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THE INFLUENCE OF PEOPLE DEVELOPMENT PROGRAMS ON THE BUSINESS PROCESSES QUALITY IN ORGANIZATIONS WITH THE IMPLEMENTED ISO 10015 STANDARD

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Abstract: *This study examines the impact of people development programs (PDPs) on business process quality in organizations implementing the ISO 10015 standard. The research focuses on the relationship between PDPs and the number of failures among employees, distinguishing between production operators and administrative staff. A questionnaire was administered to 1980 employees across 68 Slovak companies certified under ISO 9001 and using ISO 10015. The results indicate a strong negative correlation (r = -0.78) between PDP participation and failures among production operators, suggesting significant improvements in process quality. However, no significant relationship was found for administrative staff (r = -0.04). The findings reveal a marked difference between these groups regarding PDP effectiveness. Overall, a moderate negative correlation (r = -0.51) was observed across all employees, affirming that PDPs enhance business process quality by reducing employee failures. These insights underscore the importance of PDPs in fostering operational efficiency, particularly among production personnel.*

Keywords: *people development programs, business process quality, ISO 10015 standard, employee performance, production operators, administrative staff*

1. Introduction

ISO 10015 is an international standard that provides guidelines for training and competency development within organizations to enhance quality management. It is designed to support organizations in identifying, planning, implementing, and evaluating training programs to ensure that employees acquire the necessary skills to contribute effectively to business processes and overall organizational goals. ISO 10015 is closely related to ISO 9001, as it focuses on improving human resource competencies to maintain and enhance business process quality. The standard emphasizes a systematic approach to training, linking employee development to business objectives, and using training as a tool for continuous improvement.

In the context of the conducted empirical research, ISO 10015 plays a crucial role in ensuring that people development programs are influencing business process quality by reducing errors, improving efficiency, and fostering better workplace performance. Among production operators, PDPs reduce

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non-conforming products by providing better technical training, enhancing process adherence, and improving error detection, ensuring higher product quality. For administrative staff, PDPs minimize missed deadlines by developing time management, organizational skills, and task prioritization, leading to improved workflow efficiency. Additionally, PDPs help reduce official complaints from coworkers by fostering teamwork, communication skills, and conflict resolution strategies, enhancing cooperation and workplace harmony.

We suppose that PDPs significantly improve process quality among production operators and administrative staff as well. Role-specific PDPs should be designed to target key weaknesses within each group, ensuring optimal business process quality improvements across different organizational functions.

1.1. Research gap

Despite the recognized importance of people development programs in organizational performance, limited research exists on their specific impact on business process quality, particularly in organizations implementing the ISO 10015 standard. Prior studies often overlook differences between employee roles, leaving a gap in understanding how PDPs affect administrative staff versus production operators. This research addresses this gap by providing empirical evidence of PDP effectiveness in reducing errors among production workers while showing minimal impact on administrative staff. These findings highlight the need for role-specific training strategies, optimizing PDP implementation for improved business process quality across different employee groups.

1.2. Research objectives

The main research objective is to analyze the impact of people development programs on business process quality in organizations implementing the ISO 10015 standard and to identify differences in their effectiveness between administrative staff and production operators. Partial research objectives are:

- To determine the relationship between the number of people development programs and the number of employee failures in organizations with the ISO 10015 standard;
- To evaluate the impact of PDPs on business process quality for production operators, measured by the number of non-conforming products;
- To assess the influence of PDPs on business process quality for administrative staff, based on missed deadlines and co-worker complaints;
- To compare the effectiveness of PDPs between production operators and administrative staff to identify differences in their impact on business process quality.

2. Literature review

Implementing comprehensive people development programs, including training, mentorship, career development, and competency management, is vital for organizational success. These initiatives not only enhance employee skills and satisfaction but also contribute to improved organizational performance and competitiveness.

