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PROJECT MANAGEMENT IN SMALL AND MEDIUM ENTERPRISES: A COMPARISON BETWEEN ROMANIA AND POLAND

Abstract: *Currently there a growing number of enterprises which organize their work in form of projects. In this paper we investigate project management practices implemented by a special group of business entities- micro, small and medium enterprises from two developing economies: Poland and Romania. For the purpose of the research a questionnaire was designed and distributed among Polish and Romanian companies. We used statistical methods to analyse the results. Results show the existence of significant differences in the absorption of project management standards in the processes of project and risk management, the difficulties encountered in carrying out specific project management activities as well as building relationships with project stakeholders. The findings of this study form an interesting basis for further analyses of what factors stimulate and hinder SMEs from implementing project management practices.*

Keywords: *emerging economies, project management, Poland, Romania, SMEs.*

JEL Classification: C12, M19, O22

1. Introduction

Currently literature recognizes the role of project management practices in building project and company success. The use of project management techniques and tools has been confirmed to have a positive influence on growth, innovation as well as the productivity increase (Frame, 2003).

In spite of many studies that have been conducted in the area of project management the majority of them referred to large companies and complex projects with only few dedicated to project management practices in SMEs. This limited research on project management in SMEs confirmed however that project

management approach has been of high significance for this group of businesses (Turner, Ledwith, & Kelly, 2009). In case of European SMEs projects generated one third of the turnover while in North America half of the turnover resulted from project based work (Turner, Ledwith, & Kelly, 2009). Turner and Ledwith (2016) found also that projects taken by SMEs are rather small while the project management practices tend to be more informal. The rate of formality seemed to be growing with the size of the firm.

Although the studies related to project management in micro, small and medium enterprises have shed light on a number of aspects related to projects in these businesses surprisingly little research has been so far dedicated to recognizing what factors cause that micro, small and medium enterprises encounter difficulties while managing projects. Accordingly, these studies were mostly carried out in well developed economies and were not able to capture the specificity of SMEs from emerging economies that both Poland and Romania represent.

This study attempts to address this gap by studying the nature of project management practices implemented by a special group of business entities-micro, small and medium enterprises from two developing economies from Eastern Europe: Poland and Romania. Three research questions have been formulated: 1. do the studied SMEs organize their work in form of projects? 2. Do Polish and Romanian SMEs differ in a way they manage projects (for example by the standard they use, stakeholder approach and analysis) 3. What are the most significant difficulties that the studied businesses from both countries encounter while managing projects and what are the key influencing factors?

By formulating the above questions, the study follows the research path initiated by Turner, Ledwith and Kelly (2009b) who underlined the significance of investigating to what extent small and medium enterprises employ projects and project management techniques.

This research responds to the calls to develop deeper understanding of how SMEs manage projects (Murphy & Ledwith, 2007). The study contributes to traditional SMEs literature by identifying and accounting for the role of project management practices in this group of companies. From an academic perspective it provides a cross-cultural empirical work regarding SMEs from two Eastern European emerging economies.

2. Theoretical background

2.1 SMEs and their role in the economy

The significant role of micro, small and medium enterprises in stimulating economic growth has been widely confirmed in literature. This group of companies which constitutes the majority of business entities in every economy is a key player especially in stimulating employment and economic growth of particular economies (Hallberg, 1999). What has to be underlined is the fact that this effect is independent of the stage of development of economies. The mechanism is the same in case of well developed economies, as well as the developing ones. In his study

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Floyd and McManus (2005) confirmed the growing role of SMEs in the European Union where they constitute even 99% of all businesses. For the last years this group of companies has been responsible not only for generating more than half of the GDP but also for the major part of employment in all countries of the European Union.

According to Turner, Ledwith and Kelly (2009) the key role of SMEs in economies is related to the activities they take in the area of innovation. However in order to be able to contribute to supporting the economic growth these businesses need to increase their competitiveness (Chmielak, Ejsmont, & Zabielska, 2018). Turner, Ledwith and Kelly (2009) emphasize that project management can be one of the potential solutions which when properly used can significantly contribute to increasing innovativeness of SMEs. At the same time SMEs, due to their limited financial resources, are in their operations, more often than larger companies confronted with obstacles and other difficulties (Marcelino-Sádaba, Pérez-Ezcurdia, Echeverría Lazcano, & Villanueva, 2014). As a result it is especially important for these entities to develop techniques and tools that enable them coping with constraints that appear.

The role and influence that SMEs have on the development of economies in the emerging countries is found to be even stronger in comparison to well developed economies (Turner, Ledwith, Kelly, 2010). For the purpose of this study the definition of SMEs by the European Commission (2005) has been used. Table 1 presents the definition of SMEs issued by the European Commission.

