

# Key Success Factors of Enterprise Risk Management Systems: Listed Polish Companies

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## Abstract

**Purpose:** The main purpose of the article is to determine the key success factors of enterprise risk management systems, understood as the characteristics of these systems that have the greatest impact on the effectiveness of their functioning.

**Methodology:** Bearing in mind the most accurate determination of key success factors of enterprise risk management systems, I used several research methods. The conducted research was divided into four stages: (1) literature review, (2) financial statements analysis, (3) individual in-depth interviews, and (4) anonymous surveys. The research embraced enterprises operating in Poland.

**Findings:** Based on the literature analysis, in-depth interviews, and conducted surveys, a list of risk management systems' success factors was created and sorted in the order from the most important ones – that have the greatest impact on the success of risk management – to the least important ones. Additional analysis of financial statements of all WSE-listed companies allowed me to discern that few of the surveyed companies use mature modern ERM systems, and it enabled me to identify a group of companies that qualified to participate in the survey. Moreover, a statistically significant positive correlation appeared between the degree of key success factors' implementation and the overall ERM implementation's impact on the organization, while a statistically significant negative correlation emerged between the overall impact of ERM implementation on the organization and the degree of ERM implementation goals' achievement, but also between the degree of the implementation of key success factors and the degree of the ERM implementation objectives' implementation. Moreover, I noted that the fact of using individual features has no significant impact on the assessment of a given feature by respondents.

**Implications:** All factors included in the study are success factors of risk management systems. However, the surveys' results suggest a different level of individual factors' significance, thus a different degree of these factors impact on risk management success.

**Originality/Value:** The article presents an original set of key success factors in risk management systems, created based on my own research. The obtained research results can be used by managers willing to implement or develop risk management systems in their organizations.

**Keywords:** enterprise risk management, ERM, risk management, corporate governance, risk.

JEL: L22, M10, M19

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## Introduction

Enterprise risk management (ERM) is a relatively new, proactive approach to risk management, characterized by comprehensiveness and multifacetedness (Malinowska, 2011). The ERM concept is different from traditional (silo) risk management as it consists in a holistic approach to risk in the context of company strategy and goals. According to ERM, risk management is not one of many functions but is spread throughout the organization in conjunction with all internal company processes (Krysiak, 2011), including strategy-setting and performance management practices (COSO, 2017). ERM means an integrated and continuous management process that includes the understanding of existing interdependencies across risks and the implementing of integrated strategies (Lam, 2017, p. 11). Following ERM, we should prioritize and manage risk exposures as an interrelated risk portfolio rather than individual “silos” (Cook, 2018, p. 5). The goal is not to avoid risk but rather to optimize risk-return trade-offs (Lam, 2017, p. 11).

The main purpose of risk management is the creation and protection of value; it enhances operating performance (Callahan and Soileau, 2017), encourages innovation, and supports the achievement of objectives (ISO, 2018). Enterprise risk management embraces enterprise-wide coordinated activities with which companies identify, assess, actively manage, and report all key risks in order to create value for the firm (Hunziker, 2019, p. 5). The ERM approach expands the risk management process to include not just risks associated with accidental losses but also financial, operational, strategic, compliance, reputational, and other risks (Cook, 2018, p. 4). Moreover, what ERM considers are not only risks that may result in a negative outcome but also opportunities. As a result, ERM practices help organizations manage risks that may prevent value from being created, preserved, and realized or that may erode existing value, and just as importantly, it also helps organizations pursue potential opportunities (COSO, 2017).

The growing awareness regarding the importance and necessity of effective risk management results in the increasing popularity of the ERM concept. However, empirical research in the field remains insufficient, as are verifications of existing theories and clear practical guides the implementation and use of ERM systems (Schiller and Prpich, 2014; Mikes and Kaplan, 2015; Lam, 2016). Furthermore, as the ERM concept continues to evolve, there is much confusion and discussion over what exactly it is, and how it should be achieved (Fraser, Simkins, and Navarez, 2015). Given the relatively early stage of ERM development and the continuous evolution of this concept, many researchers indicate the need for more research in this area (Schiller and Prpich, 2014; Mikes

and Kaplan, 2015), especially in the context of management sciences (Bromiley et al., 2015). Furthermore, as a globally recognized approach to risk management, ERM remains not very well known or used among Polish companies. Therefore, my choice of the research subject was dictated primarily by the desire to develop and popularize the ERM concept and to provide additional materials that could be used by management practitioners willing to implement or develop modern risk management systems in their organizations.

This article will present the most important part of the obtained research results. *The main research goal was to identify key success factors of enterprise risk management systems, understood as the characteristics of these systems that have the greatest impact on the effectiveness of their functioning.*

Key success factors in the context of risk management are those that enable and lead to the successful implementation of risk assessment and management practices (Chileshe and Kikwasi, 2014). Therefore, it is a group of factors that has the greatest impact on the successful implementation and use of risk management systems in enterprises. The enterprise risk management system is a set of all elements associated with risk management in the organization, namely principles, processes, tools, techniques, organization, management methods and functions, organizational culture. The effectiveness of risk management systems is defined as the impact of the implemented risk management system on an organization and as the degree of the achievement of the implementation goals of such a system, such as increasing financial stability and financial results (Krysiak, 2011), increasing the value of a company (Florio and Leoni, 2017), reducing the firm's cost of capital (Berry-Stölzle and Xu, 2018), improving company reputation (Pérez-Cornejo, Quevedo-Puente, and Delgado-García, 2019), reducing the likelihood of bankruptcy, providing relevant information for managers, or improving the organization's effectiveness (Przetacznik, 2016). Therefore, the success factors of risk management systems are a group of the most desirable features that should characterize enterprise risk management systems to enable an organization to manage risk effectively and to achieve the objectives of ERM implementation.