Competence management and workforce training are critical for organizational success, with ISO 10015 serving as a framework for structured employee development. Santos et al. (2024) analyzed competence management practices in Brazilian industries, highlighting that structured role-based competency mapping enhances workforce efficiency. Lin et al. (2010) developed an accreditation system to measure ISO 10015 implementation, showing that structured training leads to measurable improvements in organizational performance.

Stefanelli et al. (2020) emphasized the role of environmental training within ISO 10015, suggesting the need for further integration with sustainability practices. Wang & Wu (2009) proposed a framework combining ISO 10015 with quality function deployment, linking employee education directly to human capital management. Taheri et al. (2016) applied ISO 10015 to sports organizations, demonstrating its effectiveness in identifying and addressing educational needs. Lastly, Antiushko et al. (2020) introduced the PDCA cycle in ISO 10015:2019, reinforcing continuous improvement in competence management. These studies collectively underscore ISO 10015's role in optimizing training and enhancing workforce quality. Organizations implement various people development programs to enhance employee competencies, boost performance, and achieve strategic objectives. These initiatives encompass training and development, mentorship, career development, and competency management. Jacobs and Washington (2003) emphasized that structured training programs enhance employee skills, leading to increased productivity and organizational effectiveness. Similarly, Aguinis & Kraiger (2009) highlighted that training contributes to job satisfaction and reduces employee turnover. Furthermore, Salas et al. (2012) noted that effective training programs foster teamwork and collaboration, essential for organizational success. Kram (1983) identified two primary mentoring functions: career support and psychosocial support, both crucial for employee development. Scandura and Ragins (1993) found that mentorship positively influences job satisfaction and career advancement. Additionally, Eby et al. (2008) conducted a meta-analysis revealing that mentored individuals exhibit higher performance and organizational commitment. Moreover, Competency management involves identifying, developing, and utilizing employee skills to meet organizational objectives. Additionally, Zohra et al. (2023) found that effective competency management enhances organizational learning and adaptability and competency-based assessments predict job performance and inform targeted development programs. Luthans et al. (2007) introduced the concept of Psychological Capital (PsyCap), comprising hope, efficacy, resilience, and optimism, which positively correlates with employee performance and satisfaction. Their research indicates that developing PsyCap through targeted programs enhances both individual and organizational outcomes. Furthermore, Khosravi et al. (2025) demonstrated that ISO 10015-based training programs improve knowledge and satisfaction among participants, leading to better performance. ISO 10015 is an international standard providing guidelines for the effective management of training processes within organizations. Established by the International Organization for Standardization (ISO), it aims to ensure that training activities are aligned with organizational goals and contribute to continuous improvement. The standard outlines a systematic approach to training, encompassing the identification of training needs, design and planning of training programs, provision of training, and evaluation of training outcomes (Antiushko et al., 2020). The core objective of ISO 10015 is to integrate training into the organization's quality management system, thereby enhancing employee competencies and overall performance. By following this structured approach, organizations can ensure that their training initiatives are not only effective but also contribute to the achievement of strategic objectives (Antiushko et al., 2020). Implementing ISO 10015 can significantly enhance process quality within organizations. By systematically identifying and addressing skill gaps, organizations can tailor their training programs to meet specific operational needs, leading to improved efficiency and reduced errors (Sh & Lafta, 2022). This alignment ensures that employees

are equipped with the necessary competencies to perform their tasks effectively, directly impacting the quality of processes and services.

