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IDENTIFICATION AND ASSESSMENT OF PERSONNEL RISK IN SME – THEORETICAL AND RESEARCH PERSPECTIVE[1]

Summary

Purpose | The purpose of this article is to identify a new catalog of personnel risks in small and medium-sized enterprises, a consequence of the dynamic development of the 4.0 economy.

Research method | From the group of theoretical methods, the author used mainly analysis, synthesis, as well as inference. On the other hand, the empirical research was based on the method of surveying judgments and opinions with the survey technique, with a survey questionnaire constructed for the purpose of the research.

Results | The changing economic conditions expand the catalog of personnel risks in small and medium-sized enterprises, and their impact on the achievement of operational, tactical and strategic organisational goals, should determine the implementation of improvements in policies aimed at identifying new sources of such risks. Personnel risk, among other things, through the interdisciplinary nature of references, affecting the frequency of its occurrence and the level of its impact, belongs to the group of the most dynamically developing area, requiring continuous monitoring.

Originality/value/implications/recommendations | The result of the research implies the legitimacy of creating and regularly updating the used methods of risk identification and assessment, taking into account the new conditions of economy 4.0.

Keywords: personnel risk, inherent risk, risk identification, risk assessment

JEL classification: D81, L26, M12

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1. Introduction

Every activity undertaken within contemporary organisations carries a certain degree of risk, directly linked to defined operational, tactical, and strategic objectives. A holistic approach to organisational risk is described by the PN-ISO 22301:2019 standard, which defines risk as the effect of uncertainty on objectives, potentially resulting in deviations that may positively or negatively impact an enterprise's goals. Furthermore, the same document highlights that the source of this uncertainty may stem from ignorance, leading to a discrepancy between expectations and the actual state of affairs.

This perspective suggests that risk should be viewed both as a factor identifying the consequences of unplanned events and as a criterion for selecting methods and techniques that enhance an organisation's ability to achieve its set objectives. Entrepreneurs often unilaterally identify only the threats arising from specific professional activities. Such a strategy has its economic rationale, as the realisation of threats identified within the organisational structure, as well as undefined threats from the external environment, often leads to organisational disintegration, thereby impeding the achievement of the planned goals.

The analysis of the subject literature has made it possible to identify a research gap concerning the insufficient recognition of factors and organisational contexts that determine the effectiveness of human risk management, both in the face of current and anticipated threats arising from the development of Industry 4.0.

This article presents a forward-looking approach to personnel risk in small and medium-sized enterprises, focusing on the process of identifying and assessing the factors shaping the appetite for personnel risk. In doing so, it aims to address a research gap in the approach to this issue.

2. Literature review of personnel risk and of inherent risk

The perception of risk in relation to individual actors in companies is an extremely important, but young aspect that is the subject of scientific research.

In the literature, this issue is most often attributed to the result or impact of unfavorable phenomena in the area of the occurrence of health effects [Tyranska, 2007, p. 160], errors in the acquisition and allocation of human resources [Lipka, 2002, p. 24], imperfections in people's work [Bochniarz, Gugala, 2005, p. 97], as well as individual characteristics and predispositions of employees [Shelest, 2013, p. 76]. Taking into account these assumptions, it is necessary to emphasise that the company should begin to identify personnel risk as early as the start of the recruitment process because this is the first aspect, the result of which affects the goals of the company.

Personnel risk affects the functioning of all planes in the enterprise and it therefore belongs to the category of general risk [Skowron-Grabowska, Mesjasz-Lech, 2016, p. 23]. Its materialization can bring a positive or negative impact, both on the tangible and intangible context of the enterprise.

The functioning of modern enterprises is determined by the presence of constantly changing factors of a social and economic nature, as well as of affective, behavioral and cognitive reactions of employees in the organisational environment [Oreg et al., 2011, p. 464]. The occurrence of personnel risk is therefore inherent, as it is associated with any activity or process for the implementation of which a person is directly or indirectly responsible.

