



HOW SHOULD WE HANDLE THE RISKS IN PROJECTS? – ACCORDING TO THE OPINION OF HUNGARIAN SMES’

Csiszárík-Kocsir Ágnes habil. Ph.D, Associate Professor, Óbuda University



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Abstract

Projects are key players in modern economies, the main promoters of economic growth. All successful investments are the results of one or more projects, so it is very important that the projects are managed successfully. Risk management is a major part of project management. Risk is an event usually with a negative effect, so it has to be calculated and prepared to handle it, otherwise the risk will be a threat or a problem.

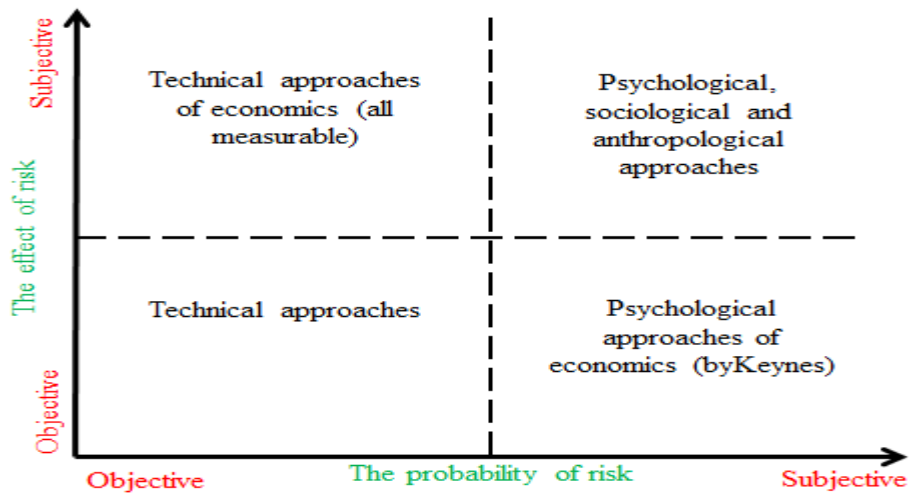
Most of the risks are invisible at the beginning, and can't be designed for any strategy, but the most significant risks need to be calculated and planned. The best solution depends on the type of the risk, but how do companies handle the risks? The purpose of the study is to present project risks and treatment methods based on the opinion of Hungarian companies, showing the most commonly used methods.

Key words: *Project risk, risk management, primary research, SME*

JEL code: M21, E22

Introduction

The researchers have long been interested in the recognition and more in-depth exploration of the definition and types of risk in all the sectors of the economy. Risks are integral parts of our everyday lives, both at a personal and organizational level. Projects are not exceptions either. Risks are present both in the external and internal environment of the enterprises, thus in the micro and macro environment of the projects too. The definition of risk is normally associated with something negative, although it is an event or happening that can have a negative and positive impact as well on the profit or project result of the companies. According to Renn (1992), risks are growing on the breeding ground of uncertainty, and uncertainty is the future itself, based on the author's way of thinking. The future can never be known with full certainty, which is why the different forms of risk and their different strengths must always be taken into account. In the everyday language the definitions of risk and danger often get mixed, albeit they are strongly divergent. On one hand, a risk can mean a positive or negative outcome too, and in risks there is always an opportunity for action, namely that we can do something about them, we can assess and manage them (Bonss, 1998), while dangers usually come with negative consequences and they occur independently of the organization. Dangers cannot be – or very hard to be – prepared for, so it is preferable to deal with them in the risk management period. With regard to risks it does make a difference how big their probability is to materialize, or how big their estimated effect is. On the basis of these two factors Vasvári (2015) set up a matrix that shows the two factors, along with their subjective and objective value judgements.



