The impact of cooperation closeness on cooperation effectiveness in university-industry R&D collaborations

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The effectiveness and manageability of collaborations among universities and companies are extremely intense in the period when cooperative R&D projects enjoy increased support. University-corporate relationships may present lots of advantages that can yield significant potential added value for all participants. This added value can materialise in contribution to human resource development, access to additional resources, learning impacts, other social gains, or the sum of the synergies of all these benefits. The success precondition of these unique business-nonbusiness collaborations is the management of projects implemented within the framework of cooperation, as well as the management of the entire cooperation.

Keywords: relationship management, university-industry relationships, relationship values

1. Introduction

Our study focuses on this latter issue. Using the tools of relationship marketing we are trying to evaluate whether (governmental, regional, institution or other) programmes designed to enhance the closeness of cooperation improve the effectiveness of university-corporate collaborations in economic terms.

As a starting point of our analysis we conducted a pilot research on the relationship portfolio of the University of Szeged during 2007. During the analysis we applied a parallel approach. The relationship between the effectiveness and the closeness of the cooperation was studied not only from either the corporate or the university perspective, but also from both points of view in parallel. In addition, this paper pays special attention to the study of the possible gains of university-corporate cooperation, the components of effective cooperation, and the interpretability of cooperation closeness in relation to these two sectors as well as.

2. Economic effectiveness of university-industry R&D partnerships in the light of relationship closeness

If we want to analyse the economic effectiveness of R&D collaborations, we face an issue with difficulties to manage. Earlier we conceded that in course of R&D collaborations (especially in the case of vertical partnerships), the term of relationship between the service supplier and the service user can be interpreted. However, in case we wish to examine this term in a business to nonbusiness relationship, significantly different interests and expectations can be identified (*Hetesi* 2009), which make it difficult to evaluate the cooperation effectiveness.

University-based, academic research traditionally aims to create and deepen the basic knowledge, which is to be integrated into the general education programme. The academic sector primarily focuses on new, uncovered scientific fields that are useful in providing long-term perspectives in basic and applied research topics. It also serves as a basis for training future scientists, experts and researchers (*Santoro* 2000). On the nonbusiness side the expectations towards cooperation can be summarised as revenue generation, political base expansion, prestige maximisation, research and education spillovers, reference and reputation enhancement, acquisition and enhanced utilisation of human resource capacities, and assets procurement (*Slaughter–Leslie* 1999, *Barakonyi* 2004).

In contrast, the market partners are mostly interested in the sale of research outcomes, and the problem solving applications that can maximise the profitability and the stakeholders' assets, that can decrease risks, increase market share and sales revenues or that can improve the economy of scales (*Katz–Ordover* 1990, *Hagedorn* et al 2000, *Santoro* 2000, *Barnes* et al 2002, *Turánszky* 1984, *Tijssen* 2001, *Okamuro* 2007, *Harabi* 2002).

Therefore, the cooperating partners have significantly different expectations from each other, which can be accompanied by divergent perceptions of the outcomes. All above makes the manageability of the cooperation questionable. Yet, despite these conflicts, numerous successful university-industry collaborative partnerships exist. It is worth mentioning here that 70% of university-industry R&D projects implemented under the Jedlik Ányos Programme –replaced the National Research and Development Programme supporting long-term strategic research projects while serving corporate interests – were realised in the framework of cooperation as defined above. In addition, cluster programmes that are widespread in Europe, and are about to start in Hungary, can also be mentioned as examples. The often cited successes of these programmes are the proofs of the existence of the university and corporate partnerships.

Möller and *Törrönen* (2003) underline the role of relationship closeness as a basic precondition for the collaborative project success. They visualise the possible implementation of a vertical relationship along a spectrum. They start from the fact that the relationship success depends on the level of complexity of cooperation. In relationships with extremely low complexity (transaction-oriented relationships) the parties can be characterised with short term orientation. The adaptation in the relationship is minimum, while the participants strive for maximum utilisation of the existing resources and technologies. The focus is on exploitation of the relationship impact during the course of exchange activities. As the complexity of the relationship increases, mutual adaptation and relationship specific investments turn the cooperation into a value generating process. At this cooperation level, the processes of the individual parties start to match, which influences both the exploitation of exchange activities and the development of the relationship portfolio. In the case of extremely complex collaborations the parties approximate their activities to a degree that provides an opportunity for radical innovations.