The most common risk in relation to human labour is absenteeism. Justified absence of an employee, for example caused by an illness, can only lead to consequences on the level of efficiency of individual activities performed at the operational level. Therefore, unjustified absence from work, motivated for example with the occurrence of occupational illness or with a decrease in job satisfaction or loyalty, can negatively affect both the finances, image and efficiency of the company.

Inherent risk, according to indications in the literature, is understood as the exposure caused by a specific risk before any action is taken to manage it [www 1]. The presented approach clearly indicates that inherent risk, as the name suggests, is an intrinsic circumstance, associated with an action regardless of the fact of its feasibility. This means that the company should identify the uncertainty that may affect organisational goals, in connection with the undertaking of a certain activity, as well as in the situation of abandonment at any stage of its implementation. Such a procedure makes it possible to identify and compare the scale of risk, associated with the sequential implementation of strategic plans, as well as to assess the impact of a single activity on the risk of the main process.

With regard to personnel risk, as needs to be pointed out, it should be understood as the impact of measurable uncertainty on the ability of the entity, to achieve a certain goal, as well as in the situation of deviation from the implementation of certain activities. A measurable uncertainty is faced by an entrepreneur when she/he is able to determine at least one parameter affecting the goal. These parameters include:

Uncertainty impact time – this is the period of time during which a specific factor, which was not considered in the strategic analysis, affects the effectiveness of activities aimed at achieving the goals of the enterprise. Most often, the time of uncertainty impact is identified during steering control, which allows ongoing monitoring of indicators and variables that illustrate the predictability of people's behavior under certain market and organisational rules [Frieske, 2012, p. 22];

Range of uncertainty – this is the set of all entities directly and indirectly responsible for achieving the goal, which, as a result of a certain deviation, may be unable to carry out professional activities, outlined by individual organisational units, as well as those defined by senior management [Kulp, 1928, p. 5];

The cost of uncertainty – this is the sum of financial and non-financial outlays that an entrepreneur should secure in order to achieve organisational goals, in the situation of negative impact of personnel risk [Knight, 1993, p. 19].

The indicated contexts form the basis for estimating the impact of uncertainty on the ability of the enterprise to achieve goals and objectives at the operational and tactical levels.

3. Identification of personnel risk in relation to organisational cultures

With a view to establishing that personnel risk affects the ability of an enterprise to achieve its organisational goals, it would be necessary to identify the intra-organisational context that determines the emergence of phenomena that increase the level of uncertainty with regard to the functioning of people in enterprises.

The point of reference of the considerations undertaken in the area of the issue under discussion is the organisational culture, understood as the specifics of the company, resulting from its functioning in a particular community [Aniszewska, 2003, p. 20]. K. S. Cameron and R. E. Quinn specified four types of organisational cultures, based on the competing values model, detailing the presence of hierarchy culture, market culture, clan culture and adhocracy culture [Cameron, Quinn 2003, p. 40]. The characteristics identified by the researchers, which define the mode and nature of employees' work activities in each organisational culture, formed the basis for assigning inherent personal risk to each culture [see more Kasiewicz, Kurklinski, 2023, p. 90].

Narrow organisational structure and formalized communication channels, intended to ensure the stability of decision-making processes, are features of a hierarchical culture. The centralization of power limits the ability of the enterprise to respond quickly to changes in the environment, thereby reducing the adaptability of employees to rapidly changing market conditions, the effect of which creates space for the emergence of the risk of routine and lack of functionality [Yazici, 2011, p. 27].

A type of organisational culture in which organisational success is measured by results, such as profit, revenue or share levels, is market culture. At its base, this approach promotes innovation and flexibility in operations, but nevertheless codifies competition between parallel organisational cells. Therefore it contributes to the likelihood of the risk of limiting the perception of horizontal action among employees, directing it exclusively to the achievement of individual goals [Krivkovich, Levy, 2013, p. 5].

