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PROJECT ORIENTATION AND INNOVATIVENESS WITHIN KNOWLEDGE-INTENSIVE BUSINESS SERVICES IN CENTRAL AND EASTERN EUROPE

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Purpose: This paper investigates how project-oriented structures enhance organizational innovativeness in technology-based, knowledge-intensive business service (T-KIBS) firms in Central and Eastern Europe (CEE). By focusing on how and why project orientation stimulates innovation, the study addresses a gap in project theory within innovation research.
Design/methodology/approach: A qualitative approach was adopted, involving 22 semi-structured interviews with senior management, project leaders, and innovation managers in T-KIBS companies operating in CEE. Data were collected during the third and fourth quarters of 2018 and analyzed using both categorization and thematic analysis.
Findings: Results indicate a positive association between project orientation and higher levels of innovativeness, driven by four distinguishing project characteristics: uniqueness, autonomy, co-production, and transcendence. The study proposes a conceptual model that identifies 13 potential moderators of this relationship, including management support, leadership style, strategic planning, control mechanisms, employee competences, cross-functional teams, staff engagement, client involvement, inter-project collaboration, internal reporting systems, accessible information, risk tolerance, and an overall willingness to innovate.
Originality/value: This research advances both project management and innovation theory by introducing a framework that connects project-based organizing with firm-level innovativeness in the T-KIBS sector. From a theoretical perspective, the findings highlight the significance of industry-specific contexts, suggesting that unique sectoral conditions can shape project management practices and, in turn, drive innovation outcomes.
Keywords: project, project-based organisation, innovativeness, KIBS.
Category of the paper: Research paper.

1. Introduction

The art of innovation soars to new heights. As much as innovation is indispensable for survival on the market, new ways of obtaining it are challenging for companies (Szutowski, 2018). Both innovation and new work organisation practices are omnipresent in dynamic business environment (Lundin et al., 2015). The rising popularity of projects as a means of

organising work spreads smoothly to the field of innovation management. One implication of this trend is that more innovation – and thus, more value – is created by projects (Schoper, Gemünden, Nguyen, 2016).

Evidence supports the transition from traditional organizational structures to more project-oriented ones (Wald, Schneider, Spanuth, Schoper, 2015). In the context of a single firm, such transition results in increased chances for innovation success, which in turn positively affects overall business performance. However, this relationship is complex and requires further studies in different settings. In this vein, this study relates to the stream of research on "the most advisable management practices in KIBS to foster innovation and improved performance" (Santos-Vijande, Gonzalez-Mieres, Lopez-Sanchez, 2013). Although project orientation is known to contribute to potential success of innovation development, the causal mechanism behind this remains largely uncharted. Some companies are able to benefit from increasing project intensity, while others fail to exploit project orientation. In this regard, the present study addresses the following research question: how and why project orientation contributes to higher innovativeness?

This study is based on the argument that project orientation improves the overall innovativeness of a company, by forcing a decomposition of processes, which then facilitates their management and allows the improvement of efficiency at each stage of the project. Its purpose is to identify and describe the mechanisms which allow companies to benefit from project-based organisation in terms of innovation. The study was performed in the context of technology-based knowledge-intensive business services (T-KIBS). Its spatial scope encompasses companies operating in Central and Eastern Europe. The theoretical contribution of the study consists in constructing model representation and proposing an analytical framework depicting the relationship between project orientation and T-KIBS innovativeness. The moderators proposed in this study derived from the determination of the main themes concerning project-based organisation and grouping them into categories that are key in increasing company innovativeness. Also, it exploits the niche of project-based organisation in T-KIBS, which is a largely unstudied field. Therefore, the study adds to literature on project management, innovation and T-KIBS management.

Previous scientific investigations in project management literature targeted firms offering complex products and services. Such companies are organised around key projects which are often highly individualised (Turner, Keegan, 2001). The scientific community has already produced some evidence suggesting how highly innovative projects and project portfolios should be organised, but the present study is the first attempt to include the specificity of T-KIBS operating in CEE. To date, the author has not identified any research directly addressing the link between project-based organisation and innovativeness in T-KIBS.

In order to fill the research gap, the present empirical investigation relied on qualitative methods. It employed semi-structured interviews with senior management staff, project leaders, and innovation managers in T-KIBS companies operating in Central and Eastern Europe.

On the one hand, it relies on the opinion the best-informed individuals, on the other, it solely presents the managerial perspective. Qualitative methods were selected due to the re-confirmatory character of the study focused on finding the specificity of the particular context of T-KIBS. The studied T-KIBS enterprises operated in the fields of data processing, R&D in natural sciences and engineering, and technical testing and analysis. The time frame comprised the third and fourth quarters of 2018. The sample consisted of 22 respondents in 12 companies.

The study provided evidence supporting a positive relationship between project-based organisation and innovativeness in the context of T-KIBS. It indicated, however, that the mechanism behind the increased innovativeness associated with project-based organisation is not a simple one, and the relationship is far from straightforward. It introduced an analytical framework composed of six categories, within which 13 potential moderators are clustered, including: administration (management support and project leader), management control (planning and controlling), staff (employee competences and multidisciplinary teams), interactions (with staff, with clients, and between projects), information (internal reporting and information availability) and attitudes (risk appetite and willingness to innovate). Within this context, the present study contributed to the theoretical foundation of innovation within literature on project orientation by introducing the decomposition of project-based organisation, which increases the explanatory power of work organisation type with regard to company innovativeness.

The paper is structured as follows. First, the concepts of a project-oriented company, project orientation and innovativeness, and innovativeness in T-KIBS are discussed. Second, the details of the empirical part are presented. Finally, the results are provided and discussed. The study terminates with conclusions.

2. Conceptual background

2.1. Project-oriented company

The conceptualisation of a project within the project theory boils down to the "transformation of inputs to outputs" (Koskela, Howell, 2002, p. 3). The principles for managing projects include e.g. the decomposition of the process into smaller tasks, each of which is then managed separately to increase the overall effectiveness of the process (Project Management Institute, 2000). Numerous attempts have been made to conceptualise a project-oriented company. The first date back to the late 1980s. Project-oriented companies were characterised as performing: "the management of single projects, the management of the network of projects, and the management of the relationships between the company and the

single projects" (Gareis 1989, p. 243). In the 2000s, the notion of "management by project" emerged and was incorporated into the definition: "a Project-oriented Organisation is an organisation, which defines 'Management by Projects' as an organisational strategy, applies temporary organisations for the performance of complex processes, manages a project portfolio of different project types, has specific permanent organisations to provide integrative functions, applies a 'New Management Paradigm', has an explicit project management culture, and perceives itself as project-oriented" (Gareis, Huemann, 2000, p. 709). Project-oriented organisation entails fostering decentralisation of management responsibilities and organisational differentiation, personnel development through consecutive projects, and consequently, company innovativeness. This novel approach to project management encompasses all industries and sectors and all kinds of internal and external projects – from small to mega-sized (Huemann, 2015). According to Huemann (2015), the principal objective of project management as understood today is to establish a mode of organizing for organizations, industries, and societies.