Table 1. Defining micro, small and medium enterprises

<i>Type of enterprise</i>	<i>Criterion</i>		
	Employment, persons	Annual turnover, mln. EUR	Annual balance sheet total, mln EUR
Micro	<10	<=2	<=2
Small	<50	<=10	<=10
Medium	<250	<=50	<=43

Source: (European Commission, 2005, p. 11)

Moreover, in order to deepen the research the additional criteria were used to categorize the studied businesses. They included the following: the number of years the company has been present in a market, type of business activities conducted (trade, manufacturing, services, other), range of business activities (local, regional, domestic, global). We also investigated the family character of an enterprise by identifying the following: family ownership of the firm, generation managing the company. In addition the specificity of projects implemented was determined- complexity of projects, character (investment, non-investment) and project duration.

2.2. Project management practices in micro, small and medium enterprises

For the purpose of this study project is defined following 'A Guide to the Project Management Body of Knowledge', as '*a temporary endeavour which is undertaken to create a unique product, service or result*' (PMI, 2008, p. 5). Although project by its nature is characterized by a variability from context to context (Van Der Hoorn & Whitty, 2015) there can be observed some common rules regarding the way projects are implemented in an organization.

The studies that have been conducted have already explained many aspects and areas related to the successful project management and project success. The researchers have shown that not only project success is understood in a different way by particular project stakeholders (Cooke-Davies, 2002) but also that the project itself can be understood differently by project managers. As a result, they can take a different project approach. Andersen (2015) confirmed for example that project managers can represent either a task approach where the project is 'seen' as a series of tasks that have to be delivered according to the assumption of project triangle or that they can take an organizational perspective where the main objective of the project as a temporary form of organization is to deliver value in a long-term perspective.

At the same time many studies confirmed that project failures are becoming more and more common. The research by Standish Group (2015) showed that 31.1% of projects will be cancelled before their start date. In similar, the majority of projects 52.7% will exceed their budget (Hastie & Wojewoda, 2015). This phenomenon is independent of project type as well as the company and the sector projects are implemented in. Shenhar and Dvir (2008) emphasize that the size and frequency of both project fails and delays is currently too high to ignore this phenomenon. This aspect is particularly crucial in case of micro, small and medium enterprises where, due to the restricted financial resources, project failure can cause consequences which are more serious than in case of larger companies which don't have that limited financial resources. From this point of view it is crucial to study, from a perspective of this group of businesses, what are the key factors causing difficulties while managing projects. Moreover Joslin and Mueller (2015) in their cross-country, worldwide study found a positive relationship between project management methodology and the success of a project. The authors confirmed that the project management methodology used by a company accounts for 22.3% of the variation in project success. In the context of the aforementioned results it is important to study whether SMEs in projects they manage use any of the recognized project management methodologies, whether they create their own standards, they manage projects with no determined methodology and what are the reasons.

Murphy and Ledwith (2007) surveyed small and medium enterprises representing the Irish high-technology services finding that the success of projects is strongly supported by two main factors: the existence of a person in position of a project manager and employing project planning techniques. Moreover the

research confirmed that other significant factor influencing success of projects is controlling the project by the owner-manager (Murphy & Ledwith, 2007). The third key success factor that was confirmed was having clearly defined project objectives as well as the support from the top management of a company. These findings forward attention to an important aspect of distinguishing among enterprises which are owned and controlled by families and companies which are not. In case of family businesses the factor of family-involvement as an important determinant of project management can't be omitted and has to be included in the studies especially as some research showed that there is a relationship between employing project management tools and techniques and decreasing the family involvement (Sadkowska, 2018).

Other studies confirmed that small and medium companies 'use' project management (Turner et al., 2009). It is not striking what came from this study that the smaller the company the smaller were the projects implemented by this business entity. Similarly, smaller businesses employed less formalized approach towards managing projects. This approach of SMEs towards project management was also confirmed by Aquil (2013) who studied five SMEs, two of them being family owned companies. The results of this study confirmed that small and medium enterprise need a 'lite' version of project management approach. This was caused first of all by the financial, time and resource constraints of these companies. But what is surprising is what Turner, Ledwith and Kelly (2009) found high-tech companies expenditures on projects were lower than the expenditures of service companies and low-tech companies. The paradox of this finding results mainly from the fact that on one hand the larger companies implemented more complex projects and used more advanced project management techniques but at the same time high-tech businesses spent less financial resources on them. This might suggest that these projects are either less capital intensive or that the advancement of project management techniques allowed these companies to decrease the cost. This aspect however requires deeper studies covering the specificity of the particular projects.