The clan culture, which is based on a high degree of autonomy and flexibility in the actions of employees, is exposed to the definition of conflicting or mutually exclusive operational goals by individual employees. The present state of affairs is a result of overconfidence in co-workers and a vaguely formulated strategy, which, as a result, significantly contributes to the emergence of the risk of interpretive relativism [see more Zawiła-Niedźwiecki, 2010, p. 19]. However, it should be emphasised that the clan culture intensifies the course of community processes, creating a high level of identity and loyalty of employees to the enterprise.

Increasingly, the occurrence of an adhocracy culture is identified in enterprises, which promotes the implementation of creative and innovative solutions in response to dynamic changes in the organisation's environment. Flat organisational structures, which are a basic feature of adhocracy culture, seem to be a strength when implementing a large number of projects [Piwowar-Sulej, 2010, p. 310]. However, from a strategic perspective, such an orientation can contribute to the increased employee turnover, as it provides space for employees to feel insecure due to imprecise definition of roles, tasks and responsibilities, as well as limited opportunities for growth within the company structure [Woźniak, 2020, p. 3].

In the light of the cited contexts, as well as general management practice, it should be emphasised that the process of identifying personnel risks in an organisation consists of three consecutive activities, which include [see more Covin, 1991, p. 440; Mokaya, 2012, p. 134]:

1. analysis of the intra-organisational context, which consists of identifying weaknesses, threats and opportunities, as well as situational conditions that increase uncertainty, with regard to the achievement of organisational goals by employees;
2. analysis of the company's environment, which consists of the identification of trends in the area of development of technology, innovations, methods and practices, affecting the formula of human resources management;
3. analysis of historical data, showing the extent and frequency of incidents and risks in the past, owing to it, it is possible to objectively determine the probability of occurrence of a certain personnel risk, both in relation to the internal and external perspective.

The implementation of the indicated activities is not assigned to the implementation of individual personnel processes, since the identification of personnel risks is continuous. Any new circumstance relating to the form, mode or scope of work of people in the company, is a potential source of risk that should be analysed.

3.1. Personnel risk assessment

The most commonly used tool in the risk assessment process is a risk matrix. In its concept, it allows to estimate the level of risk, taking into account two criteria: the probability of risk occurrence and the consequences of risk occurrence [Murray-Webster 2010, p. 29].

The entrepreneur or organisational unit responsible for risk assessment, using this tool, assigns a probability value that determines how often a given risk is likely to occur. Probability can be expressed on various scales, such as frequency (e.g. “once a month”), percentage (e.g. “40% chance of occurrence”) or point scale (e.g. 1–5, where 1 means “very unlikely” and 5 means “very likely”). The impact that a given threat may have on an organisation is also assessed. Impacts can be measured in financial terms (e.g. the amount of risk costs), operational terms (e.g. the duration of business interruption) or in reputational terms (e.g. the level of customer churn). Analogous to probability, impacts can be assessed on a point scale (e.g. 1–5, where 1 means “low impact” and 5 means “catastrophic impact”).

The risk assessment method indicated above can be used for personnel risk. Taking into account the difficulty, consisting in the ongoing measurement and consideration of variables, affecting the shape of personnel risk, it is recommended to apply it to the strategic goals of the organisation [cf. Ziemski, 2016, p. 551]. Referring to the tactical and operational level of risk impact, the literature details the validity of using qualitative risk assessment models, which include profile analysis, risk factor cataloging, and the Preliminary Hazard Analysis (PHA) method.

Profile analysis involves the development of a detailed profile of an organisation as a basis of reference to the identified risks, which are valued on the basis of specific characteristics and criteria characteristic of a particular enterprise [Zawiła-Niedźwiecki, 2013, p. 76]. The result of the analysis makes it possible to make a targeted and directional plan for the development of employees, by adapting training programs to their individual needs and potential, which contributes to building organisational resilience at the operational level.