Furthermore, ISO 10015 emphasizes the importance of evaluating training effectiveness. This continuous assessment allows organizations to refine their training programs based on feedback and performance metrics, fostering a culture of continuous improvement (Sh & Lafta, 2022). Such an approach not only enhances individual performance but also contributes to the organization's overall quality objectives. Competence management and people development are critical factors influencing organizational quality. Several studies have explored the relationship between these elements and organizational performance. Ellström and Kock (2008) examined strategies for competence development in organizations, highlighting those investments in employee development led to improved job performance and organizational effectiveness. Their findings suggest that a supportive work environment that encourages learning and development is essential for achieving high-quality outcomes. Wang (2014) conducted a longitudinal study on innovation competence and quality management, revealing that organizations focusing on continuous learning and development are better positioned to adapt to market changes and maintain competitive advantage. This adaptability is closely linked to the organization's ability to uphold high-quality standards. Zohra et al. (2023) investigated the impact of competency management on organizational learning, finding a positive correlation between effective competency management practices and enhanced organizational learning capabilities. This relationship underscores the importance of structured competency management in achieving quality improvements. Khosravi et al. (2025) explored the role of virtual training workshops based on ISO 10015 in increasing students' knowledge in health and safety fields. The study concluded that implementing ISO 10015-based training programs significantly improved participants' knowledge and satisfaction, indicating the standard's effectiveness in enhancing training quality. Additionally, studies have shown that competency assessments and self-development initiatives positively impact employee retention and workplace satisfaction (Vuppalapati & Roohi, 2022). These factors are crucial for maintaining a committed workforce dedicated to upholding quality standards.

The literature reviewed confirms that ISO 10015 provides a structured framework for training and competence development, ensuring that employees acquire the necessary skills to enhance process quality. Studies demonstrate that organizations implementing ISO 10015 experience higher productivity, better compliance, and reduced operational failures. Competence management, when integrated with structured training programs, significantly improves service quality across industries. However, effective implementation requires strong leadership, engagement strategies, and continuous monitoring to sustain workforce development. Positive reactions often correlate with higher engagement and motivation to apply learned skills and collecting feedback through surveys and questionnaires helps in refining future training initiatives (Sitzmann et al., 2008). Pre- and post-training assessments, such as tests or practical evaluations, can quantify learning gains (Kraiger et al., 1993). This indicator ensures that the training content effectively addresses the identified skill gaps (Arthur et al., 2003). Observations, self-assessments, and supervisor feedback can provide evidence of behavioral changes (Blume et al., 2010). This indicator reflects the transfer of training to job performance, directly influencing process quality (Baldwin & Ford, 1988). For instance, a reduction in non-conforming products among production operators indicates improved process quality resulting from effective training (Tharenou et

al., 2007). Aligning training outcomes with organizational goals is essential for demonstrating value (Aguinis & Kraiger, 2009). Evaluating the effectiveness of people development programs is crucial for organizations aiming to enhance quality and performance. Recent literature (Wang et al., 2002) highlights several methodologies and metrics to assess the impact of these programs on organizational quality. Metrics such as productivity improvements, error rate reductions, and enhanced customer satisfaction serve as indicators of training effectiveness. Evaluating the impact of people development programs on quality involves utilizing structured evaluation models, monitoring relevant KPIs, and applying practical frameworks.

3. Methodology

For the empirical research by research objectives we used a questionnaire as a structured method for collecting quantitative and qualitative data from participants to analyse the influence of people development programs on the business processes quality in organizations with the implemented ISO 10015 standard.

Based on The Dillman Total Design Survey Method, 15 steps were defined as follows:

S1: The definition of the research objectives (1 main objective and 4 partial objectives) and research methods (The Dillman Total Design Survey Method, Pearson´s chi-squared test, Correlation Analysis).

S2: Definition of research variables;

S3: Primary construction of the questionnaire;

S4: Definition of criteria for selection of companies [(1) certified quality management system according to the ISO 9001 standard, (2) implemented ISO 10015, (3) ability to count failures expressed by the number of non-conforming products, missed deadlines, and co-worker complaints;

S5: Selection of companies (113);

S6: Selection of respondents (production operators, administrative staff);

S7: Definition of time sequence concerning filling questionnaires (November and December 2024);

S8: Sending questionnaire;

S9: Receiving completed questionnaires;

S10: Evaluation of the number of non-returned and returned questionnaires;

S11: Questionnaires were again sent to 57 companies that did not respond (10 days after completion);

S12: Identification of all returned questionnaires (68 questionnaires);

S13: Identification of representativeness of the selected sample of enterprises by Pearson´s chi-squared test;

S14: Calculation of correlation indexes;

S15: Interpretation of the results.