An additional goal of the research was to analyze and systematize the literature on risk management, but also to confront the theory on enterprise risk management with Polish business practice. Moreover, I sought to verify how much the use of previously selected success factors affects the effectiveness of ERM systems by determining the correlation between the level of the identified factors usage in individual organizations, the overall impact of implementing risk management systems, and the degree of objectives achievement in implementing risk management systems in these organizations.

## Research Methods

Bearing in mind the most accurate determination of key success factors of ERM systems, I used several research methods. The conducted research was divided into four stages: (1) literature review, (2) individual in-depth interviews, (3) financial statements analysis, and (4) anonymous surveys.

The first stage was a detailed review of the literature and existing risk management standards. This was done to summarize all desirable features of ERM systems that form potential key success factors. The analysis result was a list of 105 success factors of risk management systems divided into five categories: (1) basic principles of risk management, (2) risk culture and communication, (3) risk management process, (4) management and supervision, and (5) tools and techniques.

To broaden the research context, I conducted individual in-depth interviews with seven experts who professionally deal with risk management in enterprises located in Poland that implemented ERM systems (risk managers, risk specialists, etc.). The aim of these interviews was to obtain practitioners' opinions about ERM success factors. It also enabled me to better understand the characteristics of risk management in organizations located in Poland. The interviewees were asked to list the factors that they believe have the greatest impact on the success of risk management, a positive impact on the functioning of the ERM system, and thus positively affect company results. The interviewees could choose any elements that describe how a risk management system should be organized or that present the features it should have. Respondents could choose the topic of the conversation and describe its features. The interviews' result was a list of ERM success factors, which expanded the list created from the literature review or – in the case of features that reappeared – confirmed the high rank of a certain feature.

The last stage of the research was an anonymous survey conducted among professionals who work in risk management in Poland-based organizations that implemented mature risk management systems (ones that fulfill the assumptions of the ERM concept). To identify the largest group of persons who could participate in the survey and to estimate the study group size, I preceded the survey with an analysis of the annual financial statements for 2017 of all 463 (as of 14.01.2019) companies listed on the Warsaw Stock Exchange (WSE) in terms of information regarding risk management they published. The purpose of this detailed review was to determine the level of risk management maturity among the WSE-listed companies and to identify a group of companies that use ERM systems that could participate in my survey.

Selected success factors based on the literature review and in-depth interviews were used to create the survey. The initial list of 123 factors was slightly modified and shortened to create a more respondent-friendly survey questionnaire. As a result, the main part of the survey consisted of a list of 54 potential ERM success factors. The respondents were asked to assess the impact of each mentioned factor on the success of risk management systems. This enabled me to determine the key success factors of risk management systems.

Moreover, the respondents were asked to (1) determine whether each mentioned factor was implemented in their organization, (2) choose the main ERM implementation objectives, (3) assess the impact of ERM implementation, and (4) assess the degree of achieving ERM implementation objectives in organizations they worked for at the time of the questionnaire. This allowed me to assess the real level of maturity of the risk management systems in surveyed organizations and determine how much the selected key success factors influence the effectiveness of these systems. Based on this information, I calculated the correlation between the degree of key success factors usage, the overall impact of risk management system implementation on organizations, and the degree of achieving ERM implementation objectives.

Over the period of over three months (from 20.11.2018 to 4.03.2019), 27 completed surveys were collected. Considering a total of 54 messages containing a survey link sent to different organizations, this gives a 50% return rate.

## Research Results and Discussion

### Literature Review

The first stage of the research was a detailed review of the literature and risk management standards. Below, I will present the most important factors described in the literature that may have a positive impact on the success of risk management and therefore can be potential ERM success factors. These factors were divided into five groups: (1) the basic principles of risk management, (2) culture and risk communication, (3) risk management process, (4) management and supervision, and (5) tools and techniques. I assigned the most important features of ERM systems related to a given issue to each of the groups. On this basis, potential success factors were specified.

### Basic Principles of Risk Management

One of the basic assumptions of the modern approach to risk management is ERM integration (Rebelo, Silva, and Santos, 2017). Risk management should be integrated

with all processes in the organization (ISO, 2018), including strategy setting and strategic planning (Fraser and Simkins, 2016; Beasley and Frigo, 2010; Frigo and Anderson, 2011), along with business planning (COSO, 2017). The ERM processes must be introduced in organizations and should dynamically adapt to the changing internal and external environments (ISO, 2018).

For a risk management system to function well, it is also necessary to continuously and iteratively manage all the main risks to which the organization is exposed (Lam, 2017; FERMA 2003). Management should identify all types of risks (strategic, operational, financial, reputation, legal, etc.) regarding all corporate functions (Decker and Galler, 2013; Cook, 2018; Olson and Wu, 2020). Moreover, it is important to create the most extensive models for worst-case scenarios to minimize the extent of the unpredictable scenarios (“black swans;” Taleb, 2007; Decker and Galler, 2013).

