and (Plewa, 2009)..., in line with commitment – trust theory (Morgan & Hunt, 1994). According to social exchange theory, trust “allows firms to move from discrete transactions to relational exchange (Lambe, Wittman, & Spekman, 2001 p. 21). Some authors argue that trust develops at a slow pace through investment, experience, and repeated interactions (Collins & Hitt,


2006) and (Dahl & Pedersen, 2005); others note that trust can be built and evaluated quickly and intensely through negotiation, shared vision, and fast appreciation of the value contributed by the partner (Blomqvist, Hurmelinna-Laukkana, Nummela, & Saarenketo, 2008). Trust as a relational characteristic also has varying levels of relevance in various phases (Grayson & Ambler, 1999)*. From this citation it is possible to acknowledge the significant number of studies focusing on trust. Many others such as (Bruneel, D’Este, & Salter, 2010)*48, (Hemmert, Bstieler, & Okamuro, 2014)*49 or (Dooley & Kirk, 2007)*50 also present trust as an important factor.

Still Plewa et al., (2013) citing other authors, argues that communication facilitates the development of understanding, and understanding drives a relationship evolution and success (Barnes, Pashby, & Gibbons, 2002)*51, in all phases of the relationship. Understanding developed through the prior interaction can reduce transaction costs and improve the ease of knowledge transfer (Kim, 2009)*52.

Other issues frequently quoted as important factors for UIC are geographical proximity (D’Este, Guy, & Iammarino, 2013)*53. Maietta (2015)*54 also suggests geographical proximity along with university, firm and territory characteristics.

University, company and territory characteristics are not the only ones that must be taken into consideration; as argued by D’Este & Patel (2007)*55, also researchers’ characteristics must be taken into account. These last authors suggest that policies that are mainly targeted towards universities are likely to have

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a limited impact on encouraging university–industry interactions, unless they take a better account of the characteristics of the individual researchers engaged in such interactions.

Along with the stakeholders’ characteristics, organizational operation factors for knowledge sharing are also to be considered: Leadership support; Learning and Training; and Communication were the factors identified by Oyemomi et al., (2016)\(^{56}\).

All the factors presented up to now are indeed relevant factors, but one cannot forget that, in general, firms are profit oriented. Anatan (2015)\(^{57}\) presented a literature review of conceptual issues in University to Industry knowledge transfer and identified three major theories: Transaction Cost Economic, Theory, Resource-based View, and Knowledge-based View. In this research, the author pointed out another important issue discussed in the literature that is the “alliance dilemma” focusing on aspects such as costs and time needed for this cooperation.

The cost factor leads us to another one that seems to be an important contribution to promoting knowledge transfers: funding (Berbegal-Mirabent, Sánchez García, & Ribeiro-Soriano, 2015)\(^{58}\). “Three things seem to be important for the capability of universities to attract private funding. First, the experience of departments in building relations with businesses: departments that obtained private funding in the past are more likely to continue to be able to attract private finance. Second, the ability to achieve a critical mass of research in a given sector, in terms of visibility and results is important. Third, the proximity of the university to an ID increases the capability obtain business funding” (Muscio, Quaglione, & Scarpinato, 2012)\(^{59}\).

Osabutey & Jin (2016)\(^{60}\) identified four contextual factors that could influence knowledge and technology transfer. Those factors are: (1) less congestion of firms

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(foreign and local), (2) government policy incentives, (3) effective intermediate industry institutions, and (4) educational effectiveness. As regards intermediate institutions, these are the “departments” that the higher education system has created to facilitate UIC. According to Villani, Rasmussen, & Grimaldi (2016), technology Transfer Offices (TTOs), University Incubators (UIs), and Collaborative Research Centers (CRCs) have been established to mitigate the existent barriers to knowledge transfer.