3.1. Research questions and hypothesis

Based on the research gap and literature review, we identified two basic research questions and 4 research hypotheses.

Research questions

- RQ1: What is the influence between the people development programs and business process quality?
- RQ2: Is there a significant influence difference in the group of administrative staff and production operators related to the people development programs?

Research hypothesis

- H1Q1: The number of people development programs (PDPs) has a negative linear dependence on the business process quality expressed by the number of failures in the sample of employees (NF).
- H2Q2: The number of people development programs in the group of administrative staff (PDPa) has a negative linear dependence on the business process quality expressed

by the number of failures (NFa).

- H3Q2: The number of people development programs in the group of production operators (PDPo) has a negative linear dependence on the business process quality expressed by the number of failures (NFo).
- H4Q2: There is no significant difference between the group of administrative staff and production operators related to the influence between the people development programs and business process quality.

We simplified a definition of the business process quality for research purpose and we determined it by these parameters:

- non-conforming products in the group of production operators;
- warnings by a manager about not meeting a task deadline in the group of administrative staff;
- official complaints from co-workers about employee failure in the group of administrative staff.

3.2. Data collection and sample representativeness

The empirical research was carried out in the months of November to December 2024. The statistical set consisted of all organizations certified according to the ISO 9001 standard in the Slovak Republic. The sample set consisted of organizations that also had the ISO 10015 standard implemented. A total of 68 organizations participated in the research, which indicates only a small number of companies with the ISO 10015 standard implemented. We verified the representativeness of the sample set compared to the statistical set with the chi-square test. The sample set is representative according to the feature, which is the size of the company. A total of 1980 employees completed the questionnaires, of which 1190 were production operators and 790 were administrative employees. The research results are based on the following questions for employees:

- How many people development programs have you completed in the last three years? (PDPs; PDPa; PDPo)
- How many non-conforming products have you been responsible for in the last year? (NFo)
- How many times have you been warned by your manager about not meeting a task deadline? (NFa1)
- How many times have your co-workers officially complained about your failure? (NFa2)

The statistical sample were all companies certified to the ISO 9001 standard in Slovak Republic and the selection sample were companies certified to the ISO 9001 standard in Slovak Republic and with implemented ISO 10015. We calculated the representativeness of the sample using Pearson´s chi-squared test (χ^2 - test), which is also known as the 'goodness-of-fit' test. It tests a null hypothesis, stating that the frequency distribution of certain events observed in a sample (ni) is consistent with a particular theoretical distribution (npi) at the level of statistical significance (α) for appropriate degrees of freedom (k-1), where k is the number of fitted parameters. The frequencies observed, and the expected, (theoretical) frequencies are shown in Table 1.

Table 1. χ^2 - test due to organizations´ size.

	np_i [%]	n_i [%]	$(n_i - np_i)^2$	χ^2
Micro enterprises	3.00	2.94	0.00	0.00
Small enterprises	24.00	23.53	0.22	0.01
Medium enterprises	41.00	42.65	2.71	0.07
Large enterprises	32.00	30.88	1.25	0.04
				0.12

The χ^2 value we achieved is lower than the critical χ^2 value at the level of statistical significance $\alpha = 0.05$ for 3 degrees of freedom (4 - 1), which in particular presents the value of 7.815 (value in statistical tables).

Since 0.12 < 0.35, we accept the null hypothesis and we state that the sample file of organizations represents their theoretical distribution.