It appears that what is key to defining project-oriented organisations is their conscious decision to pursue a project-oriented work organisation, which translates into setting up a temporary work organisation to fulfil tasks, rather than delivering the end product as a project-work (Gemunden, Lehner, Kock, 2018). According to Turner and Keegan (2001), companies may provide their services to many other companies, and may thus perform numerous projects simultaneously. This stimulates the development of new products and services, and shapes future offerings. Consequently, the competitive position of the organisation improves. In contrast to the above approaches, the one proposed by Hobday relies on a company delivering a single project to a key client at a single time. According to Hobday, "it is able to cope with emerging properties in production and respond flexibly to changing client needs. It is also effective at integrating different types of knowledge and skill and coping with the project risks and uncertainties" (2000, p. 871). Such a definition applies to organisations offering complex products, i.e. ones enabled by new technologies or offering new functionalities. In these cases, each product or service delivery is treated individually, and the internal organisational structure is adapted accordingly. In this organisational structure, innovation has the necessary space to emerge (Davies & Hobday, 2005). However, for the development of a successful innovation, both the client and the supplier must share the willingness to achieve/benefit from the high degree of innovativeness and to establish clear reciprocal communication.

The potential issue lies within the supplier organisation, as following short-term goals may reduce the incentive to innovate (Winch, 2014; Winch, Leiringer, 2016). Thus, shifting to project-oriented organisation does not translate automatically to the exploitation of innovation opportunities. Hence the critical role of mutual understanding and learning, which alleviates the risk of unsuccessful new product/service development. A new product/service offering requires setting a single goal (Whitley 2006). A major drawback of the concept developed by Hobday is that the new product/service is delivered to a single customer, and each time a new

client appears, the company needs to adapt again. However, it appears reasonable to assume that the smaller the complexity of the new product/service, the higher the repeatability. Numerous examples from business practice show that complex projects aimed at the development or improvement of products and services lead not only to their offering to a single client, but also to multiple subsequent ones (Gemunden et al., 2018).

2.2. Project orientation and innovativeness

Several attempts have been made to conceptualise the link between project orientation and innovativeness. The notion is understood as organising a considerable part of company's processes and activities in the form of projects, and the second one is perceived as the ability to engage in and support new ideas, novelty, experimentation, and creative processes that may result in new products, services, or technological processes (Lumpkin, Dess, 1996). A company's strategic choice to introduce project-based organisation appears to prompt innovativeness, as the work time spent on projects positively correlates with innovation success within the company, which in turn positively correlates with business success (Wald, Spanuth, Schneider, Futterer, Schnellbächer, 2015). Interestingly, in the same study, no positive correlation was observed between work time spent on projects and business success. One of the reasons for such observation is that companies differ in their approach to projects. While some companies employ them to develop innovation, others do not use them for this purpose. As a general rule, innovativeness is usually not fully triggered when project orientation is introduced in service firms. R&D projects are rare in service-oriented sectors (10%) while being twice as important in the manufacturing industry (22%) (Schoper, Wald, Ingason, Fridgeirsson, 2018). Importantly, not all studies support the positive link between project orientation and innovativeness. An opposite observation is presented by Keegan and Turner (2002), who found that business project introduction created an unfavourable setting for innovation development, since the processes implemented within business project management were too rigid for innovation.

Based on these considerations, scientific attempts to schematise the relationship between project orientation and innovativeness were undertaken. The most influential work to date seems to be that by Gemunden, Lehner and Kock (2018), who proposed a conceptual model of the project-oriented organisation including: (1) structures – organisation, planning and controlling, and ICT-systems; (2) people – knowledge management, competence development, and teamwork leadership; and (3) values – future orientation, entrepreneurial orientation, and stakeholder orientation. Such an analytical structure captures some important areas from the innovation management perspective. However, this conceptual model has not been empirically validated. According to the author's best knowledge, to date, there have been no empirical attempts to link project orientation and innovativeness in service companies in any systematic way.

At the same time, evidence concerning the relationship between project orientation and innovativeness suggests the crucial role of budget in prompting innovativeness through the implementation of project orientation. Namely, if a specific budget is reserved for highly innovative projects, they only need to compete for resources between one another. This way, the risk of current business projects consuming all the available resources is mitigated. Also, if projects are to produce innovative outcomes, they require a fair amount of autonomy, as rigid management schemes tend to undermine creativity (Gemünden, Salomo, Krieger, 2005). Such autonomy should be guaranteed by power promotors, process promotors, and expert promotors, all acting in favour of innovation (Mansfeld, Hölzle, Gemünden, 2010; Rese, Baier, Gemünden, 2013; Rost, Hölzle, Gemünden, 2007).

2.3. Innovativeness in KIBS

Services that largely rely on professional knowledge are commonly referred to as knowledge-intensive business services (KIBS). Most companies delivering knowledge-intensive services operate on the B2B market, where the co-production of the service along with the client is a common phenomenon. The heterogenous nature of KIBS led to the distinction of T-KIBS and P-KIBS (Nählinder, 2005). The former stands for "technology-based KIBS" (e.g. hardware consultancy, software consultancy and supply, data processing, database activities, R&D in natural sciences and engineering, architectural and engineering activities and related technical consultancy, technical testing and analysis). P-KIBS on the other hand stands for "professional KIBS" (e.g. R&D in social sciences and humanities, legal activities, accounting, bookkeeping and auditing activities, tax consultancy, market research and public opinion polling, business and management consultancy activities, advertising, labour recruitment and provision of personnel, and other business activities).

Existing evidence suggests that KIBS have specific features related to innovation, such as undertaking typically informal and highly iterative innovation activities. Despite having formal development projects, which resemble those found in the manufacturing sector, a fair amount of innovation activities is employee-driven and happens outside of the formal setting (Heusinkveld, Benders, 2002). Furthermore, such companies may launch yet incomplete concepts to the market, and further advance the innovation development process iteratively with the actual service delivery (Heusinkveld, Benders, 2002; Toivonen, Tuominen, Brax, 2007; Toivonen, Tuominen, 2009). Besides, KIBS are often successful incubators for "ad hoc innovations", developed within the customer interface while providing a specific tailor-made solution. All of the above makes identifying and replicating innovation processes especially challenging (Gallouj, 2002). The above characteristics may be observed to some extent in all service companies, but it is within KIBS that they gain full prominence, due to the complex character of customer issues.

Lundvall and Borrás (1997) attempted to identify the characteristics of KIBS that make them especially innovative. The authors pointed to (1) often decentralised, project-based and flexible organisation, (2) special attention paid to learning, human resources management and recruitment, and (3) the extensive use of new technologies including IT and computer-based systems. Importantly for the present study, such characteristics have never been tested so far in the context of introducing a project-based organisation.