Even with many different studies presenting the factors to enhance or factors that can inhibit knowledge transfer, there is always an issue that is crucial at all inter-institutional relations: the organizational culture. According to Bjerregaard (2010), firms and universities face major challenges when attempting to work together due to the existence of different institutional cultures. While firms are typically result-oriented, universities are driven by cultures that emphasize scientific performance unrelated to profit or market considerations (Partha & David, 1994).

Up to now there have been presented several factors related to knowledge exchange success or failure. Following there will be presented a table summarizing the most important concepts that can be evaluated under a questionnaire (future research). The main goal is to identify the most relevant factors to knowledge exchange success.

Table 2. Main Factors for Knowledge Transfer Activities

<table>
<thead>
<tr>
<th>Factor</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication / understanding</td>
<td>(Oyemomi et al., 2016); (Ankrah &amp; AL-Tabbaa, 2015); (Bekkers &amp; Freitas, 2008); (Barnes et al., 2002); (Plewa et al., 2013); (Hooff &amp; Ridder, 2004)</td>
</tr>
<tr>
<td>Existence of intermediate institutions (TTOs, Collaborative Research Centers, University Incubators,…)</td>
<td>(Osabutey &amp; Jin, 2016); (Ankrah &amp; AL-Tabbaa, 2015); (Villani et al., 2016)</td>
</tr>
<tr>
<td>Financial support</td>
<td>(Ankrah &amp; AL-Tabbaa, 2015); (Muscio et al., 2012); (Osabutey &amp; Jin, 2016)</td>
</tr>
</tbody>
</table>

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Table 2 presents a summary of the factors that must be considered to implement and analyze the success of knowledge transfer. The factors presented here may be of different importance per the activity sector. However, the main purpose of this paper was the identification of the factors that can influence knowledge transfer regardless of the activity sector. For specific purposes, in future research, particular characteristics of activity sectors must be considered.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>(In) existence of cultural differences between the world of academia and of industry</td>
<td>(Ankrah &amp; AL-Tabbaa, 2015); (Bjerreggaard, 2010); (Partha &amp; David, 1994)</td>
</tr>
<tr>
<td>Information networks</td>
<td>(Ankrah &amp; AL-Tabbaa, 2015)</td>
</tr>
<tr>
<td>Leadership support / Management involvement</td>
<td>(Oyemomi et al., 2016); (2015)</td>
</tr>
<tr>
<td>Learning and training</td>
<td>(Oyemomi et al., 2016)</td>
</tr>
<tr>
<td>Level of university research capabilities</td>
<td>(Ankrah &amp; AL-Tabbaa, 2015); (Maietta, 2015)</td>
</tr>
<tr>
<td>Nature of the knowledge exchange (explicit or tacit)</td>
<td>(Ankrah &amp; AL-Tabbaa, 2015)</td>
</tr>
<tr>
<td>Policy; legislation; regulations</td>
<td>(Ankrah &amp; AL-Tabbaa, 2015); (Osabutey &amp; Jin, 2016)</td>
</tr>
<tr>
<td>Previous experience in exchange activities</td>
<td>(Blackman &amp; Segal, 1991); (Dahl &amp; Pedersen, 2005); (Muscio et al., 2012)</td>
</tr>
<tr>
<td>Proximity</td>
<td>(Maietta, 2015); (D’Este et al., 2013); (Ankrah &amp; AL-Tabbaa, 2015); (Muscio et al., 2012)</td>
</tr>
<tr>
<td>Resources:</td>
<td></td>
</tr>
<tr>
<td>Human (team work, flexibility, personal exchange)</td>
<td>(Ankrah &amp; AL-Tabbaa, 2015); (D’Este &amp; Patel, 2007)</td>
</tr>
<tr>
<td>Cost</td>
<td>(Anatan, 2015); (Kim, 2009); (Plewa et al., 2013)</td>
</tr>
<tr>
<td>Time</td>
<td>(Anatan, 2015)</td>
</tr>
<tr>
<td>Territory characteristics</td>
<td>(Maietta, 2015)</td>
</tr>
<tr>
<td>Trust (Personal relations)</td>
<td>(Ankrah &amp; AL-Tabbaa, 2015); (Bekkers &amp; Freitas, 2008); (Plewa et al., 2013); (Bruneel et al., 2010); (Dooley &amp; Kirk, 2007); (Hemmert et al., 2014)</td>
</tr>
</tbody>
</table>

Source: The authors’ own work.
4. Conclusion

From this research, some main conclusions can be drawn in order to better understand the conditions for knowledge transfer, in particular from higher education institutions (directly or through their intermediaries) to industry.