An element that could have a significant impact on the effectiveness of ERM is managing risks together as a risk portfolio. Risk portfolio management considers common characteristics of risks and interdependencies that may exist between them (COSO, 2017; Cook, 2018). The purpose of risk management should be to balance the risks portfolio to maintain the total risk at the level corresponding to the risk appetite of stakeholders (Frigo and Anderson, 2011). Risk should not only be treated as a problem that must be reduced. Instead, companies should optimize the level of risk by perceiving it not only as a threat but also as a competitive advantage (Bromiley et al., 2015). The feature that characterizes successful ERM programs is that they include both negative and positive risks (ISO, 2018; FERMA, 2003).

### Culture and Risk Communication

Organizational culture is crucial for risk management. A strong risk culture encourages each employee to seek risks and consider their impact on business. Therefore, effective risk management should be built into the organizational culture and become part of its structure (Boulton and Dominus, 2014; COSO, 2017). What is also necessary is a strong commitment to risk management among all employees and managers (Althonayan, 2012; Boulton and Dominus, 2014).

One of the most important elements necessary to develop effective risk management is to define corporate values, goals, views, and priorities (Kaplan, 2016). Employees’ and managers’ knowledge and awareness are equally important (Brooks, 2010), especially supported by appropriate training and workshops (Fraser and Simkins, 2016; Lam, 2017). Promoting risk awareness is a huge challenge for organizations (Archer, 2002). As the essence of ERM, responsibility for risk at every workplace should be

a part of every effectively functioning risk management system (Krysiak, 2011; Boulwood and Dominus, 2014). The literature also draws attention to the importance of proper risk communication in the enterprise. For communication to work properly, management must create a risk language common to the entire organization, which affects how employees think and improves the atmosphere for discussion about risk (Althonayan et al., 2012; Boulwood and Dominus, 2014). This should also include defining risks and creating a taxonomy to develop a common understanding of identified risks (Etges et al., 2018).

Moreover, what is extremely important is the awareness of the possibility of human errors and mistakes, along with biases (Kaplan, 2016; COSO, 2017; Hunziker, 2019), both in identifying and solving problems. Any system based on people works better when both strengths and weaknesses of such a system are considered (Mikes, Oyon, and Jeitziner, 2017).

### **Risk Management Process**

Effective risk management process is considered one of the most important elements of ERM as it enables us to understand, monitor, and control risk. The risk management process should be continuous and iterative (Frigo and Anderson, 2011; Cormican, 2014; ISO, 2018), but its stages and actions should be tailored for the organization, its structures, processes, and objectives (Shortreed, 2010).

There are many standards of and recommendations for the risk management process and its various stages. Regardless of who describes it, the process usually consists of similar steps. To start with, we determine the context, namely the internal and external environment in which the enterprise operates (ISO, 2018). The next stage is risk identification (Fraser and Simkins, 2016; COSO, 2017; Kline and Hutchins, 2017), which considers both potential sources and consequences of risk (Green, 2016, p. 5). The next stage is risk analysis whose aim is to understand individual risks' causes and sources and to assess the probability of events occurrence and their consequences – both negative and positive (ISO 2018). Based on the information obtained through risk analysis, we develop individual risk management strategies. At this stage, we identify risk control possibilities, then select and implement the best solution (Shortreed, 2010, p. 109). Importantly, we next measure the cost of risk control in order to compare it with the cost of realizing the risk itself (FERMA, 2003; COSO, 2017). When implementing risk response, we ensure that the appropriate resources are provided to implement selected actions and to indicate persons responsible for managing and monitoring individual risks (FERMA, 2003; Kline and Hutchins, 2017; ISO, 2018). Noteworthy,

we should always designate risk owners responsible for individual risks (Lundqvist, 2014; Etges et al., 2018; ISO, 2018).

To continuously monitor identified risks and undertaken actions, and to assess the effectiveness of implemented responses, we constantly monitor and control risk (Cormican, 2014; ISO, 2018). Moreover, the risk management process requires creating a communication and reporting system to exchange information among participants of the risk management process (Malinowska, 2011; Marchetti, 2012; ISO, 2018).

### **Management and Supervision**

Management and supervision are key elements of successful ERM. We must establish the appropriate organizational structure, define the ERM structures, as well as properly divide the authority and responsibilities related to risk management (FERMA, 2003; COSO, 2017). The managers' attitude significantly impacts the decisions and activities related to risk management, while effective leadership is considered one of the key factors affecting company survival (Ahmed and Manab, 2016). Many researchers indicate the need for managers' strong commitment to and support of risk management, without which ERM cannot function properly (Cormican, 2014; ISO, 2018). Such support is necessary to create the right motivation and dedication and to guarantee the resources necessary to implement ERM (Frigo and Anderson, 2011).

An important role in risk management is played by the management board responsible for setting the organization's strategy and priorities, as well as approving and implementing applicable policies and programs (Benjamin, 2017; ISO, 2018), including those related to risk management. Management awareness, knowledge, and commitment are key to risk management (FERMA, 2003). Commitment to the risk management process must not be restricted solely to the management board. All managers and employees of the company should be involved in this process (Młodzik, 2014; ISO, 2018).

