

TYPES OF MODELS OF ACTIVITIES OF KNOWLEDGE BROKERS

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Abstract: Innovativeness appears to be one of the most important attributes associated with the best of both public and private organizations. There are many studies conducted that aim at comparing the level of innovativeness among different regions. In general, one can assume that public and private organizations should cooperate and exchange their knowledge of both tangible and intangible elements within each region. However, it often happens that cooperation among organizations that possess distinct resources does not occur smoothly. This may also be because local social capital is not developed sufficiently to make it possible for companies to open their boundaries and allow some knowledge simply to spill over. That is why organizations like knowledge-brokers are necessary. Thanks to their activities, it becomes possible for companies to be able to acquire new and reliable knowledge sources at a local and non-local scale. The aim of the paper is to present emerging types of knowledge-brokers that result from the research conducted in Slaskie Voivodeship in 2018. The research method is a multiple case study with seven cases and deep interviews with people representing organizations responsible for taking part in knowledge and information transfer served as a major source of data. The results of analysis are presented and discussed, and further paths of research are proposed.

Keywords: knowledge-brokers, models of activities, regional development.

1. Introduction

Phelps, Heidl and Wadhwa (2012) proposed a definition of network knowledge as a set of nodes (of individuals, as well as of different kinds of organizations) that serve as heterogeneously distributed repositories of knowledge and actors. These actors are expected to maintain social relations that enable or constrain actions performed in the search for knowledge, and, next, in attempting to acquire, transfer or create it. In this way theories related to both technology management and social capital can be interlocked. Needless to say, this is considered as being a very valuable outcome (Fleming, and Waguespack, 2007). What is more, observations on the economic reality that is changing as regional development occurs may suggest that when analysed in the specific context of the regional innovative environment, these

problems need to have even wider reference in the literature on territorial innovation models. Here it can be observed the shift in a way in which motives for taking part in networks are considered. Instead of approaching them from the point of view of optimal cost-benefits analysis, the importance of applying collective, experimental and problem-solving processes begins to be emphasized. Among factors included in this group, there are, e. g. profiting from technological complementarities, monitoring technological developments and opportunities, exploration of new markets and market niches or technology transfer (Oerlemans, Meeus and Kenis, 2007, p. 161).

When the open innovation model becomes popularized among different kinds of organizations in the world, skills hitherto developed by companies, their suppliers, customers as well as other entities in regions, may turn out to be insufficient. In order to be competitive they need to acquire new skills. Indeed, they need to be able to make use of knowledge resources possessed by other organizations. At the same time, other organizations can attach great significance to whether the given organization is willing to make own knowledge resources accessible to others.

Obviously, in order to achieve such goals it is necessary to overcome many potential obstacles associated with technical or social aspects. Nevertheless, the fact that open innovation models become to be commonly known (Debackere, 2014) brings about a situation in that much effort will be put into just overcoming them. The widespread understanding of the kind of advantages that can be derived from joint work on knowledge creation has ensured that more organizations will be trying to look for new opportunities for solving together the problems that they have in common with other organizations.

The question that arises at this point is who and how can organizations be supported in this field. That is why the topic related to activities undertaken by different intermediary organizations (knowledge-brokers) appears to be worth being explored. Their presence in the region should give chances for knowledge flows to be intensified. The task for researchers is to understand how these organizations operate.

2. Theoretical background

Following above-mentioned approach adopted by Wadhwa et al. (2012), Dagnino et al. (2015) showed that depending on the approach adopted by researchers, the main focus of the research may be directed at prehension of knowledge transferring and sharing actors' goals and processes, or researchers may be more concentrated on understanding the knowledge creation goals and processes.

In general, knowledge transfer is considered as a precondition for knowledge creation (Arikan, 2009; Camuffo, and Grandinetti, 2011 – theoretical models; Sivakumar, 2018 – researches). Actually it is claimed that, based on the widely popularized SECI model, users create knowledge when they practice, interact and learn. Hence, knowledge creation is about continuous transfer, combination and conversion of different types of knowledge (Sivakumar, 2018, p. 30). As a result, it appears to be advisable to take into account both aspects. Knowledge transfer and creation processes are connected with each other, as the former determines the efficacy of the latter (Sivakumar, 2018). This is quite well visible when paying attention to changes in the models of activities that concern different kinds of intermediary organizations whose aim is to cause organizations to build relations with each other.