The issue of project orientation is hardly ever included in the analysis of innovativeness in KIBS. Despite failing to provide a comprehensive analytical framework for the link between project orientation and innovativeness in KIBS, the conclusions provided by previous empirical studies in the service sector include numerous valuable insights, including factors that are more important for new service development projects than for new product development projects: customer involvement (Bowen, Ford, 2002; de Jong, Bruins, Dolfsma, Meijaard, 2003); senior management support (Cooper 2001; De Brentani 2001), and synergy with the firm's current business (De Brentani, Ragot, 1996). Moreover, the development of innovation in project-based service companies could be very different from what is described in literature on new service development, mainly due to different capabilities and organisational structures compared to other service providers. First of all, project-oriented service firms often provide complex and unique services that entail a low-hierarchical organisational structure (Woodward, 1980). Second of all, in such companies, business projects tend to be more important compared to the functional organisation (Hobday, 2000). The organisation often relies on areas of expertise, making functional departments obsolete (Hobday, 2000). Finally, such companies have unique capabilities with regard to collaboration with customers and suppliers, internal collaboration, and project management (Toivonen, Tuominen, 2011). With respect to the above description of the specificity of service companies, including the distinctive characteristics of KIBS, the re-examination of the relationship between project orientation and innovativeness in this setting is of theoretical and practical importance.

3. Research methods

The re-confirmatory character of the study whose intent was to address specificity of T-KIBS, motivated the use of qualitative methods, which allow one to describe, understand, and interpret phenomena (Merriam, 2009). Moreover, the choice of qualitative methods seems appropriate, since the subject of the study is human behaviour in a dynamic environment. The empirical research was performed in the third and fourth quarters of 2018. It focused on T-KIBS companies that have introduced project-based organisation, and operate in the Central and Eastern Europe. The sample consisted of 22 respondents from 12 companies. The studied companies were based in Poland, Czech Republic, Slovakia, and Germany –

three in each country. The T-KIBS enterprises represented the industries of data processing (n = 2), R&D in natural sciences and engineering (n = 8), and technical testing and analysis (n = 2). Purposive sampling was primarily applied to recruit: senior management staff, project leaders, and innovation managers. The interviewees were selected through the analysis of companies' websites and publicly available documents. They were recruited based on their pre-assessed knowledge and experience in project management and innovation. In short, the study attempted to reach the individuals best informed with regard to the consequences of introducing project-based organisation in terms of innovativeness i.e., managers and project leaders disposing of strategic perspective in addition to the operational one, even though this caused the results to be a representation of a managerial viewpoint. Each potential respondent was invited – via phone and e-mail – to take part in a single interview. In order to obtain a comprehensive view on project-organisation and innovation, snowball sampling was used to complement purposive sampling. The recruited interviewees were asked to indicate additional participants among their associates. The interviews were carried out in English. While this strategy ensured access to individuals best informed about the studied phenomenon, it may also have introduced selection bias, as participants who were more interested or had more experiences with innovation and project-based work could have been more inclined to respond. Moreover, conducting the interviews in English could have introduced language-related biases, potentially favoring respondents who felt more comfortable with English and thus were more willing to participate. The characteristics of the interviewees and interviews are summarised in Table 1. Age and job experience are presented in years, the interview duration is given in minutes.

Table 1.
Interviewees' characteristics

No.	Age	Gender	Position	Experience	Industry	Interview duration	Sampling
1	43	M	Senior management	18	DP	29:12	P
2	27	M	Innovation manager	4	DP	27:35	P
3	33	M	Project leader	11	R&D	26:59	P
4	42	F	Innovation manager	16	R&D	31:53	P
5	32	M	Senior management	6	R&D	28:44	P
6	45	F	Senior management	23	R&D	27:12	P
7	32	M	Senior management	9	R&D	29:33	P
8	44	M	Project leader	19	R&D	30:12	P
9	47	F	Innovation manager	24	R&D	31:33	P
10	38	F	Senior management	10	R&D	27:34	P
11	51	M	Project leader	25	TTA	29:44	P
12	49	F	Project leader	25	TTA	27:12	P
13	37	M	Senior management	13	DP	26:51	S
14	35	M	Project leader	14	DP	28:27	S
15	50	M	Senior management	26	R&D	31:22	S
16	33	F	Project leader	11	R&D	30:32	S
17	41	M	Project leader	19	R&D	29:46	S
18	26	M	Project leader	3	R&D	28:51	S
19	36	F	Senior management	12	R&D	29:05	S

Cont. table 1.

20	39	F	Project leader	15	R&D	30:52	S
21	41	M	Senior management	18	TTA	27:03	S
22	33	M	Project manager	8	TTA	29:12	S

Note: M – male, F – female, DP – data processing, R&D – R&D in natural sciences and engineering, TTA – technical testing and analysis, P – purposeful sampling, S – snowball sampling.

Source: own work.

One of the two basic roles of the interviews was to enable an in-depth interpretation of previous findings (Flick, 2009). In line with the conceptual background presented previously, the study relied on semi-structured interviews. The interviewees were free to present their views, as all the questions were open-ended. The applied method was designed to identify and describe the mechanisms which allow the T-KIBS companies operating in CEE to benefit from project-based organisation in terms of innovation. The interviews were conducted by three researchers and recorded for further analysis. The protocol was verified in a field test prior to the study, in accordance with the methodology recommended in reference literature (Galletta, 2013). It was evaluated by a group of four scholars specialising in project management, who answered the questions and shared their insights on the potential improvement.

In line with the methodological recommendations, the semi-structured interview protocol covered six substantial questions, all of which allowed respondents to add their comments freely (Langridge, Hagger-Johnson, 2009). In line with the theoretical considerations presented within the conceptual background, the substantial questions referred to: (1) the relationship between project orientation and innovativeness, (2) the setting conducive to innovation within innovation projects and business projects, (3) favourable conditions for replicating successful innovation projects, (4) organisational and structural environment, including the level of decentralisation and flexibility of the organization, (5) human resources, including the importance of learning, human resources management and recruitment, and (6) technological environment, including the use of new technologies, such as IT and computer-based systems. In most cases, follow-up questions emerged spontaneously, concerning other elements and mechanisms (that allow the T-KIBS companies operating in CEE to benefit from project-based organisation in terms of innovation) discussed by the respondents. The protocol also included complementary questions concerning the respondents' age and experience.

The sample size was not determined a priori. In line with the methodological considerations, the aim of qualitative research is achieved when the gathered information thoroughly covers the issue of interest. The interviews lasted until the saturation point was reached (Baker, Edwards, 2012). Here, the first patterns were isolated within the first 12 interviews, and a comprehensive set of information was achieved within 22 interviews.

To ensure high quality of research, it is crucial to guarantee that it meets specific requirements (Golafshani, 2003; Ali, Yusof, 2011). To guarantee the objectivity of analysis, all interviews were recorded and the material was analysed separately by two researchers. Conclusions were formulated based on consensus between the researchers. Furthermore,

internal validity was assured by strict focus on the subject matter, i.e. the introduction of project-based organisation and company innovativeness, in the research protocol. External validity – proper coverage of the population of interest – was achieved by selection of the best-informed interviewees through an analysis of company websites and publicly available documents.