What also plays a role in assessing the efficiency of and proposing improvements in risk management is internal audit (Młodzik, 2014), which provides reliable information on the effectiveness of risk management, internal control processes, and organizational governance (Lam, 2017).

### **Tools and Techniques**

Both quantitative and qualitative risk management techniques are useful in correctly identifying and assessing risks, making decisions, and allocating resources (Kaplan, 2016). It is important that all risk management analyses are conducted in a simple and



functional way so that the obtained data can be easily understood, interpreted, and processed (Duckert, 2011).

Managers should formalize some elements and principles of risk management in the organization. Researchers emphasize the need to clearly define strategy (Hopkin, 2010) and risk management policy (Lundqvist, 2014; Hodgins, Stokdyk, and Trotter, 2015). Moreover, we should set formal rules regarding risk management. For this purpose, what can be used is existing risk management standards adapted to a specific enterprise (Lundqvist, 2014; Fraser and Simkins, 2016). Risk management procedures are another important element of the risk infrastructure (Krysiak, 2011).

An inseparable element of ERM should also be the development of appropriate solutions to maintain the level of risk at an acceptable level for a given organization. The tools used for this are risk tolerance and risk appetite (Lundqvist, 2014; Hodgins et al., 2015; COSO, 2017; Lam, 2017). The tools used for measuring and controlling individual risk level, which helps organizations to react to emerging risks as early as possible, are key risk indicators (KRIs) and early warning indicators (Duckert, 2011).

### Individual In-Depth Interviews

To identify the greatest number of success factors of enterprise risk management, the detailed review of literature and risk management standards was followed by individual in-depth interviews. Opinions expressed by the interviewees were analyzed in detail, and the results were divided into two main parts: a list of factors most frequently mentioned by respondents and a list of new factors that were not included in the previous stage of the research.

Interviews were conducted independently, and the factors mentioned by the interviewees were a consequence of their individual, subjective experiences and opinions. Nevertheless, interviewees in many cases pointed to similar factors, which they believed had a significant impact on the risk management success. This may indicate these factors' high importance. The most frequently mentioned success factors were people and organizational cultures, such as management's attitude toward risk management, the awareness of risk management, and risk culture. Although all the factors mentioned by the respondents seem relevant to the success of ERM, we should note especially the factors mentioned independently by a minimum of four out of the seven respondents. A summary of the success factors of enterprise risk management systems that were most frequently mentioned by the interviewees is presented in Table 1.

**Table 1.** The success factors of enterprise risk management systems most frequently mentioned by interviewees

ERM success factor	Number of answers (max. 7)
Management attitude: commitment, willingness, support, competence, awareness	7
Risk awareness among all employees	5
Knowledge regarding risk management	4
Opportunity management	4
Culture of dialog: talks about risk, persuading employees to the ERM, openness, willingness to talk about risks and negative events	4

Source: own elaboration.

A detailed analysis of the in-depth interviews enabled me to identify 18 new ERM success factors that did not appear in the literature review. New factors were assigned to one of five categories, like in the previous research stage. The newly identified factors are presented in Table 2.

**Table 2.** New ERM success factors identified on the basis of individual in-depth interviews

Risk culture and communication	Experienced and competent risk management team.
	Reporting risks and negative events treated as something desirable, willingness to talk about problems.
	Frequent talks about risk, convincing employees to manage risk.
	Showing the benefits of risk management.
	Maturity and a serious approach to risk management in the organization.
	Regular testing of risk knowledge and risk communication.
	Teamwork.
Risk management process	Pre-preparation for possible emergencies (e.g. development of action plans, crisis communication plans).
	Selection of the appropriate ERM implementation methodology.
Management and supervision	Appropriate distribution of duties regarding risk management.
	Acceptance of additional costs related to the implementation and use of risk management.
	Establishing official risk-based decision-making procedures.

Tools and techniques	Creating an incident database containing information on risks.
	Simplicity of models and solutions used.
	Knowledge of existing risk management standards.
	Applying a risk management methodology best suited to a specific organization.
	Data and information obtained from ERM adequate to the needs of the company.
	Improving planning and forecasting processes, applying a forward-looking approach.

Source: own elaboration.

Moreover, the respondents shared their opinions, experiences, and dilemmas regarding the risk management practice in Poland. They emphasized the early stage of ERM implementation and the low level of risk management in most Polish enterprises. In many cases, this implies a lack of opportunities to cooperate with suppliers and recipients in this regard (e.g. when identifying and assessing risks or developing contingency plans). On the other hand, one of the interlocutors drew attention to the fact that in many cases it is the requirements and expectations of contractors that best incentivize companies to implement ERM. Furthermore, the interlocutors indicated the insufficient availability of materials and books (especially practice-oriented ones) that could be helpful in implementing and developing ERM, along with the low availability of training and courses at a level higher than basic, from which they could derive advanced knowledge about risk management practice.

The results of the in-depth interviews indicate the high importance of human factors that affect ERM's success, such as management's commitment, knowledge, willingness, and competence, but also awareness and knowledge about risk among employees or appropriate organizational culture. Based on the interviews, we may conclude that there are still problems in this area, caused by low risk awareness and relatively low popularity of ERM systems in Poland, which limits the possibilities of cooperation and experience exchange regarding risk management among organizations. Therefore, we should further popularize ERM and promote risk culture in organizations.