One of the conclusions drawn based on bibliometric investigation prepared by Dagnino et al. (2015) is just that special emphasis should be offered to the role of universities and public science centres within an innovation network. The role of national and regional research systems in explaining the performance of innovative interorganizational networks is described as an intriguing area that probably should be investigated further. Firms that operate within a network should be able to exploit, among others, the knowledge that circulates through this network. However, it is claimed that there are performance differences between firms due to asymmetries in accessing, assimilating and applying new knowledge (Dagnino et al., 2015, pp. 370, 371).

An imperative for small and medium-sized enterprises is to develop formal, systematic, multidisciplinary and creative knowledge related to the external environment (Hossain, Kauranen, 2015, p. 65; Bocken et al., 2014). But for some enterprises it may be even difficult to link with others (RIS, 2019). This can be perceived as the first reason for the investment in so-called knowledge-brokers.

In practice, situations can be observed when knowledge-brokers are focused only on making it possible for other organizations to establish connections. While at other times, they may try to help in maintaining such contact. They also may actively engage in helping others to build long-lasting relations (Obstfeld, 2005; Lingo, and O'Mahony, 2010). Consequently, the role played by knowledge-brokers during the knowledge transfer process when they may help others in translating knowledge coming from outside is often emphasized (Kauffeld-Monz, and Fritsch, 2013). It often happens that many SMEs may access external sources of knowledge only with the help of actors that are well linked to global knowledge sources, so that they are able to translate technical information into a form that it is possible for local organizations to understand (Kauffeld-Monz, and Fritsch, 2013, p. 673; Cohen and Levinthal, 1990). This can be considered as next reason for the investment in developing the activities of knowledge-brokers.

What is more, nowadays, firms should try to make their technology-based needs desirable to complementary organizations (Hossain, and Kauranen, 2015, p. 65; Christensen et al., 2005). Consequently, it cannot be surprising that it is emphasized that there is a transformation of how the role of technology transfer offices is perceived. Services provided by knowledge-transfer

offices should involve engagement in different co-creation mechanisms with business, social institutions, governments and citizens. It is worth emphasizing that the development of knowledge-transfer offices with the aim of supporting knowledge co-creation that has replaced the tasks of simply transferring technologies is accompanied by the transformation of the role of academics, as well as the innovation process. While being providers of knowledge, academics are expected to become co-creators of knowledge. The transformation of the innovation process that takes place brings about a situation where system models are built, instead of linear ones (Debackere, 2014, pp. 48-49). In this way, the third reason why knowledge-brokers are really important emerges.

In order to have a broader view on the role played by knowledge-brokers it is worth mentioning the arguments presented by Cvitanovic et al. (2015), who discuss innovative and collaborative approaches to knowledge exchanges. Among the identified and developed, they pay attention to exactly four different forms: co-production, embedding, knowledge-broker and boundary-spanner.

According to their classification, co-production involves the active participation of managers in scientific research programs.

Embedding, like co-production, is a solution that should make it easier to improve knowledge exchange. It can be claimed here that scientists who are permanently embedded within organizations ensure that the likelihood of reduction of knowledge gaps is enhanced. Embedding is quite similar to co-production, but probably allows for more detailed information to be acquired.

Knowledge-broker and boundary-spanner are different. These are both separate units. Herein, boundary-spanner organizations are expected to facilitate communication and knowledge exchange among diverse networks of stakeholders. It is recognized that it is possible to unite groups among which relations could be even strained, e. g. between scientists and decision-makers, if a neutral third party is involved. Enhancing evidence-based decision-making should be possible due to the fact that being not embedded in any kind of organization, they may be able to represent both sides across the boundary more effectively (Cvitanovic et al., 2015, p. 29; Guston, 2001).

In contrast, in order for the knowledge-broker to be able to influence positively opportunities to exchange knowledge, they need to be embedded within research teams or institutions. They may then act as intermediaries and facilitate the exchange of knowledge among the network that is built through developing relationships and networks with, among and between producers and policy-makers.

However, it may be controversial to claim that there is just one exact role and function of knowledge-broker and boundary-spanner. As it has been claimed in the approach presented in this paper, it is quite evident that knowledge-brokers, apart from being the node through which knowledge is transferred, can also both link and develop shared knowledge. By making use of the proposed terminology we can say that they begin to co-produce. The question is also whether it is possible for those organizations to facilitate the exchange of knowledge among

various stakeholders such as researchers, practitioners and policy-makers without actively taking part in the co-production of solutions. That means that when embedding within an organizational boundary due to the increasing level of complexity of problems that are to be solved (Camuffo, and Grandinetti, 2011), people engaged in knowledge transfer may also become a source of important knowledge. That is why organizational memory and retention structures are so important – according to the literature on open innovation models (Lichtenthaler, 2011).