Source: According to Vasvári (2015) own compilation

Figure 1.: **The effect and probability of risk**

The risk control of the enterprises has a significant literature background in the form of risk management, which also applies to the projects after certain changes and reconsideration. The goal of risk management for the enterprises is handling the risks for the purpose of profit maximization (Domokos et.al, 2015). Profit maximization is one of the basic strategic goals of an enterprise, in addition to expansion and growth. However, the road to increasing profit is full of risks, which can either be managed or transferred. Based on the literature of strategic management, two prevailing views have emerged in terms of sharing the benefits and risks: value-creating and risk-sharing perspectives (Melese et.al, 2017). From the perspective of value creation the issue may be interpreted as the stakeholders are cooperating for the sake of achieving the goal representing the value, and then they share the obtained profit among each other. The risk-sharing perspective can be interpreted in a similar way, only this time the goal is sharing the risks. In the case of projects these two features also dominate, and the only question is how the value and risks are shared between the actors and stakeholders.

Risks are inherent elements of every project. The latest edition of PMBOK deals with project risks from two aspects:

- Individual project risks, which will have a negative or positive impact on one or two projects when they occur,
- Overall project risks, which include the individual project risks as well, have an effect on the whole project and they are able to influence the project results positively or negatively.

Part of the risks derives from the complexity of the projects. With regard to the complexity of the projects, Geraldi et al. (2001) named the following five dimensions: structural complexity, uncertainty, dynamic, pace – speed, and socio-political dimensions. Every one of them is a risk-generating factor that needs to be evaluated in the course of an exploratory analysis.

The risks are meant to be handled by the risk management of the project (PRM⁵), which is more and more considered to be a factor increasing the probability of the project's success

⁵ PRM = Project Risk Management



(Olechowski et.al, 2016), yet the usage of these techniques and tools is still rather occasional to the project managers (Raz et.al, 2002). Several techniques exist for the management of risks. Some of them can be eliminated by insurance, while others can be minimized or shared (Lewicki et.al, 1998) by an appropriate calculation, like for example by NPV calculation (Paquin et.al, 2016) or by contracts (Adler et.al, 2016), but still there are factors that remain unmanageable. Fekete (2009) mentions two levels of risk management:

- risk controlling, as a cause-specific measure (reducing the probability of occurrence, reducing the effect), and
- risk financing, as an effect-specific measure (insurances, contracts).

Rudnik and Deptula (2015) found the fuzzy system to be optimal for the assessment of project risks, but they did not define action plans about how to handle risks and in what form. Kumar and Yadav (2015) suggested a computer risk analysis, and therefore they also examined what kind of relationship could exist between the risk factors and the project result based on the BBN method. Kosztyán (2015) recommended using the matrix-based project design technique when there are flexible interdependencies between the certain activities.

The risks can be very diverse, and there are several forms of their categorization. Renn (1998) claimed that there are technological risks created by the social environment, high-volume risks that cannot be controlled by individuals, monetary risks and risks voluntarily taken by individuals. Coenen (2004) named five groups of risks: market risks (competition), operational risks (operation), financial risks (equity transactions, exchange rates, interest rates), environmental risks (legislation, business), and other risks (organizational structure, natural environment).

Research results and discussion

1. Methodological background

The research results introduced in this study are part of a primary questionnaire research conducted in 2017. The research was carried out in Hungary with the help of a pretested and standardized questionnaire form. The present research was preceded by a previous survey among enterprises, which had been preceded by an in-depth interview analysis. The present questionnaire form was created as a result of these two former rounds, and it was a complex questionnaire, covering the financing and investment activity of the enterprises. The survey paid special attention to the enterprises' project management and project financing practices as well. During the research we received 521 questionnaires, but only 416 of them were assessable enough to be included in the sample. The results of the research are presented in this study based on the employment figures of the responding enterprises. The composition of the sample is illustrated in the below graph.

As it is shown, the majority of the sample, 85%, comprised of smaller enterprises with less than 50 employees, which meant 355 enterprises. The proportion of the medium-sized enterprises was 9% (38 enterprises), while the larger companies had a percentage of 6% (23 enterprises), therefore it can be established that the results presented in this study introduce the possible ways of assessing risk management tools mainly from the aspects of the small and medium-sized enterprises.