Preliminary Hazard Analysis (PHA) is, among the risk assessment methods, particularly useful in evaluating personnel risks associated with the implementation of new projects, processes and functions in the company. Its purpose is to prospectively identify and evaluate potential hazards that may occur in the system or process being analysed [Krause, 2011, p. 175]. The main parameter on which the application of the Preliminary Hazard Analysis method is based involves the knowledge and experience of those coordinating and knowing the boundary conditions of the project, process or function being analysed. Thus, the manager's task is to gather information about potential risks, assess the probability of their occurrence under optimal operating conditions, and indicate the level of their impact on the objectives of the specific project, as well as on the enterprise. The result of this analysis is presented in the form of a risk ranking statement. For risks that are characterised by a high probability of occurrence and by a strong impact on the objectives, warning mechanisms are developed based on the established level of risk appetite, triggering specific procedures for action.

4. Methodology of the conducted research

The author of this article, wishing to know and present the perception of personnel risk by managers, representing small and medium-sized enterprises, conducted a study, allowing a more precise reference to the analysed issue.

The goal of the study was to identify the contexts that formulate the personnel risk catalog in small and medium-sized enterprises operating in the sector of production of electrical and electronic components and equipment which, according to the Polish Classification of Activities, belong to high-technology industries.

Tolerating a certain level of risk can contribute to increasing commitment and optimizing the level of employee turnover. This chapter presents the results of the study, implemented with the method of a diagnostic survey, using the author's research tool, i.e. a survey questionnaire.

A total of 182 managers participated in the survey, 53% of whom represented small enterprises, while 47% managed the structures of medium-sized enterprises. Detailed characteristics of the research sample are presented in Table 1.

TABLE 1.
Characteristics of the research sample

Criterion	Explanation – scope	Number of people participating in the study [n]	Respondents in %
Gender of respondents	female	70	38%
	male	112	62%
Age of respondents	up to 30	40	22%
	31–40	52	29%
	41–50	35	19%
	51–60	31	17%
	61 and over	24	13%
Length of service of respondents in the position of manager	not exceeding 1 year	27	15%
	from 1 to 5 years	53	29%
	from 5 to 10 years	80	44%
	more than 10 years	22	12%

Source: the results of the author's own research.

All surveyed enterprises were representatives of high-tech industries, operating in the market for at least 3 years. Taking into account the intra-organisational formal conditions of the surveyed business entities related to ensuring normative standards of information protection, the survey was conducted in a mixed formula – using traditional and online questionnaires. The survey was carried out for 6 months in the period from November 2023 to April 2024. It should be noted here that the choice of small and medium-sized enterprises as the subjects of the empirical study was dictated by the need to isolate the functional characteristics of organisational cultures and structures, shaping the scope of personnel risk. Indication of other groups of enterprises, in the author's opinion, is unwarranted, as it is difficult to make inferences, based on the analysis of extensive or limited organisational structures and cultures.

The main research limitation, in the author's opinion, is the insufficient amount of historical data in the area of the studied phenomena, which becomes more important in the context of dynamically emerging market changes. The result of that is a limited ability to identify trends and to measure the effectiveness of new solutions. Therefore, it is justifiable to continue the present research, in order to identify the real links between variables, as well as to reduce the impact of periodic changes, occurring in the environment on the outcome of the research measurement.