One of those structures can be social relationships. This underlines why in considering the discussed problems related to regional innovation, networks are a valuable idea. Generally, regional innovation networks is the mortar that holds together cohesive elements such as human capital, regional institutions, infrastructure, educational and regulatory institutes, quality of production factors and systems, innovation and learning (Oerlemans, Meeus, and Kenis, 2007, p. 161, Moulaert, and Sekia, 2003).

As a result of more detailed analysis of current literature, the author of this paper has formulated a research problem in the analysis of models of activities of knowledge-brokers, as well as the exploration of emerging types of models of activities. The posed research questions are as follows: (1) “How do knowledge resources possessed by knowledge-brokers enable the building of connections and networks so as to influence the cooperation of knowledge-brokers with their partners?”; (2) “Why do activities undertaken by knowledge-brokers that involve the creation of the resources, as well as shaping the portfolio of their relations, contribute to knowledge flows or exchanges and knowledge creation in such a way that positive effects to cooperating organizations and regional bodies appear?”.

As it can be inferred, the assumption here is that knowledge-brokers may only initiate a cooperation that entails knowledge flows, exchanges and creations or, alternatively, they may actively take part in it as well. The processes of knowledge flows, exchanges and creations are all influenced by the held resources of knowledge-brokers and by the way in which they prefer to build networks. Both research problem and research questions implied the need of conducting research, the details of which are given in the next section.

3. Methods

The multiple-case study method was applied to reveal how knowledge-brokers make use of their knowledge, relations and networks to cooperate with partners that may derive advantages from such cooperation and which may also result in regional development. According to Dul and Hak, this method is especially useful when the topic is complex, and when great importance is attached to the context within which the phenomenon under study takes place (Dul, Hak, 2008). Put it differently, it is also claimed that the method is recommended each time the boundaries between the phenomenon and its context are not completely clear (Yin, 2015).

Here, the activities of knowledge-brokers focused on knowledge flows, knowledge exchanges and knowledge creation, as well as their determinants are taken into account. The objective scope of research is actually defined as ascertaining the models of activities of knowledge-brokers. Therefore, each of the seven cases is focused on a given knowledge-broker who undertakes activities involving knowledge transfer and knowledge creation.

As a knowledge-broker, the case study subject should be able to actively influence his/her environment and build relations with the different kinds of partners that operate in Silesia Voivodeship, as well as beyond its boundaries. When defining the case in this way, it becomes possible to take into account the units of analysis that are indispensable in order to understand the challenges that knowledge-brokers need to deal with on daily basis. It should be emphasized that knowledge-brokers are taken as the point of reference in order to define the objective scope of research.

The spatial scope of research covers Slaskie Voivodeship. The first observations related to the research topic took place actually in 2011. But interviews according to purposive sampling were performed from March 2018 to November 2018. The knowledge-brokers selected for the study are mostly from the business environment (Bąkowski, Mażewska, 2018) some are from elsewhere, but the uniting element is their interest in regional development. The type of respondents who were accepted for the study convinced the author that the collected data is reliable. Deep interviews with people representing chosen intermediary organizations served as a major source of data. In order to prepare for this, the author undertook an analysis of secondary sources of data. The information published on the Internet or from accessed documentaries allowed the author to ensure that triangulation of methods and sources of data were taken into account.

It is worth adding that the data were gathered and analysed during two phases. Between them the first comparative analysis of cases was performed. The second phase allowed the author to complete data that was lacking in order to rest assure that hitherto interpretations can be considered as being correct. In order to deal with many pieces of information and data, the author made use of tools like matrices, as well as causal networks.

To avoid too much complexity in causal networks, they were supported by codes of patterns and matrices. Three kinds of matrices were made use of: (1) matrix – control list, (2) matrix of effects, (3) matrix of the dynamism of a case. Matrices allowed the author to plan the ways in which the data would be analysed, and, at the same time, the problem of gathering too much data was eliminated. Causal networks actually are abstracted, inferred schemes that allows researchers to organize their data in a coherent way. What is important, in order to prepare useful causal networks, it is required that the adoption of the level of analysis is made in order for it to be more related to the inference process. As a consequence, the data are combined in a coherent representation (Miles, Huberman, 2000, pp. 156, 165).