## Financial Statements Analysis

The aim of the conducted analysis of 463 financial statements for the financial year 2017 in all WSE-listed companies was to assess the level of risk management in Polish enterprises and to identify enterprises with implemented ERM systems, which could

participate in the next stage of the research: the survey. The analysis consisted of a detailed review of all risk management information published by these companies in their annual reports. This work enabled me to select the companies whose employees could partake in the survey, and it allowed me to better understand the ERM's situation in Poland, thus estimating the size of the survey's potential study group.

The financial statement analysis helped me to learn that, in most cases, the principles described by these companies indicate the use of traditional, poorly organized risk management systems, characterized by low levels of maturity, which do not meet the basic assumptions of ERM. Furthermore, some of the listed companies declared that they do not at all include in the organizational structure internal control, risk management, and compliance supervision systems. This proved that the implementation of modern risk management systems in Polish enterprises is still rare.

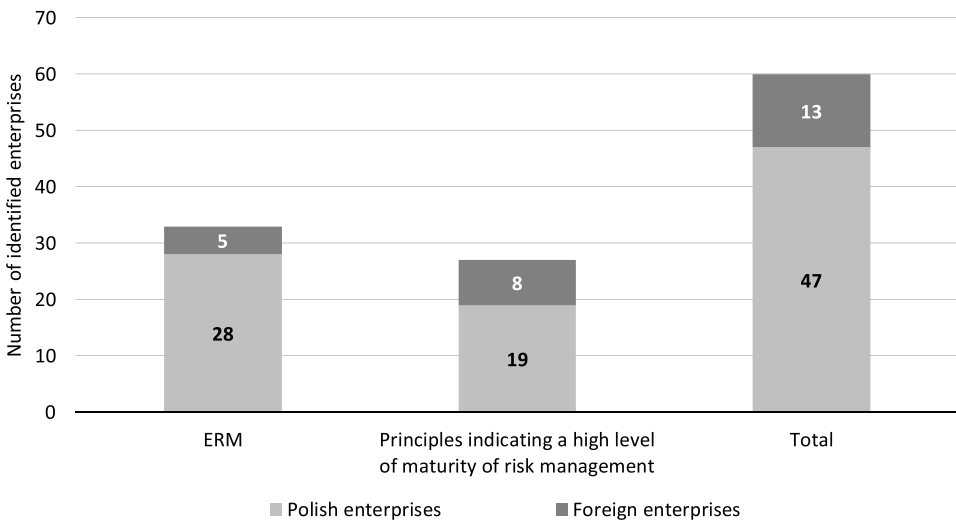
The main aim of the analysis was to identify companies that implemented risk management systems characterized by a high level of maturity, namely presenting the most modern, proactive attitude toward risk and applying an integrated approach to risk management. A detailed review of the information published by the WSE-listed companies allowed me to identify two groups of enterprises that can meet this assumption. The first group included companies that directly declared the use of ERM systems. The second group included companies for which the described risk management principles indicate a high level of maturity of risk management and the use of well-organized risk management systems that meet most of ERM assumptions.

The analysis allowed me to identify only 33 companies that explicitly declared the use of ERM systems (the first group) and 27 companies characterized by a high degree of risk management maturity (the second group). This gave a total of 60 companies (nearly 13% of all WSE-listed companies) that used mature, extensive risk management systems. However, we should emphasize that some of the identified enterprises were foreign companies that do not have an office in Poland. Due to the research assumptions, this group could not participate in the survey. A total of 47 companies (about 10% of all WSE-listed companies) based in Poland qualified for the research. The results of company statements analysis are presented in Figures 1 and 2.

The analysis of the reports showed that the information regarding the use of ERM systems was published by only 33 out of 463 WSE-listed companies, including 28 Polish companies. Considering that WSE-listed companies are the largest in Poland and – in

accordance with the recommendations of the WSE Supervisory Board – that they should maintain effective risk management and internal audit systems, these companies should be characterized by a much higher than average risk awareness and management needs, but also a high degree of advancement in risk management systems. Even so, among these companies, a relatively small percentage of entities presented a mature attitude toward risk and the use of advanced ERM systems. Despite the lack of research on ERM application in the entire population of enterprises operating in Poland, we may guess that the percentage of such enterprises will be much lower than in the case of the analyzed WSE-listed companies. This implies a very small group of people involved in risk management in such organizations, thus a small study group for the survey, which explains the number of surveys collected.

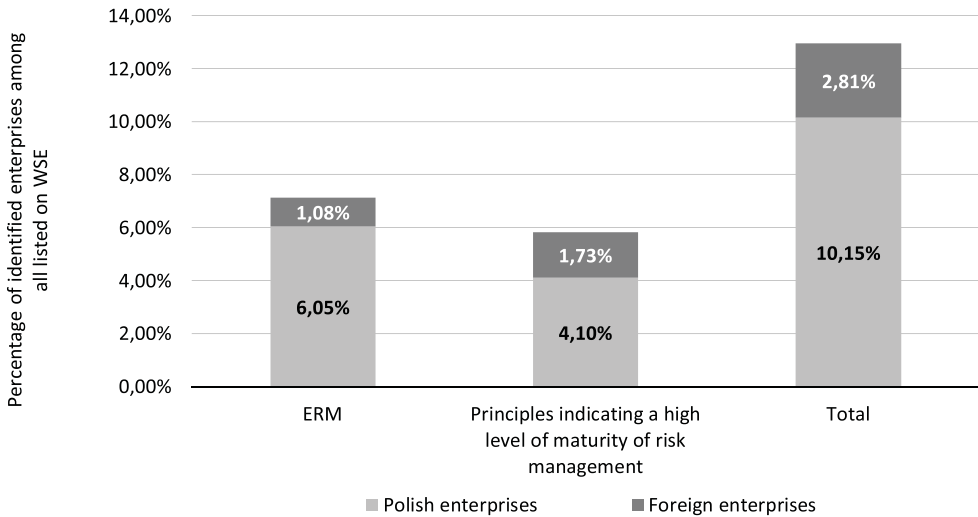
**Figure 1.** Number of Polish and foreign enterprises that implemented ERM or declared the use of mature risk management systems among WSE-listed companies