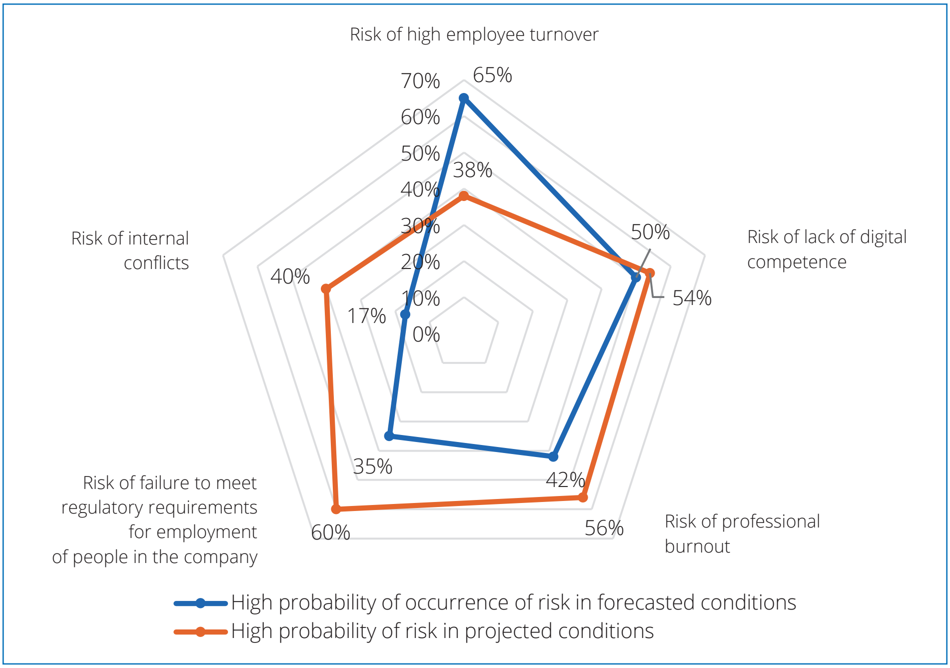
5. The results of the author's own research

The first substantive aspect constituting the subject of the survey was the managers' perception of personnel risk. The majority of the respondents, i.e. 55%, identified the present issue as a risk related to the functioning of people in the organisation, which can lead to unforeseen costs, loss of expertise, as well as weakening of the company's operational capabilities. According to 31% the of respondents, the phenomenon under study refers to uncertainty in the management of employees, which can bring unexpected benefits or losses that positively or negatively affect the achievement of organisational goals. Only 14% of the respondents indicated that personnel risks are any factors and events that can negatively affect the efficiency, morale and stability of the employee team. This includes both internal and external problems, such as changes in labour laws, new technologies, or changes in the organisational structure. At this point, it is necessary to emphasise that a total of 69% of the respondents agreed with the assumption that the result of an event bearing the hallmarks of personnel risk is the exclusive occurrence of negative consequences with regard to operational goals and processes. However, of the 69% of the respondents identifying personnel risk as a threat, only 28% of the respondents indicated that they had specified methods for identifying, assessing and managing this risk in their company.

The second part of the study consisted of three complementary research components. The first part was devoted to identifying the current and projected (in the next 10 years) level of personnel risk in relation to the criterion of high probability of its occurrence in the surveyed companies. The obtained results are included in Figure 1.

FIGURE 1.