It has been confirmed that SMEs need less bureaucratic forms of project management when compared to larger firms (Turner et al., 2010), which is mostly caused by the specificity of this group of businesses. However what emerges from the studies is that SMEs approach towards project management differs depending on the country they represent.

3. Methods

In this study we compare SMEs from two emerging economies: Poland and Romania to investigate whether the studied enterprises employ project management practices including PM standards and tools. Then we analyse what are the most significant difficulties that the studied SMEs encounter while managing projects. The analysis was carried using the sample of sample of 75 (N=75) micro, small and medium-sized enterprises representing Poland and Romania. The study used as the main method of data collection, the questionnaire.

The questionnaire contains 18 questions. The first 8 questions focus on identifying the current situation of small and medium-sized enterprises in the area of project and risk management while the following 10 questions aim to identify the characteristics of the studied small and medium-sized enterprises and the specificity of projects managed by the studied enterprises. The questionnaire was distributed to small and medium-sized enterprises in Romania (September-October 2017) and Poland (March-April 2018). In Romania the questionnaire was designed using the Google Forms platform and the distribution was made by e-mail. The information on the companies was provided by the *National Council of Private Small and Medium Enterprises in Romania*, in the form of a list, which included the addresses of 150 small and medium enterprises, so the response rate was 23.33% (35 responses). In Poland, the projected questionnaire was distributed to 156 small and medium enterprises either by the researcher or using the Google Forms platform, with a response rate of 28.84% (45 responses).

For data analysis purposes, the interviewed entities were grouped into two categories: Romanian small and medium enterprises (Romanian SMEs) and Polish small and medium-sized enterprises (Polish SMEs). The criterion for identifying SMEs was the uniform formal definition presented in the Recommendation of the European Commission (2005) and in the European Commission Regulation (2004). Table 2 expose the distribution of respondents by types of companies in Romania and Poland using this approach.

Table 2. The distribution of respondents by types of companies in Romania and Poland

<i>Company type</i>	<i>Romanian SMEs</i>	<i>Polish SMEs</i>	<i>Total</i>
Micro	20	26	46
Small	7	2	9
Medium	8	12	20
Total	35	40	

Source: Own calculations

In Romania almost half of SMEs have been present in the market from 10 to 25 years (42.90%), followed by those with a market activity ranging from 5 to 10 years (31.40%), over 25 years (14.30%) and between 1 and 5 years (11.40%). The surveyed enterprises operate mostly in the service sector (62.90%), they are less frequently involved in manufacturing (11.40%) and trade (11.40%) or in other sectors (14.30%) such as the banking sector, IT and construction. Most of the studied small and medium-sized enterprises confirmed a domestic range of their business operations (28.60%), followed by local ones (25.60%), regional (25.60%), and global (20%). Most of the projects managed by small and medium-sized enterprises in Romania are complex projects (51.40%), based on investments (65.70%) and lasting less than a year (54.30%).

In Poland the studied businesses have been present in the market from 10 to 25 years (35%), followed by those with a market activity ranging from 5 to 10

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years (22.50%), between 1 and 5 years (22.50%), and more than 25 years (17.50%). The surveyed enterprises operate mostly in the services sector (65%), less frequently being involved in manufacturing (22.50%) and trade (12.50%). Most of the small and medium-sized enterprises run their business operations in a domestic scale (40%), followed by local (27.50%), regional (20%) and global (12.50%). In terms of project characteristics, the majority of projects which are managed by SMEs in Poland are complex projects (63.90%). However, on the contrary to the results obtained for Romanian SMEs, they were not investment projects (54.10%) and their duration was shorter than one year (60%).

In the study the following hypotheses were formulated:

H1: The studied companies from Romania and Poland do not differ in terms of frequency of managing projects.

H2: The studied Polish and Romanian enterprises do not differ in terms of employing project management standards.

H3: The studied Polish and Romanian enterprises do not differ in terms of the difficulties they encounter while managing projects.

H4: The studied companies from Romania and Poland do not differ in the way they evaluate the stakeholders in terms of the risks that could produce to their projects.

H5: There are no differences between the Romanian and Polish companies regarding the extent to which project risks are managed.

H6: There are no differences between the Romanian and Polish companies regarding the formalization of the risk management practices in projects.

H7: There are no differences between the Romanian and Polish companies regarding the degree of difficulty of certain activities on risk management in projects.

The questionnaire responses were statistically analysed with Z-test for two samples. The process of research hypothesis verification adopted a significance level $\alpha = 0.05$ and a two tailed critical region. The results of the statistical test were obtained using the analysis tools in the Microsoft Excel package, called Z-test Two Sample for Means, based on the following formula:

$$Z \text{ test} = \frac{\bar{X}_1 - \bar{X}_2 - \Delta}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

Where:

\bar{X}_1, \bar{X}_2 -average of the first sample, average of the second sample;

Δ - hypothesized difference between the population means;

n_1, n_2 - volume of the first sample, volume of the second sample;

s_1, s_2 - variation of the first sample, variation of the second sample.