4. Results

The empirical research was conducted to assess the impact of people development programs on business process quality. A total of 1,980 employees participated in the study, representing a diverse workforce from various organizations. Within this sample, 790 employees (39.9%) were categorized as administrative staff, while 1,190 employees (60.1%) were identified as production operators. This distribution reflects the organizational structure, where production-oriented roles constitute a larger proportionof the workforce.

A total of 68 organizations responded to the research inquiry, contributing valuable data for analysis. The average number of employees per organization was 29, indicating that the sample included both small and medium-sized enterprises. Importantly, all participating organizations were engaged in production processes, ensuring that the research context remained consistent across the surveyed companies. However, the study did not examine the specific types of production processes, as this factor was deemed irrelevant to the research objectives. The primary focus remained on evaluating the effectiveness of people development programs in enhancing business process quality, regardless of industry-specific production variations. Research variables were:

- PDPs = Number of people development programs in the sample;
- PDPa = Number of people development programs in the group of administrative staff;
- PDPo = Number of people development programs in the group of production operators;
- NF = Number of failures in the sample;
- NFa = Number of administrative staff failures;
- NFa1 = Number of missed deadlines in the group of administrative staff;
- NFa2 = Number of complaints from co-workers in the group of administrative staff;
- NFo = Number of non-conforming products in the group of production operators.

Data were collected using a structured questionnaire, which targeted both administrative staff and production operators. The survey was designed to measure the effectiveness of training programs by correlating employees' participation in PDPs with their work performance and quality outcomes. Participants were asked how many people development programs (PDPs) they had completed in the last three years, with distinctions made for administrative staff (PDPa) and production operators (PDPo). This variable served as a key independent measure to assess workforce development.To evaluate business process quality, employees reported the number of non-conforming products (NFo) they had been responsible for in the last year (for production operators), the number of warnings received from managers for missed deadlines (NFa1), and official complaints from co-workers (NFa2) (for administrative staff).

The research aimed to evaluate the impact of people development programs (PDPs) on business process quality by analyzing correlations between training participation and performance indicators among both administrative staff and production operators. The study utilized three primary correlation measures: COR_PDPs_NF,

COR_PDPa_NFa, and COR_PDPo_NFo, representing the relationship between PDPs and the number of failures in different employee groups. The Table 2 shows that the overall sample demonstrated an average number of PDPs completed (PDPs) of 4.11, with a standard deviation of 2.80, while the average number of failures (NF) was 2.85 (STD = 2.39). Among administrative staff, the mean PDPa was 5.78 (STD = 2.62), and the average number of administrative failures (NFa) was 2.16 (STD = 2.28). In contrast, production operators had a lower average PDPo of 2.99 (STD = 2.32) but a higher failure rate (NFo) of 3.30 (STD = 2.36).

The correlation results indicate a strong negative relationship between PDP participation and the number of failures among production operators (COR_PDPo_NFo = - 0.78), suggesting that higher participation in PDPs significantly reduces non-conforming products. In contrast, the correlation between PDPs and failures across the entire sample (COR_PDPs_NF = - 0.51) also shows a moderate negative relationship, reinforcing the broader effectiveness of PDPs in improving business process quality. However, the correlation between PDP participation and administrative failures (COR_PDPa_NFa = - 0.04) was nearly negligible, indicating that PDPs had little to no impact on reducing deadline warnings and complaints among administrative staff.

The visualization of the relationships between variables for calculating the correlation index is shown in Figure 1 and Figure 2. For visualization, we calculated partial correlations for every 10 employees and the graph thus shows a set of 79 values obtained for 790 administrative employees and 119 values obtained for 1190 production operators.

Table 2. Average values (AVG) and standard deviations (STD) of research variables.