Source: own elaboration.

The identified listed companies, which use mature risk management systems (both the first and second identified group) were the main but not the only group of enterprises that took part in the survey. Enterprises not listed on the WSE that implemented ERM also took part in the study.

**Figure 2.** Percentage of Polish and foreign enterprises that implemented ERM or declare the use of mature risk management systems among WSE-listed companies



Source: own elaboration.

## Survey Results

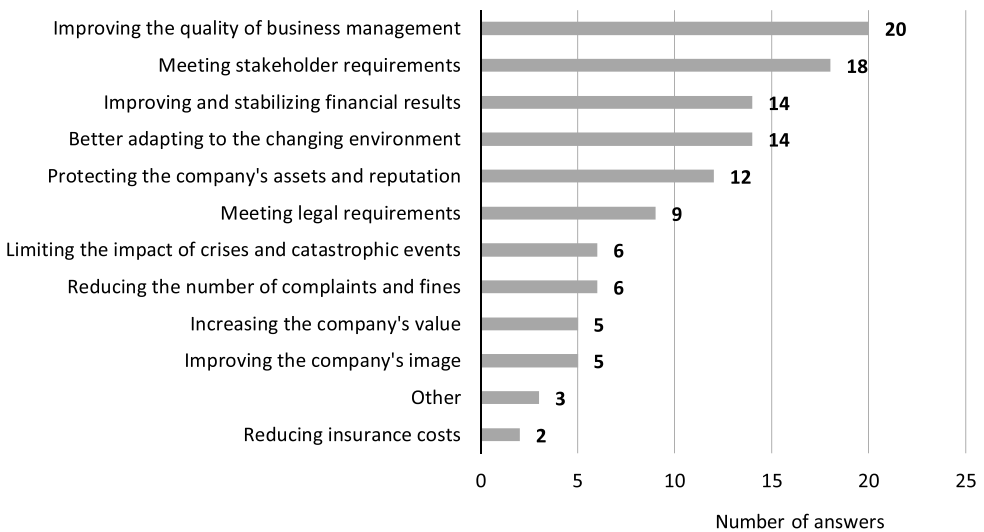
Considering the situation regarding risk management in the analyzed enterprises, we should scrutinize how frequently they implement individual features of ERM. Only two out of the 54 selected success factors were implemented in all surveyed organizations. These were (1) the methodical identification of risks that considers their sources and consequences, along with (2) the assessment of identified risks impact on the organization by properly determining their size and probability of occurrence; thus, these were success factors directly related to the risk management process. Both mentioned factors are directly related to the risk management process and constitute the main stages of this process. Let us note that among the 13 most commonly used factors, as many as seven belonged to the category “risk management process.” Among the most rarely used factors were (1) listing obligations regarding risk management in managers’ contracts, which linked managers’ remuneration to the risk management efficiency (only four companies implemented this feature), (2) the awareness of and preparation for the possibility of “black swans” (unexpected, unpredictable events), and (3) the development of alternative strategies for managing main risks (nine surveyed companies implemented each of these features). Among the 20 least-used factors, there were as many as nine belonging to the category “risk culture and communication” and five to “management and supervision.”

When it comes to the number of features implemented by the enterprises, only one surveyed organization declared to have implemented all 54 examined success factors, while two enterprises implemented 52 factors, and one – 51. Only four surveyed organizations implemented less than half of the selected factors. The smallest number of features declared by a respondent was 11. Therefore, we may conclude that most surveyed organizations presented an advanced level of risk management.

## Survey Results

The respondents had to define the objectives of implementing a risk management system for the organization in which they work. They could choose any number of answers. The most frequently mentioned answers were the objectives related to the positive impact of ERM implementation on the organization, namely improving the quality of management, better adapting to changes, and improving financial results. However, for many respondents, an important goal was to meet stakeholders' requirements. This means that in many cases it is the stakeholders' expectations that are an important motive for implementing ERM. The obtained results are presented in Figure 3.