4. Results and discussions

The results suggest the occurrence of significant differences regarding the project management in SMEs from Romania and Poland.

The first question focused on the extent as the companies implement projects. The result are presented in Figure 1.

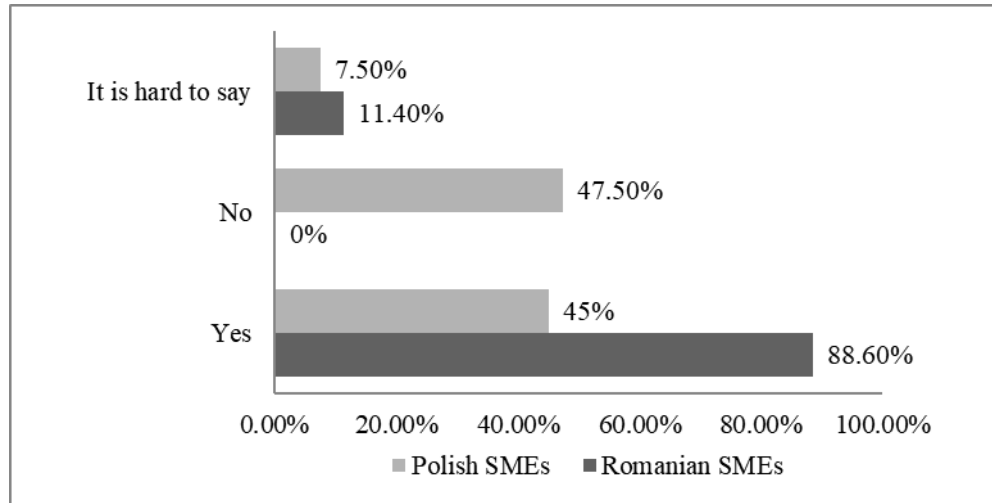


Figure 1. The situation of Romanian and Polish SMEs regarding the structuring of work in the form of projects

Source: Own calculations

Considering that the significance level of $\alpha = 0.05$ and the critical region with two tails were established, the critical value of z is between -1.96 and $+1.96$. The probability of obtaining the observed results (p value) of z test is marked, for scores outside critical areas, with a (*) if it is lower than the significance level of 0.05 .

For the first hypothesis tested z computed is -2.69^* . The results demonstrate that there are differences among the companies from Romania and Poland regarding to the measure in which they are managing projects.

Romanian SMEs showed a rate of 88.60% that conduct their business in the form of projects, and only 11.40% in the company showed indecision in declaring the existence of project management techniques and tools. Of Romanian SMEs who indicated use of project management 58.06% (18) are micro, 22.58% (7) are medium enterprises and 19.35% (6) small. The fact that Romanian companies use the project management practices in an overwhelming number can be an awareness among them of the potential benefits of project management: the development of innovation, competitiveness and production (Chmielak, Ejsmont, Zabielska, 2018; Frame, 2003).

The projects carried out by Romanian SMEs are complex (51.40%), based on investments (65.70%) and shorter than one year (54.30%).

The degree of sophistication of a company's projects varies according to its size in terms of annual earnings and number of employees. Thus, the complexity of project and project management practices used by SMEs is a lighter version

compared to those in large enterprises (Aquil, 2013). Regarding the complexity of the projects implemented by the small and medium enterprises in Romania, there is a slight difference of 1.40% between the complex projects (51.40%) and the simple ones (48.60%). Therefore, complex projects should be found mainly in medium-sized enterprises and simple ones in micro enterprises. This is not the case for Romanian companies, where 55.56% (10) are micro enterprises, 27.77% (5) are medium enterprises and 16.67% (3) small enterprises from the total companies reporting the management of complex projects. At the same time, the micro enterprises are leading to the simple projects 58.82% (10), followed by the small enterprises 23.53% (4), and the medium enterprises 17.65% (3), which verifies the statement presented.

The fact that 65.70% of Romanian small and medium enterprises implement investment projects can be explained by the field of activity in which they operate. Thus 42.85% of the surveyed enterprises operating in services and implementing investment projects. The possibility that services are consulting is very high given the nature of the problems described by them occurring during managing projects. The reported problems are changes in the legal framework, changes in procedures, changes in client requirements, and inconsistency of information provided by institutions. As with complex projects, micro enterprises are those who manage projects for less than one year (28.57%) and for a period longer than one year (28.57%).