Finally, the performed analysis allowed the author to distinguish three main categories: the held competence to synthesize knowledge, the organization and its environment as organic multilayer networks of contexts, and the social capital in region.

4. Results

Having analysed each case individually, the author began to compare the cases among themselves. The three defined main categories as mentioned before allowed the author to propose a set of dimensions that were taken into account when comparing cases. Next, all of them were translated into three approaches that in following the main categories are important from both the point of view of conducted research and in actually being testable in the future in order to establish which propositions can supplement them. Regarding space limits, here, these dimensions are not be discussed, but include: openness to the environment and its co-creation, attention paid to local channels of knowledge and contribution to its development, introduction of new practices and abandonment of old ones, aspirations for making use of current events, trends to design possible future states of reality and organizational behaviour, the importance of the environment and regional benefits.

It should be noted that the theoretical foundations when searching for these dimensions were literature regarding knowledge management issues, regional development and social capital. Issues discussed by Nonaka et al. were especially inspirational (e.g. Nonaka, Kodama, Hirose, Kohlbacher, 2014; Nonaka, Toyama, 2005).

To sum up, having taken into account all dimensions and having defined all three categories, it is possible to say that in order to distinguish the types of models of activities one should focus on approaches that knowledge-brokers have towards knowledge, networks, as well as towards regional development. The proposed three types of models of knowledge-brokers are presented in Table 1.

Table 1.

Types of models of activities of investigated knowledge brokers

Type of the model/case number included	Approach to knowledge transfer, exploitation and creation (KTAC)	Approach to the building of relations/networks (BRN)	Approach to regional development (RD)
1/cases I, III	***	*	**
2/cases II, V	**	***	*
3/cases IV, VI, VII	*	**	***

Source: Author's own work. The assumption is that more "*" means gradual movement in knowledge-broker behaviour as follows: in the KTAC case, it means that the knowledge-broker not only engages in transferring information, but also tries to co-create solutions; in the BRN case, it means that the knowledge-broker not only builds local cohesive networks, but also maintains more open non-local network relations; in the RD case, it means that the knowledge-broker not only sets goals regarding the results achieved by that knowledge-broker and cooperating organizations, but also takes into account regional aspects such as, e. g. the economic development, employment or standard of living of local communities. The table is illustrative of some tendencies and does not suggest that, e.g. the knowledge-broker focused on open non-local networking does not take part at all in more local closed counterparts.

Depending on the type of adopted model of activities, knowledge-brokers can support organizations in the field of knowledge translation in situations of high levels of complexity. In addition to this, knowledge-brokers can be more or less interested in how they impact on regional development. Networks that are built by them also may be more or less open to other

organizations that would like to cooperate. That is why it is worth focussing on the elements of the models of activities of knowledge brokers that are especially important to each of those types. Additionally, some propositions of changes in the models of activities should be presented. Regarding the fact that the context is important, it would be advisable to concentrate on local authorities, as well as on the science sector.

5. Discussion

Similarly to the widely described knowledge intensive business services, two knowledge-brokers that represent the first type of model are actually an important source of information for their cooperating organizations. Hence, regarding the first analysed approach (KTAC in Table 1), one may claim that the expectations of organizations that cooperate with them are aimed at joint work on relatively well defined problems, which, on occasion are subject to flows of highly, complex knowledge. In order for knowledge-brokers and cooperating organizations to find solutions to the occasional complex dilemma that is thrown up, it is indispensable to look for non-local knowledge. The knowledge-broker is also expected to participate actively to implement knowledge, which is why the need for building absorptive capacity is clear. The question is whether the possession of knowledge about relatively broad fields of knowledge leads to a greater competence on the field of building knowledge resources. Due to the fact that reciprocity is being emphasized, it may be claimed that high competences make it possible to maintain a wide range of non-local relations.

Regarding the second analysed approach (BRN in Table 1), it is worth noticing that the time-span for the cooperation is rather long. However, this may entail the willingness of the knowledge-brokers to be in favour of closed networks, even if it may be more reasonable to make use of the distinctive capabilities possessed by different organizations. The high competences possessed by this kind of knowledge-broker induces a decision to be selective in choosing cooperating organizations. Still, as a result of cooperation with knowledge-brokers whose models of activities is classified as BRN, the most important advantages that some cooperating organizations can derive is access to up-to-date research results.