Sample	PDPs	NF	**Administrative Staff**	PDPa	NFa	**Production operators**	PDPo	NFo
AVG	4.11	2.85	AVG	5.78	2.16	AVG	2.99	3.30
STD	2.80	2.39	STD	2.62	2.28	STD	2.32	2.36
COR_PDPs_NF		**-0.51**	COR_PDPa_NFa		**-0.04**	COR_PDPo_NFo		**-0.78**

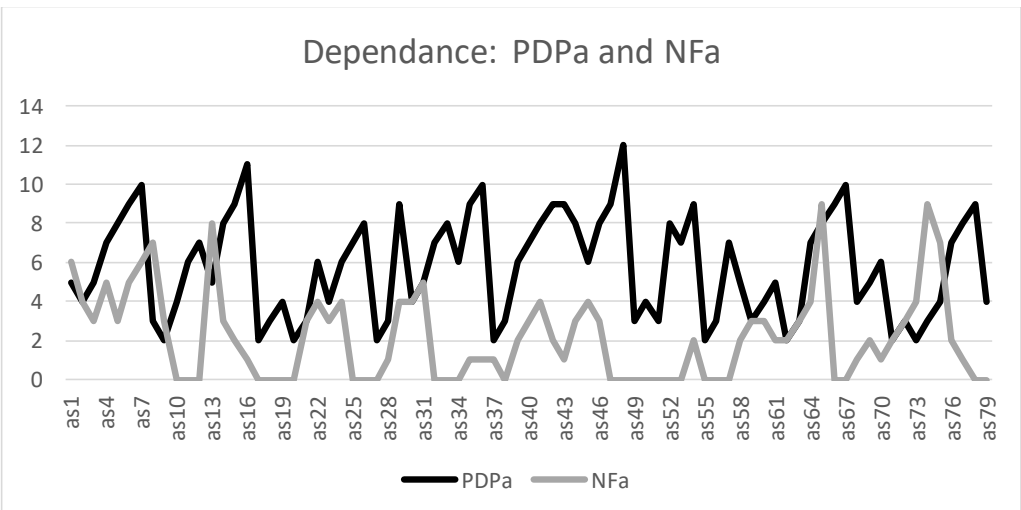

Figure 1. Dependence between PDPa and NFa

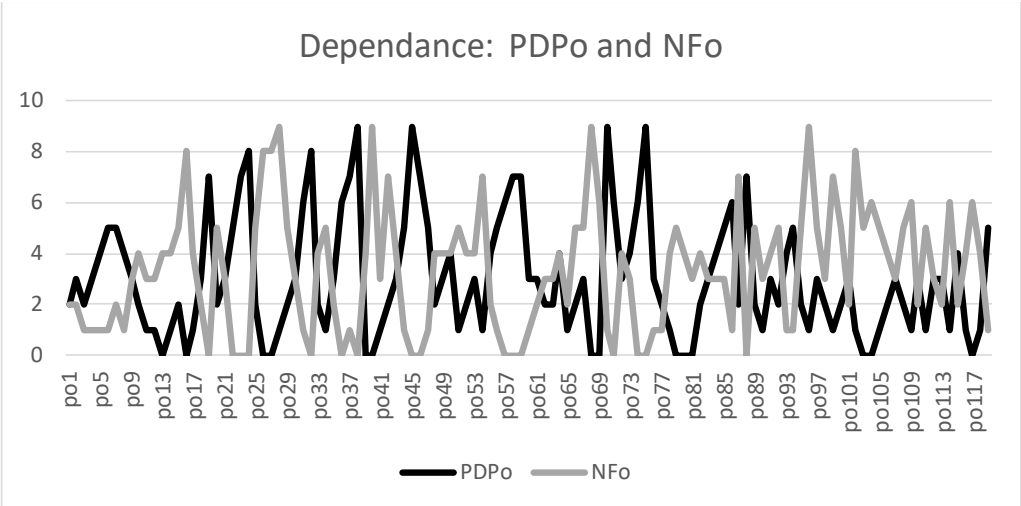

Figure 2. Dependence between PDPo and NFo

5. Discussion

We identified 4 research hypotheses. Their definition was based on previous studies that showed that there is a significant relationship between employee development and error reduction or quality improvement. We wanted to investigate the specifics between administrative staff and production operators. We set questions that we reduced to specific types of errors or failures. Our research is relatively simple, but simplification serves to achieve objective results. We tracked the number of failures over the past year, and the number of completed development programs over the past three years. Based on empirical research, we accepted some hypotheses and rejected others.