2. The results of the research

There are several options for managing risks. The project promoters choose to reduce the risks most of the times, if they have the opportunity. In the proactive approach reducing the risk

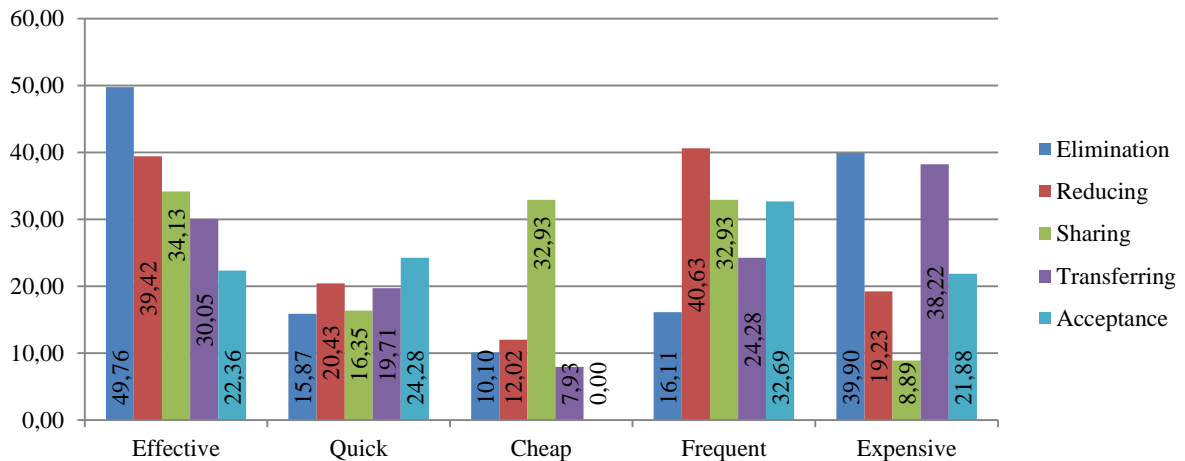


basically means its prevention, but in order to do so it is necessary to know the risk in advance. In the reactive approach reducing the risk means reducing the effect of the event itself. Risk aversion seems to be an adequate method too. In this case the risky activities that are deemed dangerous in this regard are left out of the project.

There is another actor that gets usually involved in sharing the risks, namely the insurance companies, who take on the negative burdens deriving from the occurring risks under appropriate conditions. The risks can also be shared between involving subcontractors.

In the context of this study the most important risk reactions are reviewed (elimination, reduction, sharing, transfer, acceptance), together with the assessment of their potential characteristics (efficiency, quickness, cheapness, frequency, costliness). On top of their introduction, in the study the individual reactions are presented along the characteristics, mainly on the basis of the opinion of the Hungarian small and medium-sized enterprises and the percentages of the answers.

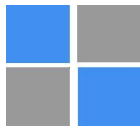
The below graph shows that the respondents considered the elimination of risks as the most effective method, but they were also aware that this is an expensive solution of risk management, as it is proven by the average ratings too. With respect of reducing the risks they highlighted the efficiency again, but there is an even higher emphasis on the fact that unfortunately it is a frequently used mode of management. Efficiency as the primary aspect also came up with regard to sharing the risks, which at the same time was considered to be a cheap and common method as well. Risk sharing is mainly carried out through insurances, the value of which is insignificant compared to the potential danger. This is why the respondents underlined cheapness in connection with sharing. The transfer of risks was undoubtedly deemed an expensive method, although efficiency was a key factor here too. Unfortunately the acceptance of risks is a common reaction, as the results of the research confirmed.