The data analysis process included both categorisation (Roulston, 2010) and thematic analysis (King, Horrocks, 2010). Thus, the two researchers first reviewed the recorded material independently to identify, define, and organize the themes that emerged from the data. Second, the researchers re-analysed the material to expand or cluster those themes and interpret their meaning. Third, they derived the key elements from the data set. The results are presented in the following section of the paper in accordance with the recommendations of Boyatzis (1998), who argued for a four-step presentation of each theme, including definition, description, exclusion, and example.

4. Results and discussion

All respondents have demonstrated a high level of dedication and professionalism by providing substantial answers to all of the questions asked. They confirmed that project orientation had been introduced in their companies (n = 22). Moreover, 20 respondents emphasized the role of innovation development, claiming it to be a "necessity" and "inseparable part" in all of the company's fields of activity, and stating that without innovation, "it would be impossible to follow the market demand" (respondent 2). Such a conclusion is very much in line with previous evidence on innovation (Szutowski 2016).

In relation to the research question, the results show that project orientation in T-KIBS enterprises may indeed lead to higher levels of innovativeness. While the issue is multidimensional, these results point several antecedents explaining why the relationship between project orientation and innovativeness existed. A key contribution of the research is therefore the identification and detailed discussion of four characteristics—uniqueness, autonomy, co-production, and transience—that shape the relationship between project orientation and innovativeness in T-KIBS enterprises.

Uniqueness – as described by the interviewees – stands for the individual character of each project and results from the increasingly dynamic and complex business settings, requiting specifically tailored solutions. A number of respondents (n = 16) pointed out this characteristic as one of the principal causes of innovativeness in T-KIBS. As expressed by the respondent 3: "creativity is a requirement, if in each project you are to come up with a different solution". Or in other terms: "even though some challenges tend to repeat themselves in the long run, each project is different and requires a dedicated, often newly developed, solution" (respondent 11). The observation supports previous evidence signaling that projects are especially suitable for

generating innovation because they create organizational structures around the demands addressed in specific projects (Bakker, 2010). A potential reason here, is that project orientation increases staff's commitment and task proficiency (Spanuth, Wald, 2017). However, this hypothesized mechanism requires further investigation. Nevertheless, as each project targets a one-of-a-kind issue, creative problem-solving becomes indispensable. While certain resolutions may be transmitted from one project to another, seeking a solution to the unique challenge requires an augmented level of innovativeness.

Autonomy represents the level of independence attributed to single projects. This characteristic echoed in the statements of 15 respondents. Their opinions suggested that project-orientation in T-KIBS entails that each project constitutes a separate entity and enjoys a relatively high level of sovereignty. As a consequence, single projects were detached from the established patterns of thinking, company code and norms, and as such they allowed to work out an original solution. The idea was expressed as follows: "well, in this setting you are free to work out a solution in line with your vision, as long as the client is satisfied" (respondent 12). The importance of autonomy was further supported with regard to managerial control: "we do not control much of what is happening within our project teams, we select project leaders carefully and we shift the responsibility to them. In the day-to-day operations, they are free to act almost independently" (respondent 21). On the one hand, the issue of autonomy was already present in the literature on the subject supporting the belief that the autonomy from the project sponsor is contributing to the success of the project understood as bring an idea or vision to its completion (Martens et al., 2018). On the other hand, the perspective of reducing the intensity of managerial control and substituting it by the shift of the responsibility to project leaders seems like a promising path for further exploration.

Co-production embodies project-specific and differentiated interactions of T-KIBS with the third parties. In line with the interviewees' clarifications, since the problem to be solved may not be detached from the particular company facing it, the solution can only be developed together with the client. Consequently, each project is realised in different context and benefits from the constant evaluation and adaptation based on the insights, judgement and experience (or at least a specific demand) of the company requesting support. Eleven respondents expressed the importance of this characteristic as a prerequisite of innovativeness. Respondent 22 indicated: "each client is different and has different resources, experiences etc. Thus, each project is different as we need to account for those differences and adapt accordingly. Otherwise, we won't be able to develop a dedicated solution". The similar idea was expressed by the respondent 14: "at all times we need to cooperate closely with our clients to work out a solution, otherwise we just repeat what we think is right and if it is not the case, the whole project may fall apart". The results reported here confirm that previous findings emphasising the positive effects of establishing and maintaining collaborative relationships on innovativeness (Heredia Rojas, Liu, Lu, 2018) apply in the context of T-KIBS.

Transience represents the limited duration of single projects. It was firmly emphasised by ten respondents, who indicated that once a problem is solved the project comes to termination and the staffs involved are reshuffled. The temporary leadership changes from one project to another based on the professionalism and expertise demonstrated in previous realizations. As staffs' positions are not permanently set and they may climb and fall the hierarchical ladder, the incentive to prove oneself is high. Consequently, staffs are motivated to contribute and manifest creativity, innovativeness and the open-minded solution-seeking attitude. Respondent 3 described the issue as follows: "if you have a fixed position, you don't have the motivation to act. Here it is different, you may get your own project, but you need to outperform you colleagues first". In the same vein, transience was explained as follows: "our structure is very dynamic, you may quickly move from regular team member to project leader, but also in the opposite direction. It is why we need to provide at all times at the highest level" (respondent 12). With respect to this, on the one hand, this research backs previous evidence signaling that horizontal communication and strategic decentralization bridge the divisions of traditional divisional organization, which is significantly and positively related to R&D intensity (Whittington, 1999). On the other hand however, dynamic changes in the hierarchy create uncertainty, which was found to negatively affect a person's job commitment (Keegan, den Hartog, 2004) and might be reasonably expected to lower innovativeness. Thus, this research challenges to some point previous evidence and calls for further investigation in this field.

In the light of the above, one may reasonably hypothesize that introducing project orientation in T-KIBS has the potential to increase company innovativeness. This presumption is based on the four characteristics of projects: uniqueness, autonomy, co-production, and transcendence. However, the extent to which company innovativeness may improve depends on a series of elements stimulating it.

The respondents presented very different insights as to the moderators of the link between project orientation and innovativeness. The common main categories that emerged within the whole set of interviews, in line with the specific thematic codes, were systematised and presented in a graphical form. Figure 1 presents all the moderators of the relationship between project orientation and innovativeness in T-KIBS, developed based on the themes discussed in the interviews.