A catalog of personnel risks with a high probability of occurrence

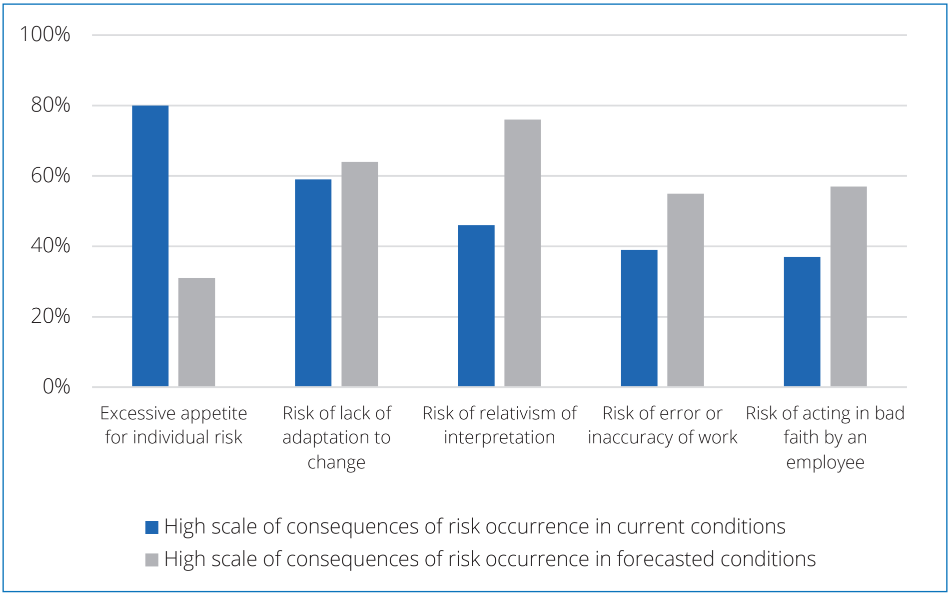


Source: the results of the author's own research.

The results of the survey in the area in question show that the respondents' attitudes to the phenomena shaping personnel risk are evolving. This variability is the result of changes in the business environment, as well as of the growing role of technology in the human resource management process.

As part of the second research component, the respondents made an identification of the current and projected in the next 10 years level of personnel risk in relation to the criterion of the high impact of its occurrence in the surveyed companies. The result of the survey is illustrated in Figure 2.

FIGURE 2.
Catalog of personnel risks the occurrence of which causes serious consequences for the enterprise



Source: the results of the author's own research.

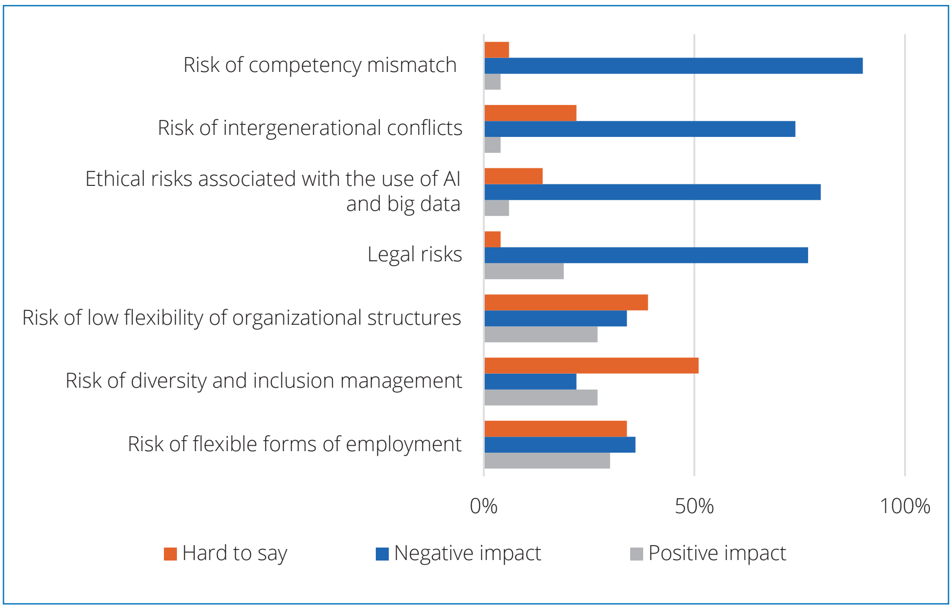
The scale of the consequences of the occurrence of certain personnel risks, as indicated by the respondents, corresponds to the direction of development of the branch of the economy in which the surveyed enterprises operate. Adequately, excessive appetite for unit risk, which is a consequence of the involvement of individual entities in the implementation of several activities with disconnected organisational goals, was indicated by 88% of the respondents in the current conditions, as companies largely do not undertake or objectively do not have the ability to integrate technological processes.