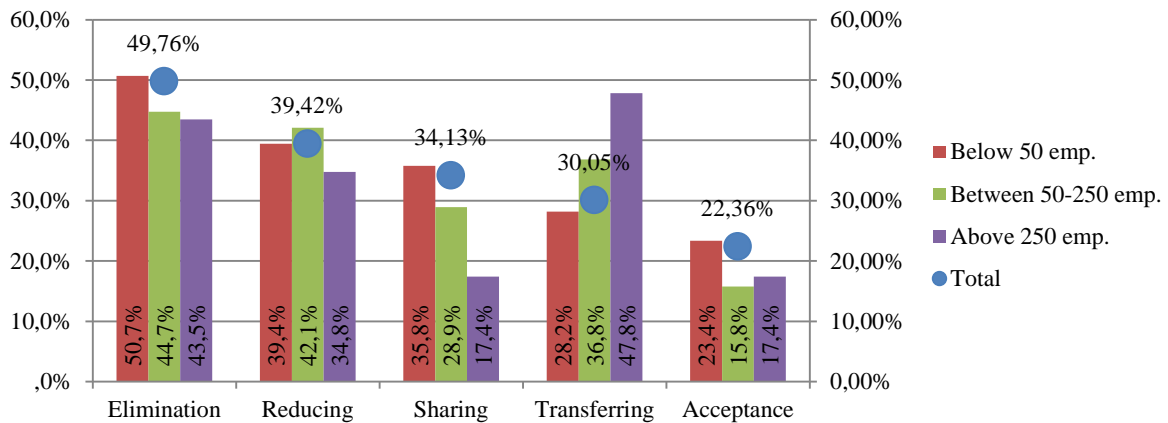
Source: own research, 2017, N = 416

Figure 2.: Evaluation of risk management methods from different aspects

Hereinafter we examine the above introduced risk management methods by their efficiency in terms of the groups created on the basis of the size of the respondents. Regarding efficiency the enterprises ranked the elimination first (49.76%). The elimination of risks arises as an even more meaningful measure in the case of enterprises under 50 employees. Reducing the risks also had a relatively high mean (39.42%), which was more accentuated at the medium-



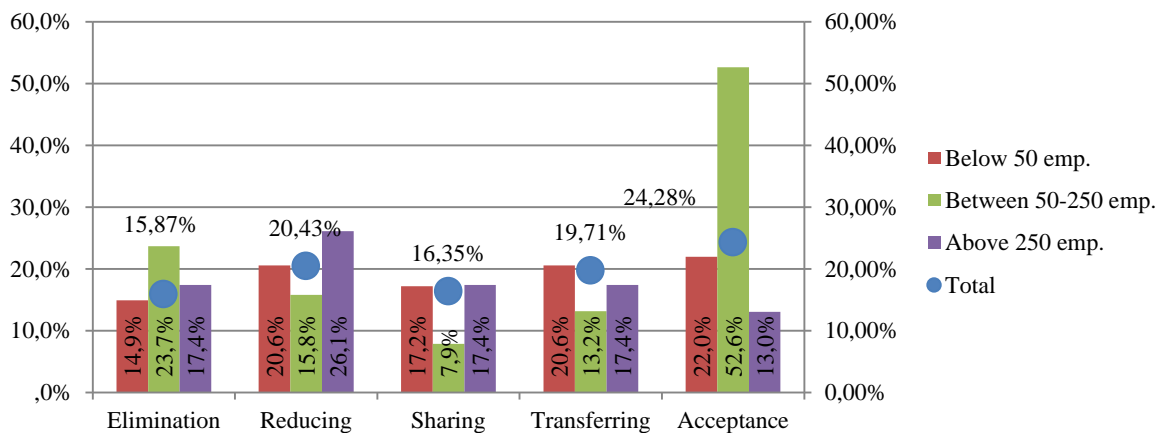
sized enterprises. With regard to sharing, it is the opinion of the smallest enterprises that was slightly above the average rating, or in other words they were the ones considering risk sharing to be the most effective method, compared with the other groups. The medium-sized and largest enterprises gave answers higher than the average rating in terms of the efficiency of transferring the risks, so according to their point of view it is an effective solution as well. Acceptance was ranked higher by mostly the smaller enterprises, since often this is the only risk management method available to them due to their situation and strength.



Source: own research, 2017, N = 416

Figure 3.: Evaluation of risk management methods by the effectiveness according to the opinion of the respondents

In connection with quickness it can be established that acceptance received the highest average rating (21.28%), which was only exceeded by the medium-sized enterprises, as half of them argued in favour of the quickness of acceptance. Reduction got a similarly high rating too, and of the responding enterprises the smallest and the largest ones underlined only this method with higher percentage than the mean. It was also the smallest and the largest enterprises who found sharing to be fast, and the situation was the same for transferring the risks. It can be stated that from the aspect of quickness none of the listed methods were given a high figure by the respondents, which is also clearly shown in the graph below.