If we start out from this context, the closeness of a relationship creates a cooperative atmosphere which is accompanied by enhanced cooperative effectiveness. However, in the case of university-corporate R&D collaborative projects this issue is far from being obvious in the light of the literature. Certain studies come to the conclusion that such types of collaborations enhance the productivity of the participating organisations (see for instance *Belderbos* et al (2004), while others find that university-firm collaborations clearly deteriorate the economic performance of companies (*Okamuro* 2007). Others, like *Miotti* and *Sachwald* (2003) came to conflicting conclusions in this issue.

This study shows that university-corporate collaborations are not homogeneous: the basic correlations of relationship marketing can and should be applied in this field, too. Despite the significantly different interests, strategically managed partnerships are more effective, and are therefore able to produce economic added value. In other words, university-corporate interactions by themselves – even if the project defined within the framework of such interaction was successfully completed – are not necessarily economically fruitful for the parties. However, by making the relationship closer, the economic effectiveness of these relationships – taken in the broad sense – can be enhanced. Yet, in order to operationalize the problem, it is necessary to define what we mean by the effectiveness and closeness of university-industry R&D collaborations.

3. Operationalization of the economic effectiveness and closeness of university-industry partnerships

3.1. The closeness of university-industry R&D collaborations

During the definition of the closeness of collaborations, the studies of the classic supplier-buyer collaborations by Joseph et al (1995) and the study published by Brinkerhoff on university-corporate collaborations (2002) were used as a starting point. In relation to university-industry R&D collaborations Brinkerhoff (2002) describes the closeness of cooperation by using the term partnership, according to which partnership is a dynamic relationship among diverse actors, based on mutually agreed objectives, pursued through the most rational division of labour based on the respective comparative advantages of each partner. "*Partnership encompasses mutual influence, with a careful balance between synergy and respective autonomy, which incorporates mutual respect, equal participation in decision-making, mutual accountability, and transparency*" (*Brinkerhoff* 2002, p. 216.). During the empirical study of the closeness of relationship, Joseph et al came to the conclusion that partnerships are more profitable and have greater management efficiency than other relationships, however it must be noted that they are more management-intensive and time-consuming. In the case of partnerships – as Brinkerhoff (2002) also claims – a higher relationship performance, i.e. higher relationship effectiveness and efficiency can be predicted.

Based on Brinkerhoff's (2002) study, the closeness of cooperation can be modelled with six variables: mutuality and equality in partnership; partner representation and participation in the cooperation; the transparency of partnership; mutual respect; interest in maintaining the partnership; the relationship between cooperation and organisation identity. (The individual variables are presented in detail in Table 1.).

Table 1. Definition of the variables applied for the evaluation of the closeness of cooperation

Applied variable	Definition of variable
Mutuality and equality in partnership	This variable implies that the activities pursued in cooperation, as well as the processes applied in the partnership are defined and shaped jointly, on the basis of consensus by the parties.
Partner representation and participation in the cooperation	This variable implies the active participation of the parties in the completion of projects implemented within the framework of partnerships, in the regular monitoring thereof, as well as in the formulation of changes.
Transparency of partnership	The partnership is transparent for the parties, as a result of regular and open communication they obtain information about all issues relevant to the partnership.
Mutual respect	The parties to a partnership mutually respect each other's objectives, needs and interests.
Interest in maintaining the relationship	The parties to a partnership view their cooperation in the long perspective, since they are convinced that it significantly determines the quality of their core activities.
The relationship between partnership and organisation identity	The parties to a partnership regard the management of the given partnership as part of the everyday processes; the development of the partnership also determines how the organisation's image of itself changes.

Source: own compilation

4. Presentation of the subjects and methodology of the study

The basic subject of the study, i.e. the relationship between the closeness and effectiveness of university-industry R&D collaborations, can be formulated along two subquestions:

– How do the university and corporate actors perceive the effectiveness of cooperation?
– Is the parties' perception of effectiveness influenced by the closeness of cooperation?