The situation of small and medium-sized enterprises in Poland is different, thus 47.50% of respondents indicated that they organize their work in the form of projects. Also, 7.5% of them were undecided to confirm or deny the organization of work in the form of projects, this being possible either in the context of the use of a limited number of project management techniques and tools, or the existence of different approaches of the stakeholders to the project.

The second variant is consistent with the Cooke-Davies (2002) study, demonstrating that stakeholders can have different approaches to the project, Andersen (2015) demonstrates that even project managers have different approaches to the project – task approach and organizational perspectives.

Of Polish SMEs who indicated the use of project management 66.67% (12) are medium enterprises, 27.77% (5) micro and 5.56% (1) small, and of all those who denied the existence of practices project management 94.74% (18) are micro-enterprises and 5.26% (1) are small enterprises.

The projects carried out by small and medium-sized enterprises in Poland are complex (63.90%), non-investment projects (54.10%) and shorter than one year (60%).

The situation of small and medium-sized enterprises in Poland in terms of the complexity of managed projects is similar to that of Romanian companies, meaning that micro-enterprises are leading both in managing complex and simple projects. Of SMEs that manage complex projects 46.15% (12) are micro enterprises, but are on par with medium enterprises with 46.15% (12) and 7.69%

(2) are small. With regard to simple projects, 100% (14) micro-enterprises are the only ones reporting the implementation of such projects.

The second hypothesis verifies the existence of differences between the studied companies regarding the formalization of the project management practices, the statistical value of the Z test is 5.49*, higher than the critical threshold of ± 1.96 . In view of this difference, the null hypothesis for H2 can be rejected, confirming that there are differences among the companies from Romania and Poland regarding managing projects in accordance with the project management standards. Figure 2 presents in detail the situation of the Romanian and Polish SMEs regarding the formalization of project management.

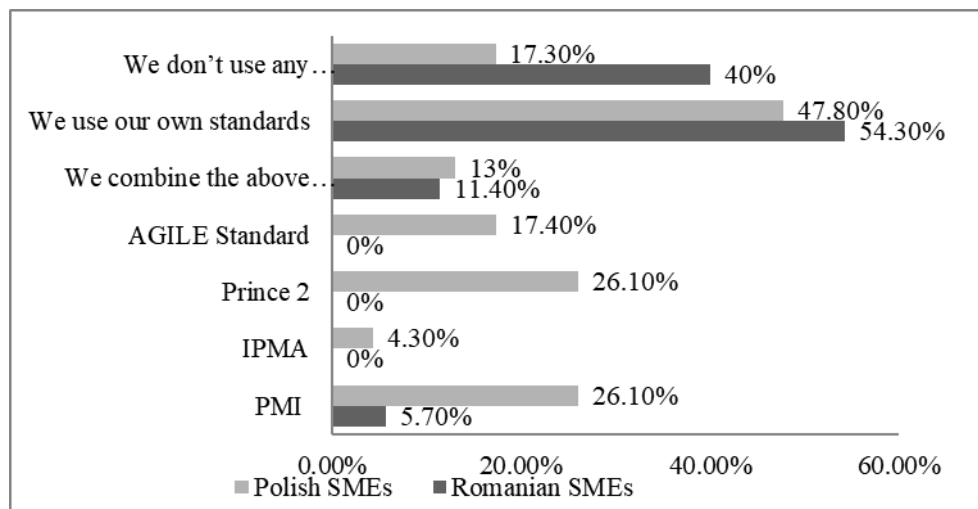


Figure 2. The situation of the Romanian and Polish SMEs regarding the formalization of project management

Source: Own calculations

In Romania, despite the large number of small and medium enterprises managing projects, 40% do not use any standard and there is no formalization of this process that is in line with any of the international standards, so only PMI (Project Management Institute) has a rate of 5.7%. On the other hand, Romanian companies prefer to combine international standards (11.40%) or use their own methodologies (54.30%).

The situation of the Polish organizations is quite different, despite the fact that the proportion of Polish small and medium-sized enterprises managing projects is 43.6% lower than the Romanian ones, the proportion of Polish organizations that do not use any standard is 17.30%, 22.70% lower than the Romanian ones. They also manage projects according to international standards (PMI - 26.10%, IPMA - 4.30%, PRINCE 2 - 26.10%, Agile standards - 17.40%), but also combine the practices of these standards (13%). Just like small and medium-sized enterprises in Romania, those in Poland prefer managing projects

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according to their own standards and good practices (47.80%). Considering the fact that project management according to a project management methodology is 22.3% of the success of a project (Joslin & Mueller, 2015), small and medium businesses in Romania and Poland need to rethink their priorities for project management formalization.

As can be seen in Table 3, for five activities the value of z falls between the critical areas, and only for the way the project is supported by senior management (-4.20*) and the turbulence created by the project environment (-2.34*) z calculated is outside the critical regions.