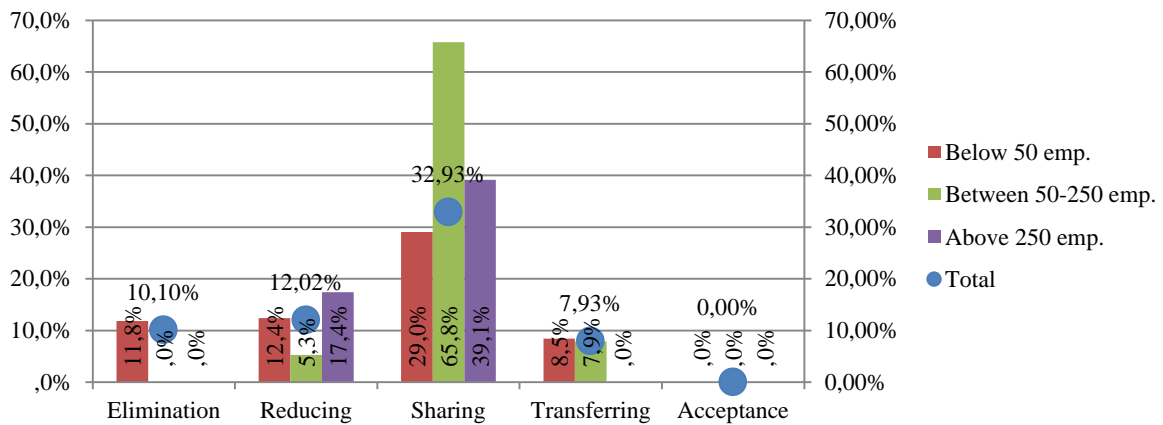


Source: own research, 2017, N = 416

Figure 4.: Evaluation of risk management methods by the quickness according to the opinion of the respondents



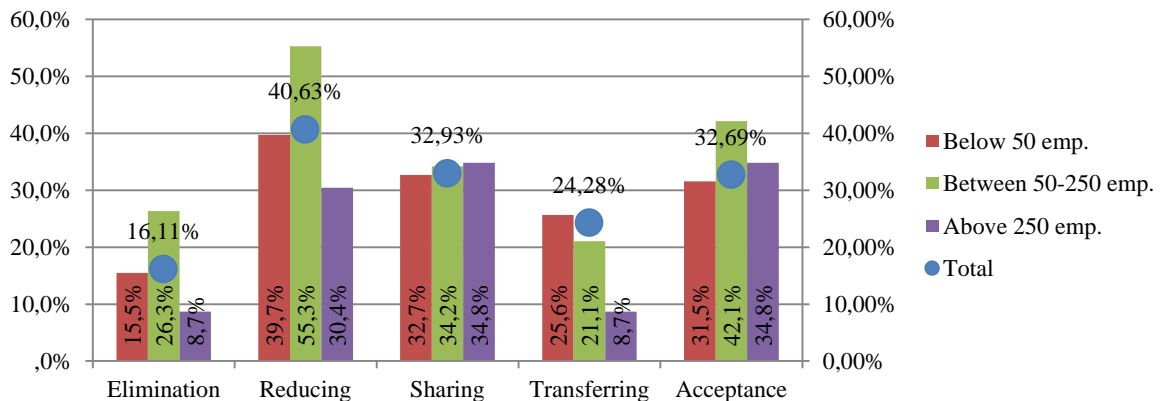
It can be seen in the below graph that a very small percentage of the responding enterprises deemed the listed risk management methods cheap. The only exception was sharing, with a 32.93% average rating. This percentage was higher in the case of the medium-sized and the largest enterprises. All the other risk management methods were around 10% with regard to cheapness, which implied that the enterprises did not find any of the methods cost-effective for risk management purposes. Interestingly, acceptance received a complete rating of 0%, so every responding enterprise agreed that acceptance is not a cheap method at all, in fact, it had rather proved to be an expensive and costly instrument.