The first conclusion is related to the major role that the higher education system plays in supporting innovation under knowledge transfer activities. However, it is important to mention that the same factor can be identified as a barrier or as an enhancer, depending on the context and stakeholders involved. For instance, past successful experiences among the stakeholders will decrease the costs of collaboration/cooperation.

The process for knowledge transfer takes most of the times three main steps: Exploration, Acquisition and Exploitation. Depending on the maturity in knowledge transfer of the institutions involved, each interaction may start at a different step. For a firm that is just starting to engage in innovation activities, knowledge transfer is the recommended approach to explore the market. However, for a firm and knowledge producer (Higher education) that have been working together, for a new project, knowledge transfer may not be the only option. It can start immediately with the exploitation of knowledge for both stakeholders.

The factors that are most frequently referred to in the literature as determinants for an effective knowledge transfer or exchange are: Communication, Funding, Organizational issues (organizational culture), Previous experience, and Trust. However, despite the fact that these are the most important factors, it does not mean that others (see Table 2) should not be considered. A deeper literature review may unfold other factors, but according to this research, the factors presented at Table 2 were considered the most frequent, thus most relevant.

Following this paper, the project (COTRANS) will go on with the design of a semi-structured interview to assess companies’ perceptions regarding the transfer of knowledge before a number of factors. This will allow us to test the factors that were now identified in different industries in an effort to understand the main differences between the factors depending on the industry.
References


Stymulanty i bariery w procesie transferu wiedzy – przegląd literatury

Streszczenie

Celem artykułu jest wskazanie motywatorów i barier w procesie transferu wiedzy. Punktem wyjścia jest fakt, że obecna współpraca pomiędzy biznesem a środowiskiem akademickim jest niezwykle istotna dla rozwoju biznesu i tworzenia w jego ramach wartości. Zarówno przedsiębiorstwa, jak i organizacje B + R uznają rolę tej współpracy, niezbędnej do tworzenia zróżnicowanych produktów i usług, a także budowania przewagi konkurencyjnej. Praca została oparta na krytycznej analizie literatury przedmiotu i pokazuje wstępne rezultaty trwającego projektu, którego celem jest budowanie pojęciowego modelu transferu wiedzy. Pierwszym rezultatem było zidentyfikowanie czynników, które uznano za bariery i motywatory transferu wiedzy oraz – konsekwentnie – za działania innowacyjne. Dla przedsiębiorstw (poziom mikro), regionów i krajów (poziom makro) są to kluczowe elementy wzrostu i rozwoju. Metodologia wykorzystana w artykule bazuje na przeglądzie literatury przedmiotu, który pozwolił zidentyfikować główne aspekty transferu wiedzy – zarówno pozytywne, jak i negatywne – oraz umożliwił stworzenie kwestionariusza, wykorzystanego jako narzędzie w badaniu przedsiębiorstw w wybranych krajach (służyło to pokazaniu motywów działania w różnych kulturach). Wśród czynników wpływających na transfer wiedzy respondenci najczęściej wymieniali współpracę nauki i biznesu. W artykule wskazano też kilka czynników, które dla pewnych badanych przedsiębiorców okazały się stymulantami, a jednocześnie dla interesariuszy stanowiły bariery. Wśród nich były: koszt współpracy, komunikacja, kompetencje, dostępność centrów transferu technologii.

Słowa kluczowe: transfer wiedzy, stymulanty transferu wiedzy, destymulanty transferu wiedzy, uwarunkowania transferu wiedzy