Moreover, in the perspective of the next 10 years, in the opinion of the managers participating in the survey, the scale of the consequences resulting from excessive appetite for unit risk by employees. This should decrease significantly, as evidenced by the reduction in respondents' indications for this type of risk to 31%. The development of enterprises in the conditions of economy 4.0, functionally linked to the increase in the use of advanced technological tools, thereby reducing the link between the effectiveness of the implementation of the main process, from the performance of divergent activities by individual employees.

The final research component, formulated in the second part of the survey questionnaire, was to identify the impact of specific personnel risks in the perspective of the projected situational conditions that are a consequence of the operation of enterprises in the 4.0 economy. The respondents' answers are presented in Figure 3.

FIGURE 3.

Assessing the impact of selected personnel risks



Source: the results of the author's own research.

For each of the listed risks, the respondents detailed the possibility of their positive as well as negative impact on organisational goals. The only risk that was not clearly identified as either an opportunity or a threat affecting the achievement of organisational goals was the risk of diversity and inclusion management. As many as 51% of the respondents, were unable to identify the potential impact of this risk on organisational goals.

In the third part of the survey, the author sought to find out the factors that influence the increased appetite for personnel risk, giving space for periodic or partial acceptance of a higher than expected level of risk associated with the functioning of employees in the organisation's structures. The respondents were asked to make a zero–one rating with regard to the factors that have the potential to increase the appetite for personnel risk. A score of "0" meant a clear indication that the identified factor does not provide a basis for accepting a higher level of risk, while a score of "1" meant that the indicated factor could provide a basis for accepting a higher level of personnel risk. The chart presented in Figure 4 shows the obtained results.

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The result of the survey in this area indicates that only the implementation of incentive programs in the non-salary area, in the opinion of 47% of the respondents, does not provide a basis for accepting a higher than planned level of personnel risk. All other factors, which are the subject of evaluation in this question, were ambiguously but nevertheless overwhelmingly, considered to be a basis for increasing the level of appetite for personnel risk in the company.

TABLE 2.
Contexts shaping the level of risk appetite in the company

Factor	Rating "0"	Rating "1"	Difficult to say
Implementation of incentive programs in the non-wage area	47%	21%	32%
Managing multi-generational teams	40%	50%	10%
Implementing a new business model, e.g. change in structure, industry	33%	40%	27%
Delegation of authority related to the implementation of a project/new process	20%	67%	13%
Adaptation to changes in the company's environment	19%	55%	26%
Digital transformation – changing the employment model or allocation of human resources in the company	8%	48%	44%

Source: the results of the author's own research.

5. Conclusions

In the perspective positioning of the organisation of the personnel risk assessment process, in the light of the obtained research results, in the author's opinion it is reasonable that the used methods and techniques take into account the changing market and structural conditions in the enterprise. A focus on interoperability, i.e. integrating risk assessment methods with other information systems in place at the company such as payroll, communications and internal and external relationship management systems can help in this regard.

However, it should be remembered that any business model should answer three fundamental questions related to achieving a competitive advantage in the market: what the company intends to do, what its key resources and competencies are, and how the company's resources and competencies are used in daily operations [Wasiluk, 2017, p. 98]. The change in the intensity of the impact of certain personnel risks, in the perspective of the projected situational conditions over the next 10 years, which was indicated by the respondents, provides a legitimate basis for the separation of reporting structures in companies.

In the light of the conducted analyses, it can be concluded that the research objective – namely, the identification of a catalog of personnel-related risks in small and medium-sized enterprises operating under the conditions of Industry 4.0 – has been satisfactorily achieved. The developed summaries, which encompass both current and projected threats, enabled a structured characterization of risks resulting from dynamic technological and organisational changes. However, it should be emphasised that the primary limitation of the study was the restriction of the research sample exclusively to members of managerial staff, which may have led to a one-sided perspective on the context of personnel risk management, omitting the viewpoints of employees at the tactical and operational levels. Therefore, it is reasonable to highlight the need for further research that includes the perspectives of lower-level employees in order to more comprehensively identify the risk factors influencing personnel risk management processes in the context of Industry 4.0.

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