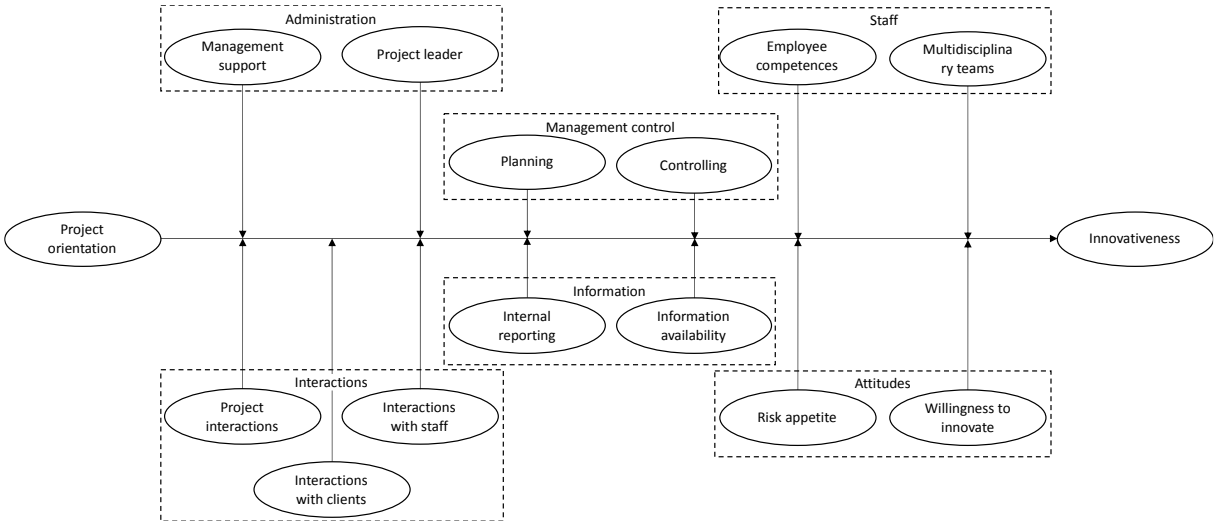

Figure 1. Model presenting the moderators of the link between project orientation and innovativeness in project-oriented KIBS in Central and Eastern Europe.

Source: own work.

This model representation constitutes a graphical summary of the study. It presents project orientation and innovativeness in line with the potential moderators of their relationship. The mere number of themes (moderators) indicates the complexity of the issue. In the case of complex phenomena, developing a theoretical explanation of any dependencies found is crucial, as it allows one to schematise the relationships. In relation to the research question, the results show that project orientation in T-KIBS enterprises may indeed lead to higher levels of innovativeness. However, the relationship is not straightforward, as all respondents suggested that a number of necessary conditions need to be met in order for project orientation to stimulate innovativeness.

The analytical framework developed based on the data is summarised in Table 2, followed by a descriptive component. The presentation is based on the recommendations of Boyatzis (1998) cited above. The moderators are grouped into 6 categories – administration, management control, staff, interactions, information, and attitudes.

Table 2.
Key elements of project orientation in stimulating innovativeness

Code	Definition	Description	Exclusion
Administration			
Management support	Supporting innovation projects by managers in terms of tangible and intangible resources	Most KIBS operating in CEE do not have a permanent department/function devoted to innovation. In this case, managerial support in each business/innovation project is the only way to assure the development of innovation	Support provided by other team members within a project or support provided between projects
	E.g. "The manager should create a whole climate that stimulates creativity. It is not only about the money, but also about meetings, conversations and listening to people" (respondent 22)		

Cont. table 2.

Project leader	Managing innovation by competent project leaders who understand both team dynamics and technical issues	In KIBS operating in CEE, the role of a project leader in innovation development is greater than in other sectors. He/she needs to possess two separate competences: (1) managerial skills and (2) advanced and often technical knowledge.	Competences of the other team members
	E.g. "It is our staff that produces innovation, but it is the role of the project leader to pick the valuable ideas, develop them and convince us of their worth, and that also is an important skill" (respondent 19)		
Management control			
Planning	Stimulating innovativeness by assuring flexible management of innovation projects and imposing budgetary constraints on business projects	In KIBS operating in CEE, rigorous planning is essential for the effective execution of business projects, but it fails to provide the flexibility that is much needed in innovation projects. To stimulate process innovation, budgetary constraints within business projects are important.	Controlling activities and tools
	E.g. "When confronted with limited resources, some people lose motivation, while the others look for new ways to cost-efficiently solve a problem. These are the ones responsible for process innovation in our company" (respondent 13)		
Controlling	Inspiring innovation by controlling deviations from plan	The optimum managerial involvement in innovation projects realised in KIBS companies operating in CEE includes the collaborative establishment of performance indicators and their verification. No involvement in decision-making at the project level is advised, as the teams are already composed of highly qualified specialists in the field.	Other aspects of project management and planning
	E.g. "The formulation of a plan is just a half way through, you need to constantly update it, remind people of the strategic goals and control for deviations" (respondent 13)		
Staff			
Employee competences	Focus on the competent staff at the disposal of KIBS adds to company innovativeness	The mix of highly competent workers within KIBS operating in CEE creates a favourable environment for innovation. High individual competences may be acquired through education and work experience.	Combined knowledge of the team, as opposed to individual competences
	E.g. "The best innovation comes from the most competent staff. That's why we pay special attention to the competence of our people" (respondent 16)		
Multidisciplinary team	Fostering innovativeness by combining different areas of expertise and limiting the interpretative barriers	A multidisciplinary composition of the team is a strong innovation success factor in KIBS operating in CEE. Employees assigned to projects change from one project to another, which diminishes the interpretative barriers over time.	Issues referring to management and senior management
	E.g. "We are all specialists in our domains. Sometimes it's ineffective to look for a solution on your own. You colleague may already have the solution you require" (respondent 12)		
Interactions			
Project interactions	Spreading product and process innovation with the use of interactions between different projects	If KIBS operating in CEE offer their solutions to companies operating on a homogeneous market, product innovation is likely to spread across projects. If this is not the case, process innovation is most likely to move from one project to another.	Interactions other than the ones between projects
	E.g. "On the one hand, we offer strictly tailored services for our clients. On the other hand, sometimes they do not recognize their own needs properly. The more projects we realize, the more solutions we have at our disposal, and the more we can offer them" (respondent 6)		

Cont. table 2.

Interactions with clients	Producing new services based on the clients' requests	In KIBS operating in CEE, the client-supplier cooperation is essential for innovation.	Own invention of new services
	E.g. "Your clients require you to be innovative. Often, they are looking for solutions that no one on the market provides" (respondent 5)		
Interaction with staff	Drawing innovation from the front-end staff	Such characteristics of KIBS operating in CEE as employing highly qualified specialists in the field and the lack of an R&D department mean that the "inventing by doing" approach is effective in innovation development.	The role of employees other than the front-end staff
	E.g. "Our greatest asset is our staff. It is them who are at the customer interface, who actually develop the solutions we offer on the market" (respondent 15)		
Information			
Internal reporting	Formalising internal reporting to stimulate the reproducibility of innovation projects	There are numerous advantages of internal reporting. The one that is key in KIBS operating in CEE is that of reproducibility. Internal reporting is one of the few tools that may be used to reproduce successful innovation projects in this particular setting.	Forms of coordination other than internal reporting
	E.g. "Reports are in fact an effective tool of communication. You cannot speak to everyone, but you may follow a brief report" (respondent 21)		
Information availability	Stimulating the reproducibility of innovation projects by encouraging the exchange of information	the availability of information on the effective solutions developed is an important innovation success factor in KIBS operating in CEE. It supports the reproducibility of such solutions.	Formal ways of sharing information
	E.g. "When we develop an efficient solution, we are encouraged to share. It is important, because other teams do not have to redo our work. Of course, we also benefit from the solutions developed by others" (respondent 16)		
Attitudes			
Willingness to innovate	Establishing the willingness to innovate based on the promotion of numerous minor improvements	In KIBS operating in CEE, successful innovation management requires for the staff to be constantly reminded of the importance of innovation. One effective reminding tool is the promotion of numerous, minor improvements that allow innovation to remain on the surface.	Promotion of breakthrough innovation
	E.g. "Of course, the formal systems are important, but at the end of the day these are people who innovate" (respondent 5)		
Risk appetite	Encouraging radical innovation through the support of risky projects	In KIBS operating in CEE, high appetite for risk is likely to support the development of radical innovation.	Supporting minor improvements
	E.g. "In order for radical innovation to appear, you need to be willing to take risks. Otherwise there is a real chance for you to miss the opportunity" (respondent 13)		

Source: own work.