Taking into account this and the fact that the null hypothesis H3 has a general formulation, encompassing all the activities performed while managing projects, H3 cannot be rejected, noting that there are no significant differences between SMEs in Romania and Poland regarding the degree of difficulty attributed to the activities carried out while managing projects.

Table 3. The level of difficulty attributed by the studied enterprises to the activities carried out while managing projects

<i>Answer options</i>	<i>Test z computed</i>
Keeping up with the project schedule and not exceeding duration of the project	-0.66
Keeping up with the project budget not exceeding project costs	-1.21
Reacting to signals sent by the project environment	-1.29
The turbulences created by the project environment	-2.34*
Problems with the project team	-1.12
The way project is supported by the company (senior management)	-4.20*
Building relationships with project external stakeholders (contractors, suppliers, banks, other partners)	-0.41

Source: Own calculations

The results of the following analysis are summarized in Table 5, which compares the way in which the Romanian and Polish SMEs granted degrees of difficulty to the operations performed while managing projects, taking into account only the grades most voted by the studied companies.

Romanian and Polish SMEs attaches similar difficulty levels to the following vital areas of project management: keeping up with the project schedule and not exceeding duration of the project - medium difficulty (Romania - 51.42%, Poland -37.5%); keeping up with the project budget not exceeding project costs - medium difficulty (Romania - 37.14%, Poland - 25%), the turbulences created by the project environment - low difficulty (Romania - 40%, Poland - 35%) and building relationships with project external stakeholders - medium difficulty (Romania – 42.85%, Poland – 37.5%).

Significant differences between the two countries occur in the following vital areas in project management, and it can be noticed that Romanian SMEs grant

lower degrees of difficulty than Polish ones: reacting to signals sent by the project environment (Romania - 40% low difficulty, Poland - 27.5% significant difficulty), problem with the project team (Romania - 40% low difficulty, Poland - 30% medium difficulty) and the way the project is supported by the company (Romania – 37.14% low difficulty, Poland -40% medium difficulty).

The results of the Z test for H4, which refers to the way in which the studied companies evaluate the stakeholders in terms of the risks they can generate for their projects, are the following: senior management (-2.19*); contractors, suppliers and other partners (-0.95); environmental stakeholders (-2.73*); competitors (0.47), societal stakeholders (-3.30*), other stakeholders (-2.55*).

Considering the general formulation of the hypothesis, which does not focus on a certain type of stakeholder, but also the fact that for most stakeholders the value of z is out of critical regions, we can reject the null hypothesis and conclude that between Romanian and Polish SMEs exist differences in the way they evaluate the stakeholders in terms of the risks that could produce to the projects.

The following findings are the result of a comparative analysis between the small companies in Romania and Poland regarding the assessment of the stakeholders that may threaten the good development of the projects. It should be mentioned that the analysis includes the most voted threat levels by the research respondents.

With regard to the potential risks arising from the project stakeholders, SMEs in Romania and Poland granted the same level of threat to: competitors - medium threat (Romania - 32.42% Poland -32.5%), and other stakeholders - inexistent threat (Romania - 40%, Poland -27.5%). There are significant differences between the two countries regarding the stakeholders, and can be noticed the Romanian SMEs grant lower levels of threat than Polish ones. Thus, senior management is evaluated in Romania by 40% of respondent as an inexistent threat, meanwhile in Poland about 30% of respondent appreciate the management as medium threat.

Therefore, stakeholders such as competitors and contractors are considered to produce a medium-risk exposure of the project for small and medium-sized enterprises in Romania, and stakeholders such as environmental stakeholders and social stakeholders are appreciated by Polish companies as submitting projects to significant threats. The fact that the Romanian companies did not appreciate any stakeholder as generating a significant or high risk exposure of the project may be due to the possession of complete information from the internal and external environment, obtained from carrying out stakeholder analysis. The percentage of Romania organizations that does not carry out a stakeholder analysis is 37.10% and that of the Polish companies 52.20%.

The next area under study concerned the use of risk management in projects. The result show that 65.70% of the Romanian SMEs manage the risks in the projects, and 34.30% of them have been undecided to confirm or deny the existence of risk management techniques and tools. From the total number of

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Romanian SMEs which indicated the use of risk management 65.22% (15) are micro, 21.74% (5) are small and 13.04% (3) medium, and of all those who had indecision regarding the existence of risk management practices 41.67% (5) are micro-enterprises, 41.67% (5) are medium enterprises and 16.66% (2) small enterprises.