In assessing the third analysed approach (RD in Table 1), it is important to take into account that the way in which networks are built results in that the potential of regional networks to disseminate knowledge and information in wider social groups many not be fully exploited. It appears that RD types communicate more freely with some agencies and not others. Yet, apart from fostering the viability of local networks, RD types may open new opportunities for the region as a whole.

The first two types of model activity as undertaken by KTAC and BRN types of knowledge-brokers are aimed at making connections with partners with precisely defined characteristics. To a less extent, this includes taking part in solving problems when there is active cooperation with partners. In general, these model behaviours are less interested in generating cooperation between organizations rather the hope is that they self-connect. At the same time, it is worth mentioning under these two forms of modelling, knowledge-brokers try to prepare their clients before they begin a cooperation with other organizations. This may involve activities like the assessment of innovative potential of their partners, consulting services as to how business models should be established or explaining how to be understandable to potential partners. What is more, knowledge brokers realising these model types are expected to enable their partners' active participation in fairs, as well as in industrial conferences. This is because these situations provide lots of opportunities to communicate with other potentially valuable partners.

With respect to RD knowledge-brokers, and these two model forms, it appears to be justified to claim that even though at least some of their clients come from the local region, they are more strongly focused on looking for foreign partners, hence, they are less interested in regional affairs. However, because of the barriers that emerge when undertaking international activity or trying to acquire solutions proposed by the science sector, these knowledge-brokers when following these model forms, should be able to exchange knowledge with even more intensity among workers and among workers and organizations outside their organizations.

Concerning BRN partners that decide on cooperating with knowledge-broker following these types of model forms, they may rely on gaining valuable information and knowledge at national and international level. Being embedded in well-established networks, these knowledge-brokers are able to provide their partners with plenty of current information as to what is going on. Hence, in working with BRN types, it would be well worth engaging more intensively not only in forging a partnerships among partners, but also during the next stage when coordination is necessary.

Those organizations that together are considered as representing the third type of model, aim at being mainly a kind of integration platform. As to KTAC, it can be said that these knowledge-brokers are more interested in spreading information and news that could be important inputs in the decision-making process of organizations. However, it may sometimes happen that more active cooperation occurs in the form of some basic development work or in attempts to lobby for decisions at the local level or going into details of entrepreneurial views and consequently creating a suitable environment based on them. Among such knowledge-brokers, there is concern about the need to spread information within the region. They struggle to enrich regional collective knowledge with valuable information that otherwise cannot be gathered by regional actors. Regarding RD and this form of model, it must be noticed that what all those knowledge-brokers have in common is a strong concentration on the local aspect including, e.g. the standard of living. It can thus be inferred that it is especially important for those knowledge-brokers working under these model guidelines to be open to the cooperation

with entrepreneurs who are setting up their businesses and who need to integrate with knowledge-holders to make their business viable.

With respect to BRN, it should be claimed that when pointing to the responsible role played by these knowledge-brokers, there actually are some additional expectations as to the ways of protecting the flow of information and knowledge. What is important, they normally act in accordance with habitual rules of operating that are respected by entrepreneurs in the region. In order to build even stronger regional social capital, they try to accomplish this mission, e.g., by organizing free conferences or other events that apart from enabling partners to spreading information and knowledge, foster regional connectedness. Needless to say, such a network may constitute a form of group lobbying for adopting some solutions advantageous with regard to regional development. The knowledge-brokers under scrutiny are also commonly interested in the international aspects that help them in collecting information important from the point of view of their partners. International engagement for such knowledge-brokers should be perceived as being really helpful with regard to fostering regional development. Additionally, each described knowledge-broker makes the attempt to maintain amicable relations with local governments in order to strengthen their position in the region. The activities that are undertaken to enhance scope of their operations that enable cooperating organizations to gain valuable contacts outside the region appears to be an important path of future development, taking into account their limited resources.

In view of the previous, a set of recommendations directed at local and national authorities, the science sector, and enterprises and entrepreneurs can be prepared. Suggested solutions to be put into practice in the future should be considered as a part of the implemented system solution that is aimed at improving learning processes in the region. It should be taken into account that in order for a region to be considered as being a learning region, it is necessary that mutually advantageous cooperation and coordination among regional actors can be considered as a coherent system. With regard to local and national authority, it is important to claim that they not only should focus on what has already been stated in different documents. Obviously, for example, the introduction of a set of incentives as well as some requirements that all may lead to the increase in the level of territorial embeddedness of foreign investors is a postulate that should be raised.