The first category within the analytical framework is administration. It groups two specific potential moderators that emerged during the interviews: management support and the role of a project leader in increasing a company's innovativeness. Most respondents (n = 19) pointed out the extreme difficulty of innovation development without managerial support. The respondents stated that: "no matter how good the idea is, you will not be able to develop it without right people backing you" (respondent 2), and that "we usually proceed with several complex projects at once, we all need to be attentive to see when the innovation opportunity

comes" (respondent 9). This observation complements previous evidence, signalling that senior management support is a critical factor for the success of innovation projects (Bonner, Ruekert, Walker, 2003; Davila, 2003; Van der Panne, 2003). It is at the managerial level that the ideas to pursue are selected and the necessary financial and human resources are provided. The importance of managerial support was especially emphasized with regard to the specificity of KIBS: "some companies are well known for their R&D activity, they have R&D departments, special funds, labs etc. It is not the case here; we do not have such tools. That's why your manager is the only one you can go to, and if he rejects the idea, there is not much you can do" (respondent 11). It seems that the project-oriented KIBS are usually concentrated around business projects, and for the majority of employees, involvement in innovation projects is part-time at most. If there is no specific department devoted to R&D, managerial support is essential not only in (1) gaining resources, but also in (2) keeping the attention of the assigned staff on the innovation projects (even though the business ones are typically more urgent).

The second potential moderator related to administration is the direct role of the project leader. More than a half of the respondents (n = 14) indicated that a devoted project leader may have a decisive role in the development of both business and innovation projects. This was emphasized as specific to KIBS, where a twofold competence of the project leader is necessary. First of all, he/she needs to possess the necessary managerial skills. Second of all, he/she must possess specific, advanced, and often technical knowledge required at the frontline of innovation. "Our project leaders need to be experts in their domains. Otherwise they struggle to contribute, evaluate progress, control staff, innovate etc.", respondent 15 stated. Moreover, respondent 20 suggested that "most projects fail because the leader fails. It is a difficult task to lead a project in such business as ours, it requires a whole set of skills like understanding technical aspects, solving managerial and marketing issues, addressing communication problems within the team and outside of it, solving conflicts etc.". Respondent 8 added that an "active leader is part of the team. You may effectively communicate with people only if you are accepted as one of them", and, in relation to innovation, "you need to stay alert for all the emerging ideas, but then again, we also have superiors. Sometimes you want to act but your hands are tied". Previous evidence suggested that in project-oriented companies, the role of a project manager is simpler than in non-project-oriented ones (Hobday, 2000). The present study contradicts such a conclusion, and the difference is clearly explained by the specificity of KIBS. It seems that in project-oriented KIBS, the role of a project leader needs to be stressed, from day-to-day management to the active, spontaneous support and development of innovation. Functions such as coordination, translation and integration of the demands of different departments are insufficient, as the lack of an R&D department forces project leaders to take over responsibility for innovation.

The second category concerned the implementation and utilisation of a management control system or its specific tools. It emphasized the role of planning and controlling in increasing the innovativeness of project-oriented KIBS operating in CEE. 16 respondents stressed the importance of planning for the effective execution of projects in KIBS. Most respondents perceived planning as an essential component of project management, because there are few permanent organisational structures. Firstly, it "helps maintain focus on the issue of interest" (respondent 5) and makes it "clear what should be done, by whom and when" (respondent 19). Secondly, in relation to innovation, respondent 7 pointed that "budgetary constraints are reluctantly accepted, but stimulate people to search for the most effective solutions". This observation further supports the previous considerations (Ernst, 2002; Henard and Szymanski, 2001; Van der Panne, 2003). On a different note, respondent 22 stated that "each project is different. We are not really able to plan much. Conditions tend to change quickly and we need to respond, irrespectively of what we have planned in advance". Such contradictory statements demonstrate that the role of planning differs depending on the type of project managed by KIBS. While rigorous planning is suited to the needs of business projects, it fails to provide the flexibility that is much needed in innovation projects. Again, such an observation supports previous evidence (Blindenbach-Driessen & Van den Ende, 2006; Lewis, Dehler, and Green, 2002). The present study adds to previous knowledge by formulating an additional conclusion: as far as business projects are concerned, one aspect of planning in particular may foster innovativeness, and this is well-specified resource allocation, including budgets. Limited resources push the staff to look for ways to reduce resource usage through process innovation. Moreover, respondent 5 indicated that precise organization and controlling lead to waste minimization, which leaves greater funds for "ad hoc" innovation if needed. Lastly, the more complex the business project, the less benefit there is from precise planning. As far as innovation projects are concerned, the benefits of both planning and establishing a tight budget are distinctively smaller than in the case of business projects.

The potential moderator concerning planning was distinct from that of controlling, which was discussed by 8 respondents. It seems that controlling the projects throughout their execution by KIBS increases the chances for innovation to emerge. One purpose of a management control system is to point out any deviations from the initial plan. Thus, a controlling system clearly indicates the areas in which the goals are not met, and ones in which change is needed. "Even though maintaining formal control in an operation such as ours is challenging, it is worth making the effort. On the one hand, you can control the expenditures, on the other, it serves a clearly motivational purpose, as falling behind the plan pushes people to look for better solutions", respondent 9 stated. Furthermore, respondent 9 added: "you should not impose the controls on the team members, you should work them out with the team before the project starts. Also, once the controls are set, you should not intervene in decision-making at the project level, they will know best what to do". It seems, therefore, that extensive involvement is likely to hinder creativity and innovation. These conclusions are consistent with previous evidence,

indicating that early and interactive decision-making regarding control mechanisms is important for effective projects (Bonner, Ruekert Walker, 2003). The above considerations complement previous evidence by indicating rather clearly the optimum level of managerial involvement in innovation projects realised in KIBS companies – collaboratively developing a controlling mechanism (including performance indicators) and then controlling for deviations, while leaving the execution of the project entirely to the project team.