During the study of the first question, the effectiveness of partnerships was the starting point. Although we modified the components to this end, and although their value increases in case they are managed, it is not at all sure that this increase in the perceived effectiveness will be identical for both parties. The parties to the partnership may perceive the effectiveness of the relationship differently. During the consideration of this assumption it is worth taking into account the works by McIntyre et al (2004), as well as Young et al (1996), according to which effectiveness is a perceived phenomenon, and may take different values depending on the original and changing intentions of the individual organisations, and therefore it must be interpreted in the light of the initial figures. Since the parties to a partnership compare effectiveness against their expectations, effectiveness will be perceived differently by the supplier and the buyer. Starting out from these results we have all the right to assume that

H1: Relationship effectiveness means something different for the service supplier and the service user.

All this means that in case relationship effectiveness can be expressed with different factors for university and corporate actors, the above statement can be justified. However if relationship effectiveness can be expressed with identical factors, the above statement can be rejected.

In order to answer the second question we need to study two further subquestions. On the one hand, can increased relationship closeness modify the difference in perception? The question seems logical, since if we start out from *Möller*'s and *Törrönen*'s (2003) chain of thoughts, relationship closeness can be increased through adaptation (matching of processes, relationship specific investments). Adaptation implies the approximation of expectations against and interests in the relationship, which may trigger the convergence of expectations towards the relationship, and hence the convergence of the perception of relationship effectiveness.

H2: As the closeness of cooperation increases, the difference in the perception of effectiveness decreases.

It is worth dissecting this topic from another aspect, too, since the difference in the perception of effectiveness is only one side of the coin. The other side shows the correlation – already concluded by Brinkerhoff, too – whether, independent of the different perception, the outcome perceived by the cooperating partners enhances as the cooperation becomes closer. We assume yes, i.e.:

H3: The greater the closeness of cooperation, the greater the outcome perceived by the actors involved.

This assumption also promises success, since in a closer partnership the parties have a better understanding of each other's possibilities and limitations, as a result of which the expected outcomes of cooperation are more realistic, while conflicts or even the coordination costs decrease. Therefore, if we accept the value generating effect of a relationship based on mutual investments and adaptation, the relationship should lead to better outcomes, too.

The completion of the tasks defined as research objectives required the elaboration of a system of indicators through which the variables of the studied correlations become measurable, and it becomes possible to statistically analyse the behaviour of such variables.

For the development of a system of indicators that would serve as a basis for testing, a questionnaire was compiled for the measurement of the variables of the effectiveness and

closeness of relationship. The questionnaire was forwarded to the respondents via e-mail. Data recording lasted from September through November 2007.

The questionnaire contained statements on the relationship effectiveness and relationship closeness variables in the form of tables (matrixes). The respondents who were involved in the research had to form opinion on the given statements on the six-point Likert-scale.

The test population was identified on the basis of the cooperative research contracts and the electronic proposal register of the University of Szeged. In the first step university-industry R&D collaborations were selected from these relationships. We considered all live contracts or series of contracts between a unit of the University of Szeged and a corporate partner that contained at least two projects, one of which had already been closed, and whose starting dates were different. We applied the narrowing method, since during the selection of the population those partnerships were not taken into account in the framework of which no contract based task performance was carried out at the time of the test, or the relationship between the university and the corporate partner was not specified in contract during the cooperation. Narrowing was justifiable, since responses, in the case of which cooperation could not be proven with certainty, could have significantly distorted the test results. As a second step for the identification of the test population, vertical partnerships (45) were selected from the previously mentioned relationships. The questionnaire was sent out to the contact persons of both parties in each of the 45 identified partnerships. Altogether 62 completed questionnaires were returned (as a result of which a responding ration of 69% was achieved). Out of the returned questionnaires 28 were completed by corporate contact persons, and 34 were completed by university contact persons.

In the sample available for analysis (Table 2), the opinions of the contact persons of collaborations in the field of natural sciences were over-represented, while those of medical and pharmaceutical collaborations were under-represented. In the case of scientific and medical collaborations corporate and university responses had a relatively equal weight, while in the case of pharmaceutical collaborations opinions by the university partners prevailed.

Table 2. Characteristics of the sample available during the analysis

	Questionnaires returned by corporate respondents*	Questionnaires returned by university respondents*	Total questionnaires returned*
In the case of collaborations in the field of natural sciences	80.00%	95.00%	87.50%
In the case of collaborations in the field of medicine	57.89%	47.37%	52.63%
In the case of collaborations in the field of pharmacy	16.67%	100.00%	58.33%
In the case of all surveyed collaborations	62.22%	75.56%	68.89%

Note: *= as a percentage of the distributed questionnaires
Source: own compilation

During the test the methods of main component analysis, correlation calculation and regression analysis were used.