**Figure 3.** ERM implementation objectives in the surveyed organizations

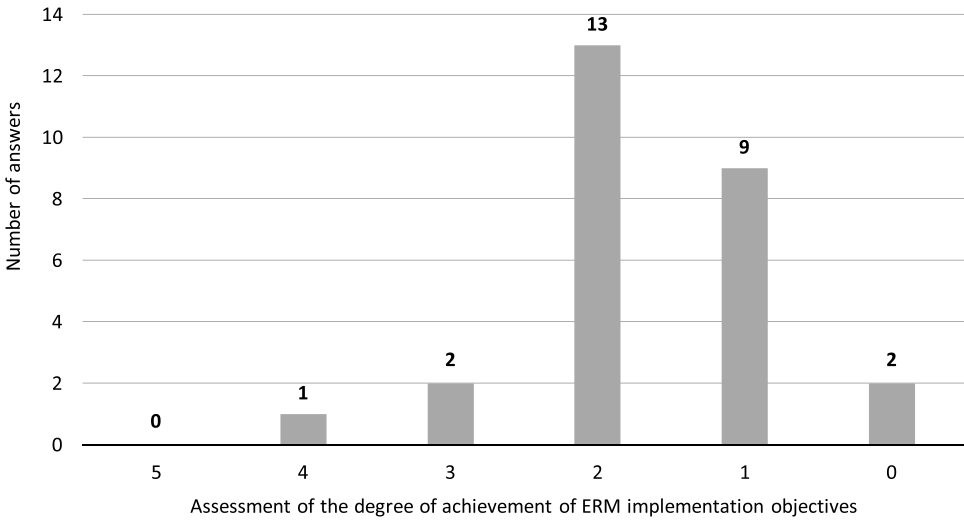


Source: own elaboration.

Another respondents' task was to determine how much of the declared ERM implementation objectives were achieved in their organization. They defined the degree of the achievement on a scale from five to zero, in which five meant "fully achieved

objectives of ERM implementation” and zero – “they were not achieved at all.” The results are presented in Figure 4.

**Figure 4.** The degree of the achievement of ERM implementation objectives in the surveyed organizations



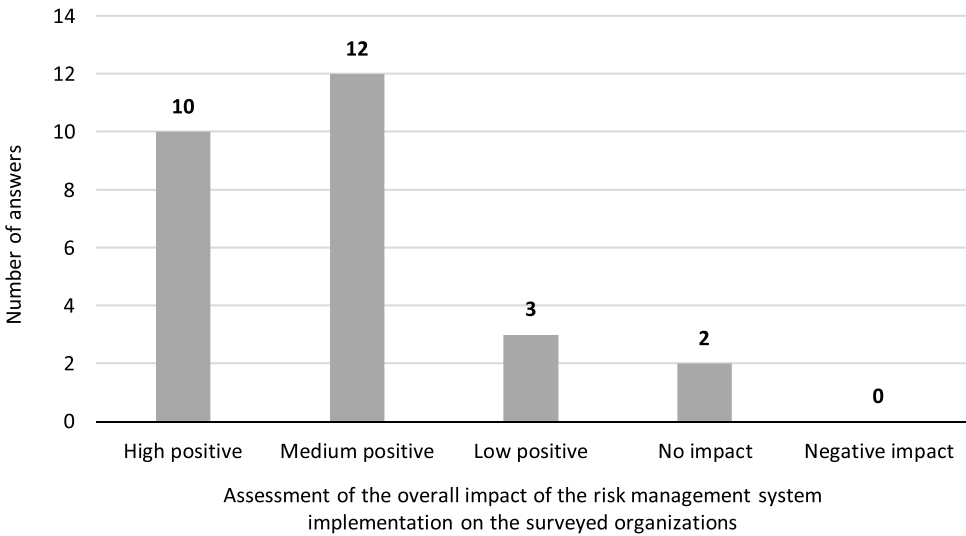
Source: own elaboration.

An overall assessment of the impact of implementing a risk management system on the organization was also an important part of my study. The respondents assessed this impact by choosing one of the answers: (1) high positive, (2) medium positive, (3) low positive, (4) no impact, (5) negative impact. The distribution of answers provided is presented in Figure 5.

The assessment of ERM success factors was based on the survey results. The respondents were asked to assess the selected factors' impact on the success of risk management. To determine the significance of individual factors – and thus to determine the impact of a given factor on the success of risk management – the frequency of individual responses occurrence was calculated for each examined feature. These values were expressed both in numbers and percentage points. Moreover, I calculated the dominant and median for each examined feature. The examined features were ranked in the order from the most important ones – that had the greatest impact on the success of risk management – to the least significant ones.



**Figure 5.** The overall impact of the risk management system implementation on surveyed organizations in respondents' opinions



Source: own elaboration.

The respondents assessed all the examined factors as positively influencing risk management success. There were very few responses expressing negative or neutral opinions about a factor and positive responses dominated for each factor. Therefore, we may conclude that all factors in the study were success factors of risk management's systems. However, the study results suggested different importance levels of individual factors, thus a different degree of impact of these factors on the risk management success. The factors at the top of the list were the most important as they had the greatest impact on the success of risk management, and so managers should pay special attention to the implementation of these characteristics when implementing and using risk management systems in their organizations. Particularly noteworthy were (1) management awareness of current risk exposure and risk decisions, (2) good risk communication within the organization (3) methodical identification of risks, (4) appropriate organizational culture promoting risk awareness, and (5) managements' strong commitment, initiative, awareness, and knowledge regarding risk management (RM). Other very important factors included (6) designating risk owners, (7) risk assessment (size and the likelihood of occurrence), (8) managing all main risks, (9) qualified, experienced, and competent team responsible for risk management, and (10) openness, willingness to talk about problems and negative events. The features at the bottom of the list – despite worse reviews – were still positive factors. However, due to the high number of opinions suggesting no or little positive impact of these features on the risk management success,

Figure 6. The impact of selected factors on the success of risk management



Source: own elaboration.

managers mindful of cost-effectiveness may think twice before using them, so in some cases, they may opt out of implementing these elements in organizations. The full list of key success factors with the structure of answers to individual success factors is presented in Figure 6.