The third category clusters all the potential moderators concerning staff involved in the execution of projects, especially staff competences and the composition of project teams. Twelve interviewees underlined the importance of high competences in employees' respective fields of expertise. It turns out that the involvement of highly competent staff in projects contributes to higher company innovativeness. This is especially important in the case of KIBS, which rely heavily on engineers, scientists, and other experts. In such companies, human resources constitute a stronger basis for innovation than in other service companies. The mix of highly competent workers within KIBS creates a favourable environment for innovation. In this vein, respondent 11 stated: "the projects that we pursue are complex, and thus we need the best qualified staff. We are lucky to gather some great specialists and they clearly contribute to our advantage". Thus, it seems that what drives innovativeness in KIBS is the right coordination of highly competent staff. As explained in previous studies, KIBS perform complex operations of an intellectual nature, in which strong competences are the dominant success factor (Carmona-Lavado, Cuevas-Rodríguez, Cabello-Medina, 2013). In this context, the present study adds the conclusion that in their innovation activities, KIBS in CEE may rely to a large extent on what is already at their disposal, before chasing novel ideas from outside of the company. It is a clearly distinctive characteristic of KIBS, which works very much to their advantage compared to the general population of service providers.

Furthermore, project-oriented KIBS rely on project teams that vary in composition from one project to another. 17 respondents referred to the right composition of teams as a critical innovation success factor. "We all need to speak the same language; otherwise numerous conflicts arise. Technical aspects that are obvious for our engineers seem like secret knowledge to some of our staff, it's not easy to explain everything to everyone" (respondent 18). It appears, however, that there is also a bright side to multidisciplinarity: "sometimes you look for a solution, and you don't even know that the problem is long solved and all you need to do is ask your colleague" (respondent 22). There was general agreement that joining different areas of expertise within a project creates favourable conditions for innovation to emerge. In this context, most evidence to date indicated that effectively collaborating multidisciplinary teams are the very basis of effective project execution (Cooper, 2001; Lovelace, Shapiro, Weingart, 2001). The present study adds to the previous conclusions by indicating that the specific nature of KIBS strongly impacts the composition of project teams and the mutual understanding among team members. Such entities usually employ representatives of different

specialties (both technical and non-technical). In subsequent projects, the staff tend to mix as they are assigned to different teams. From one project to another, the specialisation gap between workers diminishes, communication issues vanish, and the benefits of multidisciplinarity, including innovation development, emerge. In non-project-based organisations, intra-company staff rotation tends to be smaller, and interpretative barriers between functional departments may prevail. Thus, the participation of staff representing different specialties serves innovation only in those companies that successfully diminish the interpretative barriers, one of which are project-based KIBS.

The fourth category included different types of interactions, with special regard to project integrations, interactions with clients, and interactions with staff. One important feature of project-based KIBS is that projects interact with one another. Almost a half of the respondents (n = 10) referred to the formal and informal interactions between project teams as an important success factor for innovation. As respondent 1 claimed: "we often pursue projects in related market segments. In such cases, it is important to exploit synergies. Once a project advances, the other projects should also benefit". Such a conclusion may also be found in the existing scientific evidence. Especially Girotra, Terwiesch and Ulrich (2007) claim that the success of a project may be determined to a large extent by project interactions. The issue of project interactions was elaborated by Eilat, Golany and Shtub (2006), who concluded that interactions take place on three levels: that of resources (projects share the same resources), benefits (complementary and competitive projects), and outcomes (probability of a given project's success depends on whether another project is undertaken). Importantly, in the case of KIBS, the benefits of interactions seemed to differ from one company to another. A possible explanation is that some of the firms concentrated on a particular market, while others offered their services to a wider range of clients. This is important for the way product and process innovation spreads across the KIBS. In the former case, project interactions allow for product innovations to penetrate from one project to another. It is the product innovation that, once it has been offered to a client, becomes a standard offering of the company and thus passes to other projects. In the latter case, the services offered tend to be highly diversified and therefore, the product innovation flow is unlikely. However, process innovation may still be effectively transmitted between projects. Thus, the present study complements previous research by indicating that the way innovation spreads across the company depended on the market(s) to which a KIBS company offered its services. Also, focus on a particular market supported continuity and the emergence of outcome interactions. Concerning resource interactions in project-oriented KIBS, the dominance of business projects over innovation projects hinders the development of the latter, as in most cases it is especially challenging for them to successfully compete for resources.

The second potential moderator that emerged within the "interactions" category involved communication with clients. According to the respondents, it constituted one of the most important links between project orientation and innovativeness (n = 16). Respondent 3 indicated

that: “sometimes you don’t have to look for innovation or spend any funds on ‘inventing’. The innovation is right before you, you just have to listen carefully to your clients (…). It may turn out that just by following your client’s request you provide something new, that has never been provided before”. It appears that the specificity of KIBS was indirectly captured in the above statement. Providing individually tailored solutions, each of which is to some extent different from the others, entails a certain degree of novelty each time the service is provided. Thus, simply responding to the market needs may already make a company innovative. Moreover, “if a client needs a solution, it is likely that his competitors will need a similar one. So once a new service is developed, the solution might ultimately spread into wider use”, respondent 17 said. To some extent, this observation corresponds to previous evidence, which indicated that the client and the service provider may engage in an interaction within which new knowledge is created and shared. The process is effective when the customers possess high competences in their domain (Kemppilä & Mettänen, 2004). In this vein, the present study delivers further support for the previous conclusions, this time in the context of KIBS, where client-supplier cooperation is inscribed in the very essence of business activity.

The third potential moderator in the “interactions” category included interactions with staff. Though the study was conducted mainly among managers and project leaders, the role of staff in innovation activities pursued by KIBS was widely recognized (n = 18). Respondent 14 elaborated on the idea as follows: “I am of the opinion that the real innovation comes from our staff, from the ones that actually do stuff on the daily basis. Most of the valuable ideas were worked out in the actual process of service provision, not during the meetings, brainstorming, workshops etc.” Project orientation and the lack of a dedicated R&D department forces KIBS to look for other ways to develop innovation. The present study supplements previous evidence by emphasizing the importance of the “inventing by doing” approach in the KIBS setting. Consequently, it is the staff that are the most predisposed to come up with new ideas. This conclusion complements the previous scientific evidence on generativity (e.g. Kleysen, Street 2001). It indicates that the characteristics of KIBS – such as employing highly qualified specialists in the field and the lack of an R&D department – mean that the “inventing by doing” tactics are a much more effective way of innovation development than in other sectors.

The fifth category encompasses the broadly understood role of information in innovation development activities. Within this category, the respondents indirectly addressed the issue of reproducibility, which is especially challenging for project-oriented KIBS. Seven respondents were of the opinion that formalised projects, which satisfy the internal reporting principles, tend to contribute more to the company’s innovativeness in terms of reproducibility. It appears that when the progress of a project is well documented, the new solutions that have been developed are more easily reused and extended to other markets. The lack of such documentation bonds the know-how with particular staff, and hinders its spread across the company. Respondent 9 explained it as follows: “no one likes documentation, but at the end of the day, it has its merits. You may look at what has been done and see what you don’t have to

do any more. Also, you may find and implement in your project a whole bunch of clever solutions which are reported there. Otherwise some good solution may have gone unnoticed". The conclusion complements the previous evidence on the benefits of documentation by introducing the reproducibility-based advantage, which seemed neglected in scientific investigation to date. The existing evidence enumerated only such benefits as the use of non-financial reports as an opportunity to check corporate strategic positioning, redefine mission and values, evaluate progress, reorient corporate action, manage relationships with stakeholders, redefine responsibilities and tasks, enhance collaboration, identify synergies among divisions and corporate functions (Perrini, 2006).