Questions that pertained to the different perception of relationship effectiveness were tested by means of the main component analysis. In case the variable pertaining to relationship effectiveness can be expressed along the same main components, then the

perception of effectiveness can be regarded identical, while in the case of discrepancies the mechanism of outcome perception is different. During the application of the main component analysis variables were managed in a standardised form (where the expected value was 0, and scatter was 1), while the threshold value of the information content described by the main components was determined to be 60%.

Correlation calculation was used during testing the correlations between relationship closeness and relationship effectiveness, while regression analysis was used to evaluate the relationship between relationship closeness and relationship effectiveness.

5. Test results

The hypotheses that expressed the research objective were tested in three steps. In the first step it was necessary to test whether the identified factors (such as financial effectiveness, technical/technological effectiveness) really covered the targeted variables. After that the different perceptions of relationship effectiveness were tested, and then the correlation between relationship effectiveness and relationship closeness was clarified. In this paper we show only the third step, which is about the results of the research in aspect of closeness.

5.1. The correlation between relationship closeness and relationship effectiveness

In the third stage of the study the correlation between relationship closeness and relationship effectiveness was brought into focus. The different perception of relationship effectiveness by the corporate and university actors raised various questions. Since in case we highlight those features of cooperation that yield economic benefits for both parties, how can it be that these benefits are perceived so differently by the parties, especially in a partnership that is shaped by the parties jointly, and in which the parties consciously participate? The correlation of relationship closeness may give an answer to this question. The parties are very much likely to judge the usefulness of partnership similarly, if they view the partnership in the long perspective, if both parties are actively involved in shaping the partnership, while they understand and respect each other's interests, and through all this partnership becomes part of the organisation identity.

Turning this logic into a research question we can ask whether the perception of relationship effectiveness by the participants converges as the closeness of cooperation increases.

In order to study the issue, symmetric relationships, i.e. collaborations in which evaluation by the university and corporate partners alike was recorded, were deleted from the sample analysed during the quantitative research. With this solution a sub-sample consisting of 19 relationships was created. Within this sub-sample we generated the difference between the perception of the characteristics of relationship effectiveness by the university and the corporate partners in an absolute value, where 0 indicates that a feature is perceived identically, and 5 indicates that it is perceived in an extremely different manner. The closeness of partnership was expressed as a sum starting out from the logic that the closer the parties perceive cooperation separately, the closer it will be in reality. Therefore, in order to express the closeness of cooperation a new variable was created for each variable expressing the closeness of cooperation, the value of which ranged on a scale of 2 to 12. The main objective was to clarify the co-movement between the new variables of relationship closeness and the values expressing the different perception of relationship effectiveness. However, during the application of this method a serious problem was caused by the missing values (unanswered questions): if these values are replaced with 0, we face a problem of content, since we assume a perception that did not occur in reality. On the other hand, if we replace this value with the average 3.5 points, it may significantly influence the outcome of the study.

For this reason, difference or sum values in the case of which perception by either party could not be identified had to be excluded from the study. We resolved this problem by visualising relationship effectiveness for each relationship with indicators derived from the former values, by taking their mean. The same process was followed in the case of the closeness of cooperation, too. Therefore, if the perception of a value was missing, the difference or sum derived from that value was not taken into account during the calculation of the mean. As a result of this method, we obtained an effectiveness discrepancy indicator and a closeness sum indicator for each (symmetrical) relationship studied.

In order to clarify the correlation between the indicators we applied correlation calculation, the result of which is presented in Table 3.

Table 3. The correlation among the closeness of cooperation, the performance of cooperation and the network effect

		Effectiveness discrepancy indicator	**Closeness sum indicator**
Effectiveness discrepancy indicator	Correlation coefficient	1	-.568(*)
	Significance (bilateral)		.022
	N	19	16
Closeness sum indicator	Correlation coefficient	-.568(*)	1
	Significance (bilateral)	.022	
	N	16	16

Note:*= Correlation at a significant, 0.5% significance level (bilateral), **=Correlation at a significant, 1% significance level (bilateral)
Source: own compilation

It can be understood from the correlation calculation that the closeness of cooperation and relationship effectiveness have significant negative correlation. All this means that the closer the cooperation, the lower the difference between university and corporate perception of the variables of these viewpoints. At the same time it also means that the closer the cooperation between the participants of university-industry R&D partnerships, the truer it is that the parties will perceive the effectiveness of the relationship along the same factors. Based on the above, the second hypothesis specified by the study also turned out to be correct.