Similarly, activities involving the preparation of documents that define goals on local and national level should be pursued, being supplemented with more detailed proposals. Apart from this, the conducted research allows the author to propose some further steps in the field of activization of regional actors.

Local authorities need to help those actors in exchanging qualitative information. More meetings, as well as discussions should take place that cause knowledge-brokers to reveal common problems. In this way, opportunities to undertake common efforts may emerge. These could be aimed at gaining financial resources that may enable knowledge-brokers to become members of international networks where they can meet other organizations similar to

them. In actuality, knowledge brokers may take advantage of these resources in order to lobby for changes in how to propose the spending of scarce financial resources on different kind of projects. Herein, that allowing for more intense interregional cooperation can gain importance. As a result, more opportunities for cooperation among knowledge-brokers is equal to proffering better conditions for creating business chances for entrepreneurs or in improving the situation of universities in the region. Having experienced indirect advantages derived from activities undertaken by knowledge brokers, universities may become more willing to overcome hitherto established barriers between science and economy. There are also some ideas how entrepreneurs can be engaged more intensively in cooperation. As researches show, they might be unsure whether it is worth engaging in cooperation due to the fact that they do not know enough about competences possessed by knowledge-brokers. It might be that they have been making decisions on whether to cooperate based on some negative experiences from the distant past. Other sets of reasons relate to the lack of resources among entrepreneurs in spite of the fact that at least some knowledge-brokers are willing to cooperate with partners regardless of their resources. Possibly tightened cooperation of knowledge-brokers with local authorities can lead to entrepreneurs having more exact information about knowledge-brokers. Consequently, making decisions on cooperation should become much more easier.

6. Summary

The conducted research allows the author to indicate the key dimensions that may be used when discussing the issues related to knowledge-brokers. Grouped together, they resulted in three main categories (ability to synthesize knowledge, multilayer organic network of Ba, social capital in region) that having been translated in forms more useful regarding regional innovation policy are shown in Table 1. It is worth saying that relations that emerge gives a lot of possibilities to ask more questions. One can notice that the pursuit to co-creating knowledge of highest level of complexity is often accompanied by the willingness to invest in dyadic relations or rather closed networks comprised of limited number of participants. As it has been claimed, due to the amount of time and attention that must be then devoted, it is quite understandable. However, it is not optimal regarding the intensification of knowledge flows in regional networks. Moreover, it can be stressed that knowledge-brokers that aim at connecting themselves with different cooperating organizations possessing defined features and often coming from distant parts of the world, to a less extent, are interested in how the effects of their work impact on regional affairs. However, a strong focus on regional development is connections with engagement in social projects that allows for achieving results that are for the benefit of people. The local dimension, then, makes it possible to contribute to building networks in a rather unstructured way. However, in such cases, the specificity of undertaken

initiatives does not appear to result in the engagement of knowledge-brokers and their partners in joint preparations of new products or business models.

Taking all into consideration, it can be said that the proposition to distinguish three types of models of activities of knowledge-brokers proves that both the kind of flowing knowledge and the approach to transform it resulting from resources possessed by knowledge-brokers can be considered as the first set of factors that are decisive with regarding how knowledge-brokers work. In addition to this, one should take into account the ways in which knowledge-brokers build networks in which other organizations can participate. What is more, by having suitable approaches towards the region they may contribute to better performance of their partners, as well as to regional development in a more or less direct way.

Finally, it is worth outlining some promising paths of future investigations that may be followed especially when more resources can be invested in the research. Firstly, it would be worth doing to analyse in a more detailed way effects to local environment that are caused by knowledge-brokers. Opinions among those directly engaged should then be collected. Moreover, even views held by local inhabitants who may be more or less interested in local development can be taken into account. Secondly, some further research would be needed in order to supplement our knowledge related to risk-taking and risk-avoiding behaviours that may prevent knowledge-brokers from achieving the most viable results. Thirdly, issues related to why knowledge-brokers measure or do not measure their effectiveness and efficiency should be researched more thoroughly. Fourthly, further questions regarding competences that are necessary to cooperate with different partners and differences among them could be posed. Factors like strategies of companies or an intensity of clustering in the region can have an impact here. It should be emphasized that both theoretical challenges, as well as those related to everyday life decide on the attractiveness of the topic.

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