There is a negative linear dependence between the number of failures and the number of people development programs in the sample of all employees where the correlation index is r = - 0.51. The number of development programs all employees in the sample had an impact on their number of failures. The number of development programs that all sampled employees completed had a positive impact on the number of their failures. The higher the number of development programs an employee completed, the fewer mistakes he made. We confirmed the H1Q1 hypothesis.

The number of failures is calculated as a sum of variables NFa = NFa1 + NFa2, where NFa1 have missed deadlines and NFa2 are complaints from co-workers, and the number of people development programs in the group of administrative staff are independent variables. Correlation index r = - 0.04. The number of administrative staff development programs had no impact on the number of their failures. We did not confirm the hypothesis H2Q2.

There is a strong negative linear dependence between the number of failures (NFo) and the number of people development programs (PDPo) in the group of production operators where the correlation index is r = - 0.78. The more development programs production operators completed, the fewer mistakes they made. We confirmed the H3Q2 hypothesis.

There is a significant difference between the group of administrative staff and production operators related to the influence between the people development programs and business process quality. We did not confirm the hypothesis H4Q2.

The research findings highlight a significant disparity in the influence of PDPs on

production operators and administrative staff work quality. The results indicate a strong negative correlation (r = -0.78) between PDP participation and the number of failures among production operators, confirming that training programs effectively reduce errors in this group. In contrast, the correlation between PDPs and failures among administrative staff was negligible (r = -0.04), indicating that PDPs had little to no measurable impact on their work quality. Several potential explanations for this discrepancy can be identified. Production operators perform structured, repetitive, and standardized tasks that can be directly influenced by training programs. PDPs for this group typically focus on technical skills, adherence to production protocols, and error minimization strategies, leading to tangible improvements in performance. The clear link between skill enhancement and work output explains the strong negative correlation between PDPs and the number of non-conforming products. Conversely, administrative staff engages in cognitive, non-routine, and often subjective tasks such as decision-making, problem-solving, and communication. Unlike production work, administrative tasks do not always have clear performance metrics, making it more challenging to quantify the direct impact of PDPs on their quality. Additionally, administrative errors, such as missed deadlines (NFa1) or complaints from coworkers (NFa2), can be influenced by external factors such as workload distribution, organizational culture, or interpersonal dynamics, which training alone may not fully address. Another critical factor influencing the impact of PDPs is the ability to apply acquired skills in a real-world setting. Production operators receive immediate feedback on their performance, allowing them to quickly implement learned techniques and improve efficiency. The production environment provides a structured framework where training outcomes are reinforced through standard operating procedures and quality control mechanisms. In contrast, administrative staff may face greater variability in their work tasks, reducing the direct applicability of training content. Administrative performance relies heavily on interpersonal skills, problem-solving, and adaptability, which are less easily measured than the tangible output of production tasks. Moreover, training in soft skills may take longer to manifest in behavioral changes, resulting in a weaker immediate impact on performance metrics. The content and delivery of PDPs may also play a role in the observed differences. PDPs for production operators often focus on task-specific competencies, directly addressing work-related challenges. These programs include hands-on training, simulations, and process optimization techniques that directly translate into improved quality outcomes. PDPs for administrative staff might be less tailored to their actual job challenges, leading to a mismatch between training content and day-to-day responsibilities. If training programs emphasize generalized skills rather than role-specific competencies, their impact on administrative work quality may be limited. Furthermore, administrative staff often work in less structured environments, making it difficult to implement standardized improvements across different job functions.