Next, the respondents addressed the issue of information availability. In sectors like KIBS, the importance of information and knowledge is great by definition. The implementation of project orientation may hinder the free flow of information, as new knowledge developed within a project may remain within a single team. More than a half of the respondents (n = 12) referred to the issue of structural tools and informal actions enabling information-sharing and, ultimately, innovation. "We would like for all the staff to share their experiences; it would have saved us a whole lot of time and effort. In order to do so, we encourage our staff to share during the week-opening meeting. Until now, it works just fine", respondent 3 stated. Previous evidence showed that information availability is one of the crucial success factors at the project level, comparable to transparency (Martinsuo, Lehtonen, 2007). High availability of information improves decision-making quality and supports innovation development efforts. Again, what is important in the context of KIBS is that informal tools designed for information exchange can support reproducibility (complementing internal reporting), which constitutes a considerable challenge in project-based organizations.

The sixth category, widely discussed by the respondents, may be jointly described as "attitudes". Almost all respondents referred to it at some point (n = 19). It seems that two potential moderators emerged with particular clarity: willingness to innovate, and risk appetite. Willingness to innovate, both among the staff involved in the project and the managers in charge, contributes positively to KIBS' innovativeness. While such a statement may be considered a truism, what actually attracts attention is the issue of how to actively stimulate a willingness to innovate in KIBS that are strongly dominated by business activity. Respondent 11 brought attention to an important characteristic of KIBS in this context: "when we compare ourselves to other sectors, our offering is heterogenous and ephemeral. The effect of the project execution is not something you can touch and preserve". Thus, a similar sense of vanishing may exist in the case of innovation, which is there for a while and then gets lost somewhere amid the daily business activity. In this vein, respondent 7 continued: "what we need in order to stay innovative are the continuous minor improvements that remind us of the importance of innovation. We do not have our big R&D department that serves this purpose, and these little things make innovation activities noticeable, remind us that there is something more than the quarterly profit". The conclusion that in KIBS, where results are ephemeral,

successful innovation management requires for the staff to be constantly reminded of the importance of innovation, and one effective reminding tool is the promotion of numerous minor improvements, which allows for innovation to remain on the surface, seems to be a novelty. It complements the already well-developed set of tools and behaviours that leaders use to influence employees' innovative behaviours (De Jong, Den Hartog, 2007).

Respondents indicated that the appetite for risk increases the chances for radical innovation in KIBS. In contrast to minor improvements that sustain willingness to innovate, it may constitute an efficient tool for differentiation on the market and help establish a strong competitive advantage. As respondent 1 explained: "Risk appetite, if you want to call it this way, is a very important factor. The best idea will vanish if there is no one to pursue it. Sadly, some people tend to defend the current status quo and act against all changes". It appears that the fundamental distinction should be made here between risk associated with the feasibility of the project and risk associated with market success. While the former should be addressed by the project team, the latter is the domain of senior management. The importance of risk appetite with regard to innovativeness complements previous scientific evidence, which indicated that risk aversion had a significant positive impact on the likelihood of KIBS firms developing innovation capabilities involving external and internal R&D (Amara, Landry, Halilem, Traoré, 2010). Here, the difference in findings may be due to the different spatial scope (the study performed in Canada) and subject scope (engineering services, computer system designs services and management consulting services) of the previous research.

5. Conclusion

The present study contributed to literature on the relationship between project orientation and innovativeness in T-KIBS. Its theoretical contribution consisted in determining the categories and potential moderators that are key in increasing company innovativeness in project-oriented KIBS. In the study, the project-oriented organisation perspective was adopted and the role of administration, management control, staff, interactions, information and attitudes – as elements improving strategic management, organisational behaviour, and organisational design, and ultimately resulting in improved innovativeness – was emphasised. Therefore, the following research question was addressed: how and why project orientation contributes to higher innovativeness? In the study, a specific context was proposed for examining the relationship between project orientation and innovativeness – namely, the research scope was narrowed to the T-KIBS sector in order to account for its specificity. Such a setting corresponds to practical and theoretical gaps in knowledge on project management.

The data was gathered from 22 semi-structured interviews performed in the third and fourth quarters of 2018, in 12 technology-based companies offering knowledge-intensive business services, operating in Central and Eastern Europe. It targeted respondents best informed on the impact of introducing project-based organisation on innovativeness, i.e. senior management, project leaders, and innovation managers.

The study corroborated previous evidence indicating a positive relationship between project-based organisation and company innovativeness (Wald et al., 2015b). However, it demonstrated that the mechanism behind increasing innovativeness through the implementation of project-based organisation is not straightforward. Based on the data gathered, an analytical framework representing the relationship between project orientation and innovativeness was proposed, consisting of six categories within which 13 potential moderators are clustered. The framework is as follows: administration (management support and project leader), management control (planning and controlling), staff (employee competences and multidisciplinary teams), interactions (with staff, with clients, and between projects), information (internal reporting and information availability), and attitudes (risk appetite and willingness to innovate).

Given the re-confirmatory character of the study focused on the specificity of T-KIBS, its managerial implications are limited. However, managers may take advantage of the patterns described, as these provide valuable insights into some aspects of project orientation and innovativeness within KIBS in CEE. In order to provide greater clarity and practical applicability, the most important moderators based on the frequency and emphasis they received in the interviews were provided. In particular, managerial support, the right composition of teams and planning emerged as the most frequently mentioned (referred to by 19, 17 and 16 respondents, respectively). Other moderators received relatively fewer explicit references, they nonetheless underpin many of the processes needed for effective knowledge sharing and reproducibility. Indicating these three moderators offers a practical starting point for managers to prioritize resource allocation and policy interventions according to the areas deemed most critical for enhancing innovativeness in project-oriented T-KIBS. Following further confirmation in a large-scale study allowing for the generalisation of results, the proposed framework may ultimately become a managerial tool.

Future research could examine how the application of project orientation translates into long-term success of T-KIBS companies. Moreover, quantitative research on the impact of project-based organisation on company innovativeness in the context of T-KIBS seems of vital theoretical and practical importance. Further investigation including cross-country comparisons would clarify if the dynamics observed in Central and Eastern Europe hold true in other geographic regions. Additional longitudinal studies would help clarify the causal relationships between project orientation, staff autonomy, and organizational innovativeness over time. Moreover, there seems to be scientific potential in exploring the role of digital technologies and artificial intelligence in enhancing co-production and documentation processes in T-KIBS.

Findings from the study clearly appear to have answered the research question. However, the investigation was not free of limitations. First of all, though the study investigated the opinions of individuals that are best informed on the subject matter, this means that it solely presents the managerial perspective. Thus, one must be aware that the opinion of front-end employees may have been different. Second of all, due to the specific context of the study, its results are only applicable to T-KIBS companies. Third of all, while the snowballing procedure enabled obtaining a more comprehensive view of project-based organisation, it may have potentially increased the desirability bias (whereby interviewees say what they think their peers want them to say). As the interviewees knew that their associates suggested them as potential subjects, they may have tended to respond in a conservative manner.

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