Based on the results, the difference of the perception of cooperation closeness and relationship effectiveness is in inverse relation. However, during the study of the closeness of cooperation another question was raised: does the closeness of cooperation influence the perceived level of relationship effectiveness? The problem raises an exciting issue, since if we can answer yes to the question, in the case of higher-level relationship closeness not only the economic effectiveness from cooperation will be perceived at a relatively equal level, but effectiveness will also be valued higher.

The test aiming to answer this question was carried out on a joint sample, by the collective consideration of the users' and service suppliers' viewpoints, since in this case the subject of the test was not the difference in the perception of relationship effectiveness or relationship closeness, but rather the correlation between these two characteristic features of university-industry R&D collaborations. In order to answer the question, in the first step we performed another correlation calculation, the results of which are presented in Table 4.

Table 4. The correlation between the closeness of cooperation and the performance of cooperation by the collective consideration of the users' and service suppliers' viewpoints

		Mutuality and equality in cooperation	Partners' participation in the cooperation	Transparency of cooperation	Mutual respect	Interest in maintaining the relationship	The relationship between cooperation and organisation identity
Financial effectiveness of cooperation	Correlation coefficient	.550(**)	.509(**)	.594(**)	.611(**)	.710(**)	.493(**)
	Significance (bilateral)	.000	.000	.000	.000	.000	.000
	N	62	62	62	62	62	62
Technical/ technological effectiveness of cooperation	Correlation coefficient	.492(**)	.631(**)	.716(**)	.626(**)	.698(**)	.365(**)
	Significance (bilateral)	.000	.000	.000	.000	.000	.003
	N	62	62	62	62	62	62

Note: *= Correlation at a significant, 0.5% significance level (bilateral), **=Correlation at a significant, 1% significance level (bilateral)
Source: own compilation

It can be concluded from the analysis that there is positive and significant correlation among all variables of the closeness of cooperation and the factors of relationship effectiveness, which indicates the verification of the third hypothesis by itself. On the other hand, though, the clarification of the relationship between the closeness and effectiveness of cooperation requires the conduct of a regression analysis.

For the unanimous expression of the closeness of cooperation we described the individual components with a single factor. For this operation we resorted to the previously applied main component analysis. The conducted main component analysis showed that the components applied for the description of relationship closeness can be expressed with a single main component as a factor. The factor preserves nearly 63% of the original information content of the variables (which we find acceptable on the basis of the applied criterion), and the co-movement of the components and the factor is extremely strong (Table 5, Table 6).

Table 5. Preservation of the information content during the testing of the closeness of cooperation factor by the collective consideration of the service supplier's viewpoints

Preserved information content						
Component	Own values			Sum of square of loading variables		
	Total	As a percentage of variance	Cumulated percentage	Total	As a percentage of variance	Cumulated percentage
1	3.764	62.737	62.737	3.764	62.737	62.737
2	.744	12.406	75.144			
3	.621	10.351	85.494			
4	.396	6.596	92.090			
5	.304	5.062	97.152			
6	.171	2.848	100.000			

Note: Applied method: Main component analysis
Source: own compilation

Table 6. Results of the main component analysis of the components describing the closeness of cooperation, by the separate consideration of the service suppliers' and the users' viewpoints

Co-movement of the components describing the closeness of cooperation	
	Component
	Closeness of cooperation
Mutuality and equality in cooperation	.718
Partners' participation in the cooperation	.842
Transparency of cooperation	.838
Mutual respect	.843
Interest in maintaining the relationship	.854
The relationship between partnership and organisation identity	.628

Note: Applied method: Main component analysis
Source: own compilation

After expressing relationship closeness in this manner, we studied the regression relationship between the closeness and effectiveness of cooperation by studying separately the relationship between the two factors expressing the effectiveness of cooperation and the 'closeness of cooperation' factor. The test results indicate that relationship closeness significantly influences both the financial effectiveness of cooperation (R=0,731; R^2=0,534), and the technical/technological effectiveness of cooperation (R=0,756; R^2=0,571) (Table 7; Table 8).