Considering the degree of the implementation of the chosen factors, I attempted to create a list of key success factors in terms of their relevance, including only opinions on individual factors expressed by respondents working in organizations in which such factors were implemented. Because these respondents could observe the impact of each implemented factor on their organizations, they had more reliable and credible knowledge about the impact of these factors on risk management's success.

Comparing the results obtained from all surveys with the results obtained only from the responses of respondents who implemented individual factors, I could infer that there was a great similarity in the obtained results. Nevertheless, I noticed several factors that were assessed in a significantly different way and obtained the most different places in the rankings of importance. These were (1) openness, willingness to talk about problems and negative events, (2) the appropriate selection of employees and proper division of roles, responsibilities, and tasks related to risk management, (3) risk portfolio management and risk-return optimization, (4) rewarding a conscious approach to risk, correct attitudes, and actions of employees, and (5) improving the planning and forecasting of processes by applying a forward-looking approach. The mentioned factors were rated much higher by respondents whose organizations implemented these factors. The factor that received significantly worse opinions from persons working in the organizations that implemented the factor was "listing obligations regarding risk management in managers' contracts."

Moreover, to confirm selected factors' impact on the risk management success, I calculated correlation coefficients between the degree of the implementation of all success factors and the overall impact of the implemented risk management system, along with the degree of the implementation of ERM implementation goals in the surveyed organizations. The calculated Kendall's Tau and Spearman's rank correlation coefficient showed the following:

1. A statistically significant, positive correlation between the degree of the implementation of key success factors and the overall impact of ERM implementation on the organization (Kendall's Tau = 0.54 and Spearman's rho = 0.67).

2. A statistically significant, negative correlation between the degree of the implementation of key success factors and that of ERM implementation goals for the organization (Kendall's Tau = -0.48 and Spearman's rho = -0.6).
3. A statistically significant, negative correlation between the overall impact of ERM implementation on the organization and the degree of the implementation of ERM implementation objectives (Kendall's Tau = -0.5 and Spearman's rho = -0.58).

The obtained results suggest that among the surveyed enterprises appears a tendency to achieve only one of the above values. This would mean that organizations either maximize the positive impact of ERM implementation or achieve their implementation goals. The obtained data does not enable to unambiguously explain the results, but it seems that the reason may lie in different ways of defining goals by different enterprises (goals' type and level), which may result in a varied approach to system implementation, but also in a different time and difficulty level of achieving implementation objectives. Various ERM implementation goals may require a variety of time and effort to enable the achievement of expected results measured by the degree of goals' achievement. This may result in a different assessment of the degree of goals' implementation in organizations with the same obtained effect, depending on how they defined implementation goals. As a result, a company that set implementation goals that are harder to achieve – despite putting much more effort into achieving these goals and much more positive effects of ERM implementation – could assess the level of these goals' achievement lower than an organization that set implementation goals that are easy to achieve and implemented significantly simpler risk management system that provides fewer benefits.

Regardless of the calculated negative correlations, the positive correlation between the degree of the implementation of key success factors and the overall impact of ERM implementation on the organization prove a positive impact of the identified success factors on the success of risk management. Therefore, we may conclude that the identified factors are the key success factors of ERM. The proposed list of success factors can be helpful with implementing and developing ERM and hint at the importance of individual features.

## Conclusion

The main purpose of this article was to determine the key success factors of risk management systems, understood as the features of these systems that have the greatest impact on their performance.

Based on the literature analysis, in-depth interviews, and conducted surveys, I created a list of risk management systems' success factors and sorted it in the order from the most important ones – with the greatest impact on the risk management success – to the least important ones. The most important factors included those related to the risk management process and human factors – such as management's attitude and organizational culture – which seem crucial for effective risk management. Additional analysis of financial statements of all WSE-listed companies allowed me to state that few of the listed companies use mature, modern ERM systems, which enabled me to identify a group of companies that could participate in the survey. Moreover, I found a statistically significant, positive correlation between the degree of the implementation of key success factors and the overall impact of ERM implementation on the organization, while discovering a statistically significant negative correlation between the overall impact of ERM implementation on the organization and the degree of the achievement of ERM implementation goals, but also between the degree of the implementation of key success factors and the degree of the implementation of ERM implementation objectives. Moreover, I noted that the fact of using individual features does not have a significant impact on the assessment of a given feature by respondents.

Based on the research, we may conclude that ERM remains unpopular among Poland's enterprises, which are mostly characterized by low risk awareness and the use of poorly organized risk management systems. Therefore, we must further popularize a modern approach to risk management, increase risk awareness, and provide more research regarding ERM implementation and use.

The list of key success factors created based on my study will help with the implementation and improvement of risk management in organizations. When implementing ERM, managers should primarily focus on the factors at the top of the list, thus those highest rated by the respondents, although all the listed factors should be considered. Moreover, managers should properly define ERM implementation objectives, which would primarily reflect the benefits of implementing risk management, not just the desire to meet the requirements of the environment.

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