The situation of Polish SMEs is the following: 47.50% of respondents indicated that they analyze risks of the projects, 20% more than those who do not apply any risk management practices. Also 25% of them have shown undecided to confirm or rule out the presence of risk management practices. Of the total Polish SMEs that have indicated the use of risk management, 52.63% (10) are medium enterprises, 47.37% (9) micro-enterprises, 90.90% of those who have indicated lack of such practices are micro-enterprises and 9.10% are small enterprises, and of the sum of those undecided 70% (7) are micro-enterprises, 20% (2) medium-sized enterprises and 10% (1) small enterprises.

The existence of a significant number of Romanian and Polish small and medium-sized enterprises showing undecided to confirm or denies the presence of such practices may mean that they are at an early stage of adopting risk management techniques and tools, or uses a limited number of risk management techniques and tools, or the practices used are elementary.

For this section, the value of z is -0.43 , this result is in the area (± 1.96) where the null hypothesis cannot be rejected, thus H_5 is verified, showing that between the Romanian and Polish companies there are no differences in the extent to which the risks are managed in projects.

The next part addresses the problem of formalizing project risk management practices in Romanian and Polish SMEs.

Almost half of Romanian SMEs (40%) prefer to use their own risk management methodologies and only 11.40% say there is no formalization of risk management. Also, the formalization of this process in line with international practices is reduced, 8.6% reporting on the use of international standards (ISO 31000: 2009) and only 2.9% using international methodologies. Instead, companies reported the use of combined risk management practices of different standards and methodologies (34.30%), as well as national standards and methodologies (22.90%).

As in the case of Romania companies, Polish organizations prefer to manage risks in projects according to their own standards and methodologies (36.40%), and 22.70% of them indicate a lack of formalization of risk management. Compared to Romania, Poland has a higher degree of risk management formalization, reporting the use of international standards - 9.10% (0.5% more than Romania) and international methodologies 22.70% (19.80% more than Romania). Major differences are emerging between Romania (22.90%) and Poland (4.5%) as regards the use of national standards and methodologies. In contrast, Polish companies (45.50%) outnumbered Romanian companies (34.30%) in the use of combined risk management practices of different standards and methodologies.

For this section, the value of z is 0.17, this result is in the area (± 1.96) where the null hypothesis cannot be rejected, thus H_0 is verified, showing that between the Romanian and Polish enterprises there are no differences in formalizing project risk management practices.

Small and medium-sized enterprises in Romania and Poland grant similar degrees of difficulty to the following vital areas in risk management: increasing regulatory requirements - normal (Romania - 48.57%, Poland - 35%), increasing of the requirements of the stakeholders - normal (Romania - 48.57%, Poland - 45%) and attracting and retaining qualified human resources in risk management - difficult (Romania - 34.28%, Poland - 30%).

Significant differences between the two countries occur in the following vital areas in risk management, with an alternation in the award of ratings between the two countries, an area considered difficult for Romania, for Poland is easy and vice versa. Thus, the provision of a budget and resources is perceived as difficult by 37.14% of Romanian SMEs and as being easy by the Polish ones (32.5%). The same thing happens in the case of collaboration between the risk management function and other functions (Romania - 54.28% fairly challenging, Poland -30% strongly challenging) and the development and implementation of the risk culture within the company (Romania - 48.57% fairly challenging, Poland 32.5% - not so challenging).

For all activities, the calculated z value is in the area (± 1.96), where the null hypothesis cannot be rejected, thus showing that there are no differences between the Romanian and Polish SMEs regarding the degree of difficulty of certain activities on risk management in projects.

Table 4. The level of difficulty attributed by the studied enterprises to the activities carried out while managing risks projects

<i>Answer options</i>	<i>Test z computed</i>
Increasing regulatory requirements	0.69
Increasing requirements from stakeholders	0.32
Active involvement of senior management	-1.78
Ensuring adequate budget and resources	1.65
Attracting and retaining risk management qualified human resources	1.89
Collaboration between the risk management function and other functions	-0.76
Developing and implementing the risk culture across the company	0.33

Source: Own calculations

Based on the research findings and their discussion, Table 5 presents the key areas of characteristics in the process of project management in Romanian SMEs as compared to the solutions employed by Polish SMEs. Also, the results were referred to the verification of study hypotheses.