Table 7. Regression parameters during the testing of the correlation between the financial effectiveness and closeness of cooperation

Regression parameters								
Model		Non-standardised parameters		Standardised parameters	t	Sig.	Tolerance	VIF
		B	Scatter	Beta				
1	Constant	-.024	.091		-.258	.797		
	Closeness of cooperation	.742	.092	.731	8.081	.000	.731	.731

Note: Dependent variable: financial effectiveness of cooperation
Source: own compilation

Table 8. Regression parameters during the testing of the correlation between the technical/technological effectiveness and closeness of cooperation

Regression parameters								
Model		Non-standardised parameters		Standardised parameters	t	Sig.	Tolerance	VIF
		B	Scatter	Beta				
1	Constant	-.027	.088		-.304	.762		
	Closeness of cooperation	.769	.088	.756	8.707	.000	.756	.756

Note: Dependent variable: financial effectiveness of cooperation
Source: own compilation

Based on the above, the third hypothesis can be considered verified, too, since by increasing the closeness of cooperation both the perceived financial effectiveness and the perceived technical/technological effectiveness change in the positive direction.

6. Research limitations

Although the test results confirmed our expectations, we must emphasise the limitations of our pilot research project, which emerge due to the complexity of the correlations addressed, the explanatory power of the presented regression relationships, the small size of the sample used in the research, and the time series used.

The discovered correlations can be rightly criticised for the fact that apart from relationship closeness they did not involve parameters such as trust, satisfaction or commitment that would probably significantly influence relationship effectiveness. The correlations detected between relationship closeness and the effectiveness of cooperation let us conclude that the classic factors of relationship marketing have an influencing power here, too. This is also confirmed by the regression relationship discovered between the two correlations addressed, the explanatory power of which indicates that relationship closeness is only partly responsible for relationship effectiveness. However, at this stage the analysis of these missing correlations was beyond the objectives of our study. As referred to in the section that presented the subject of our study, at the current stage our primary objective was to reveal whether in these nonbusiness-business interactions, which are laden with significant conflicts of interests and often conflicts of approaches, relationship behaviour produces added value for the parties, or not. Our results show that it does produce added value, on the basis of which relationship-specific behaviour is unanimously recommended for the parties to such partnerships.

However, at this point we must draw attention to the pilot nature of the study, the limitations of which suggest prudence in the generalisation of the results. Although the concluded results are promising, testing of the revealed correlations on a larger sample represents a further task.

In addition to involving further factors and enlarging the sample, the research conducted can also be expanded by performing longitudinal tests, which allow for studying the depth of the correlations among the not yet fully explored characteristics of this field.

7. Summary

In this study we examined the correlations between the economic effectiveness and closeness of university-industry R&D collaborations. The actuality of the topic is underlined by the fact that in the past decades these partnerships have become the focus of interest of both the economic development actors and the knowledge-based industries, and the successful management of the partnerships has become a central issue for these sectors. On the other hand, though, the successful management of university-industry partnerships is far from being evident, since the actors' expectations towards these business-nonbusiness relationships are so different that they can radically undermine the success of these partnerships.

In the course of our study we started out from the correlation according to which in closer collaborations the relationship-specific investments made by the parties, and the approximation of the processes yield common interests and expectations, as a result of which the parties' perception of the effectiveness of cooperation can be converged.

In order to explore the problem, we studied three fundamental questions: how can the effectiveness of university-industry R&D collaborations be described; how is this effectiveness perceived by the parties involved in the relationship; how can the perceived relationship effectiveness be influenced by the closeness of cooperation?

Our research concluded that the economic effectiveness of university-industry R&D collaborations can be expressed in terms of financial effectiveness on one hand, and technical/technological effectiveness on the other. Financial effectiveness means all those financially interpretable benefits that the parties gain by cooperating with each other, while

technical/technological effectiveness includes all those economic benefits that the parties gain during or as a result of cooperation, which cannot or can only hardly be expressed financially. Through the detailed study of the financial and technical/technological effectiveness we concluded that it is perceived differently by the buyer (corporate partner) and the supplier (university partner). At the same time we proved that the closer the relationship, the greater the perceived relationship effectiveness, and closer cooperation also induces similar perception of the relationship effectiveness by the parties.

Our research can be regarded a pilot project – primarily due to the size of the sample tested – and the promising correlations revealed in the research project encourage us to repeat the test on a larger sample.

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