6. Conclusion

6.1. Novelty of the research

This research introduces a unique contribution to the study of people development programs and their impact on business process quality by specifically examining organizations that have implemented the ISO 10015 standard. While previous studies have explored the relationship between training and organizational performance, few have analyzed its effects within the framework of a standardized training management system like ISO 10015. By focusing exclusively on companies that adhere to this standard, the study provides empirical evidence on the

effectiveness of structured training programs in improving work quality, offering insights into how ISO 10015 implementation enhances employee performance.

A second key novelty of the research is the differentiation between administrative staff and production operators. Unlike prior studies that examine employees as a homogeneous group, this research identifies distinct variations in how PDPs impact these two workforce segments. The results indicate that PDPs significantly reduce errors among production operators ($r = -0.78$), while they have a negligible impact on administrative staff performance ($r = -0.04$). This finding suggests that task nature, training content, and skill application differ substantially between these roles, underscoring the need for role-specific training strategies.

Additionally, the study employs a unique correlation-based methodology, comparing employee development over three years with failure rates from the past year. This novel approach allows for a longitudinal perspective on training effectiveness, differentiating it from previous research that often relies on short-term evaluations. By addressing these gaps, the study advances knowledge on ISO 10015-driven training effectiveness and highlights the importance of customized training approaches based on job functions, offering practical recommendations for improving PDPs in manufacturing and administrative settings.

6.2. Research barriers

While the research provides valuable insights into the relationship between people development programs (PDPs) and business process quality, several methodological and contextual barriers should be acknowledged.

One of the primary limitations lies in the correlation analysis timeframe. The study examined the number of PDPs completed over the past three years and compared them to errors recorded within the last year. Although methodologically acceptable, this approach introduces potential variability in the time lag effect of training programs. Employee development may have delayed or cumulative effects on work performance, and different intervals for measuring training and failure rates could yield alternative correlation patterns. This issue is particularly relevant since no prior studies have applied this exact correlation framework, making comparisons with existing literature difficult.

Another significant limitation is the lack of differentiation in production processes. The study did not account for variations in process complexity, degree of automation, or industry-specific operational requirements. While this was not necessary for the research objectives, it is important to recognize that different production environments may have varying impacts on training effectiveness. In highly automated industries, for instance, PDPs may focus more on system maintenance and troubleshooting rather than manual error reduction, potentially influencing the correlation strength.

Lastly, the geographical scope of the study presents a limitation. The research was conducted exclusively in Slovak manufacturing companies, which may limit the generalizability of the findings to other economic, cultural, and industrial contexts. Business environments, regulatory frameworks, and workforce training policies differ across countries, and expanding future research to a multinational sample would enhance the validity and applicability of the conclusions. Addressing these barriers in future studies could provide a more nuanced understanding of the relationship between PDPs and business process quality across diverse organizational settings.

6.3. Practical implications

Unlike production tasks, administrative roles involve cognitive, problem-solving, and interpersonal responsibilities that require different training approaches. Organizations should customize PDPs for administrative staff by focusing on time management,

decision-making, communication, and leadership development rather than technical skills. Scenario-based training, real-world case studies, and role-playing exercises can improve the applicability of training to daily administrative tasks. The study suggests that traditional PDPs do not directly impact administrative performance. Therefore, organizations should integrate mentorship and coaching programs to enhance learning through real-world application. Administrative tasks often lack immediate feedback mechanisms, making it difficult for employees to gauge their performance. Organizations should implement structured task management systems (e.g., project management software, workflow automation) that provide real-time tracking of deadlines, workload balancing, and performance metrics. Regular performance reviews and feedback sessions should be introduced to ensure continuous improvement and accountability. The research indicates that complaints from co-workers (NFa2) contribute to administrative performance issues. Organizations should focus on improving interdepartmental communication by implementing collaborative work environments, cross-functional training, and structured conflict-resolution protocols.

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