Table 5. Key areas of characteristics in project management in small and medium-sized enterprises

<i>Areas</i>	<i>Small and medium enterprises in Romania</i>	<i>Small and medium enterprises in Romania</i>	<i>Hypotheses tested</i>
Important factors in projects			
Features of the projects analysed			
The extent to which the work of small and medium-sized enterprises is organized in the form of projects	Extensive– 88.6%	Significant– 45%	H1
Degree of formalization of project management	Empirical – 54.3%	Empirical – 47.8%	H2
The degree of difficulty of vital areas in project management			
Keeping up with the project schedule and not exceeding duration of the project	Medium difficulty - 51.42% (18 respondents)	Medium difficulty– 37.5% (15 respondents)	H3
Keeping up with the project budget, not exceeding project costs	Medium difficulty – 37.14% (13 respondents)	Medium difficulty– 25% (10 respondents)	
Reacting to signals sent by the project environment	Low difficulty – 40% (14 resp.)	Significant difficulty– 27.5% (11 respondents)	
The turbulences created by the project environment	Low difficulty – 40% (14 resp.)	Low difficulty– 35% (14 respondents)	
Problems with the project team	Low difficulty – 40% (14 resp.)	Medium difficulty – 30% (12 respondents)	
The way project is supported by the company (senior management)	Low difficulty– 37.14% (13 respondents)	Medium difficulty – 40% (16 respondents)	
Building relationships with project external stakeholders (contractors, suppliers, banks)	Medium difficulty – 42.85% (15 respondents)	Medium difficulty – 37.5% (15 respondents)	
Characteristics of the projects stakeholders			
Exposure of the project to risk by the stakeholders			
Senior management	Inexistent exposure – 40% (14 resp.)	Average exposure– 37.5% (15 respondents)	H4
Contractors, suppliers and other partners	Medium exposure – 34.28% (12 respondents)	Low exposure– 35% (14 respondents)	
Environmental stakeholders	Low exposure – 48.57% (17 respondents)	Significant exposure – 32.5% (13 respondents)	
Competitors	Medium exposure – 32.42% (11 respondents)	Medium exposure– 32.5% (13 respondents)	
Societal stakeholders example: e.g. neighbors, local societies	Low exposure – 45.71% (16 respondents)	Significant exposure – 27.5% (11 respondents)	

Other stakeholders	Inexistent exposure– 40% (14 respondents)	Inexistent exposure– 27.5% (11 respondents)	
Existence of an analysis of project stakeholders	Inexistent – 37.10%	Inexistent – 52.20%	-
Characteristics of risk management in projects			
The extent to which project risks are managed	High- 65.70%	Significant – 47.80%	H5
Degree of formalization of risk management in projects	Empirical – 40%	Combines different methods and practices from standards and methodologies - 45.50%	H6
The degree of difficulty of vital areas in risk management in projects H7			
Increasing regulatory requirements	Normal – 48.57% (17 respondents)	Normal – 35% (14 respondents)	
Increasing requirements from stakeholders	Normal – 60% (21 respondents)	Normal – 32.5% (13 respondents)	
Active involvement of senior management	Normal – 48.57% (17 respondents)	Normal – 45% (18 respondents)	
Ensuring adequate budget and resources	Difficult – 37.14% (13 respondents)	Low – 32.5% (13 respondents)	
Attracting and retaining risk management qualified human resources	Difficult– 34.28% (12 respondents)	Difficult – 30% (12 respondents)	
Collaboration between the risk management function and other functions	Normal – 54.28% (19 respondents)	Difficult – 30% (12 respondents)	
Developing and implementing the risk culture across the company	Normal – 48.57% (17 respondents)	Low– 32.5% (13 respondents)	

Source: Own calculations

5. Conclusions

The main objective of the study was to identify the potential differences among Romanian and Polish SMEs in the area of project management. Another purpose of the study was to explain the variance in the approach of SMEs towards characteristics of project management.

A review of the literature confirmed that the characteristics of SMEs in terms of number of employees, range and type of business activities, etc. are important factors for the project management succes.

The biggest differences between the two countries are in the area of the use of international standards in project management (much higher in Poland than in Romania where SMEs prefer to use their own standards). The Romanian SMEs have difficulties in fitting into the estimated budget and deadline of the project,

meanwhile the Poland SMEs are more preoccupied by the turbulences created by the project environment and the relationships with project external stakeholders.

The results are quite different in terms of risk management in projects. In Romania there is a more intense concern about the application of risk management in projects, as well as the existence of a greater uncertainty in the evolution of the business environment. On the other hand, Polish SMEs are more effective in applying international guides for risk management.

Although the research is characterized by some limitations of the methodology, generated by the small number of respondents, it is the first comparison between Romania and another country in the area of project management in SMEs. Further studies are planned based on an extended sample and with the objective to investigate other features of SMEs in the area of project management.

In spite of the aforementioned strengths this paper is not free from limitations. A first limitation is the number of enterprises taking part in the study. A second limitation is the fact that SMEs were included in one group, while there can also appear differences in the way projects are managed in the particular subgroups. From this point of view it would be interesting to see whether there are differences among these businesses e.g. in the way they manage their stakeholders. For the above reasons the obtained results should be interpreted with caution.

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