Source: own research, 2017, N = 416

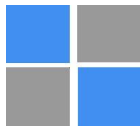
Figure 5.: Evaluation of risk management methods by the cheapness according to the opinion of the respondents

Concerning the frequency of applying the methods, the most popular solution seems to be reducing the risks, which was used by the medium-sized enterprises the most often based on the graph below. About one-third of the enterprises said that sharing and acceptance were relatively common ways of handling the risks. In the case of both methods the medium-sized and the largest enterprises were the ones showing higher than average ratings. It is peculiar that elimination was not considered as a frequently used method, which is confirmed by the 16.11% average rating and only the medium-sized enterprises were able to produce higher figures than that.

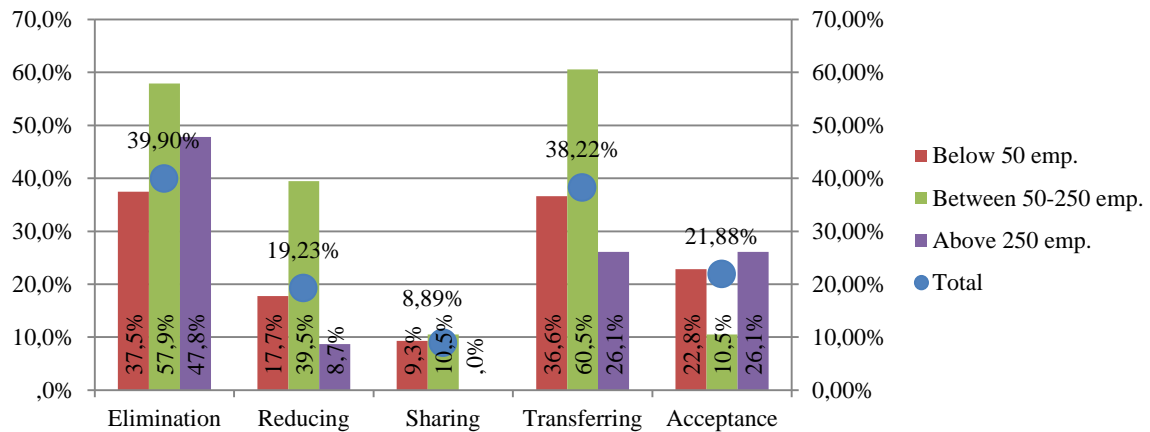


Source: own research, 2017, N = 416

Figure 6.: Evaluation of risk management methods by the frequency according to the opinion of the respondents



Last but not least, I have examined the costliness of risk management too. The responding enterprises deemed the elimination and transferring of the risks the most expensive procedures. While the average rating of risk elimination was 39.9%, exceeded by the medium-sized and the largest enterprises, transferring the risks got an average rating of 38.22%, which was also exceeded by the medium-sized enterprises, where 60% of the respondents favoured this feature. Acceptance had a lot lower rating in terms of costliness, and the enterprises found risk reduction to be the least expensive method.



Source: own research, 2017, N = 416

Figure 7.: Evaluation of risk management methods by the cost according to the opinion of the respondents

Conclusions

There are numerous modes and tools for the risk management of projects. A myriad of literature deals with the issue for the sake of providing more knowledge and information to the enterprises, so that higher proportion of the projects may reach their designated goals. On the basis of the research results it is clear that the most important aspect for the project promoters in relation to the chosen risk management method is to be rather effective, which definitely has a major significance in practical terms. With respect to frequency they mostly chose risk reduction and sharing, but acceptance was not far behind the most commonly used methods either. Regarding the costliness of the risk management methods it was apparent for the enterprises that sharing is the cheapest procedure, whereas transferring and eliminating the risks were felt to be expensive.

On this basis, it can be concluded that in connection with the Hungarian small and medium-sized enterprises the field of risk management needs to be improved. The potential toolkit should be enhanced and the professional knowledge of the project promoters should be widened as well, so the majority of the projects could be carried out successfully instead of joining the group of failed projects. The professional support organizations should play a larger role in this, but the educational institutions should also promote the acquisition of knowledge through various methodological publications, awareness-raising presentations and brochures. Hopefully in the future the knowledge on risk management will be wider and it will be integrated into practice in greater proportion too in order to break the trend ongoing for many years, namely that only one-third of the projects can achieve the desired goal.



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