Dynamic Relationships Management Journal

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Aims & Scope

The Dynamic Relationships Management Journal is an international, double blind peer-reviewed bi-annual publication of academics' and practitioners' research analyses and perspectives on relationships management and organizational themes and topics. The focus of the journal is on management, organization, corporate governance and neighboring areas (including, but not limited to, organizational behavior, human resource management, sociology, organizational psychology, industrial economics etc.). Within these fields, the topical focus of the journal is above all on the establishment, development, maintenance and improvement of dynamic relationships, connections, interactions, patterns of behavior, structures and networks in social entities like firms, non-profit institutions and public administration units within and beyond individual entity boundaries. Thus, the main emphasis is on formal and informal relationships, structures and processes within and across individual, group and organizational levels.

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EDITORIAL - FOSTERING CAMARADERIE THROUGH SHARED INTERESTS: INSIGHTS FROM A EURO 2024 PREDICTION GAME

Matej Černe, Simon Colnar, Tomaž Čater, Jure Andolšek, Dejan Uršič

Amidst the structured rigidity of modern work environments, where tangible outcomes often overshadow the subtle dynamics of human interaction, a seemingly trivial event—an office Euro 2024 prediction game—reveals weighty insights into the fabric of workplace relationships, and acts as an inspiration for this editorial. This game, more than just a playful diversion, serves as a prism through which we can view the essential roles of camaraderie, networks, connections, and friendship in professional settings. Such shared experiences not only foster a sense of belonging but also illuminate key aspects of career development and organizational behavior, for careers in academia and beyond.

The intelligent career framework articulated by Arthur and Rousseau (1996) underscores the importance of 'knowing whom'—a component that emphasizes building and nurturing professional networks. This element is particularly salient when considering the spontaneous interactions that arise during activities like a prediction game. Through these interactions, colleagues forge dynamic relationships that can strengthen the social fabric of an organization, enhancing both individual and collective capacities to navigate career landscapes and organizational challenges.

Drawing on social capital theory, we understand that networks of relationships are a form of valuable asset. These networks facilitate the flow of information, enhance coordination, and augment cooperation opportunities (Granovetter, 1973). The informal nature of a prediction game taps into these networks, activating what Granovetter describes as 'the strength of weak ties', where acquaintances provide access to resources and information beyond the reach of close-knit groups.

The complex interplay of these dynamic relationships is further explored through Bourdieu's concept of social capital, which posits that social interactions are not merely transactional but deeply integrative (Bourdieu, 1986). These interactions cultivate a collective identity and mutual commitment that enhance job satisfaction and organizational loyalty. Additionally, Coleman's exploration of social capital highlights the importance of trust and normative behaviors that emerge from these interactions, fostering a supportive community that enhances collaborative efforts and workplace efficiency (Coleman, 1988).

In reflecting on the Euro 2024 prediction game, it becomes evident that the outcomes extend far beyond simple entertainment. These activities catalyze the formation of dynamic and enduring social networks that underpin career development through strategic relationships, a crucial aspect of 'knowing whom' in Arthur's framework.

As organizations continue to evolve, recognizing and nurturing these informal interactions becomes vital. They enrich the workplace by providing a scaffold for robust, supportive relationships that contribute significantly to a resilient organizational culture. The challenge for both scholars and practitioners lies in fostering these environments without compromising their organic and spontaneous nature.

As we move forward, it is imperative for scholars and practitioners alike to recognize and foster these informal arenas of interaction. Not only do they enrich the social and emotional dimensions of the workplace, but they also contribute significantly to the scaffolding of a supportive and resilient organizational culture. The challenge lies in intentionally cultivating these interactions without stripping them of their spontaneity and genuine human connection.

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Dynamic Relationships Management Journal

THE EFFECT OF COLLECTIVISM COGNITIVE ORIENTATION ON CENTRALITY BIAS AND COUNTERPRODUCTIVE KNOWLEDGE BEHAVIOR: AN EXPERIMENTAL STUDY

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Abstract

This research investigates the causal relationship between centrality bias and counterproductive knowledge behavior. This research also identifies the moderating effect of inducing a collectivistic cognitive orientation on the relationship between centrality bias and counterproductive knowledge behavior. This research uses an experimental method with a 2x2 factorial design between subjects. Centrality bias was manipulated into two conditions: high vs. low. Meanwhile, the cognitive orientation of collectivist culture is categorized into two categories: horizontal vs. vertical. This research found that centrality bias encourages individuals to engage in greater counterproductive knowledge behavior. The cognitive orientation of a horizontal collectivist culture can minimize counterproductive knowledge behavior. This research found that the cognitive orientation of collectivist (horizontal) culture effectively filters the negative impact of centrality bias on counterproductive knowledge behavior. This study suggests a substantial impact of centrality bias on reluctance to exert effort and detrimental behavior. This research addresses the overlap between knowledge sharing and counterproductive knowledge behavior by referring to real-effort experimental tasks.

Keywords: *Centrality Bias, Counterproductive Knowledge Behavior, Collectivism, Culture*

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1 INTRODUCTION

The existence of a halal industry is a new paradigm in encouraging economic growth (Wilson et al., 2013; Hassan et al., 2021). One of the reasons for the success of industrial and organizational growth is human resource capabilities (Rohma et al., 2023). The increasingly massive development of the halal industry needs to be supported by knowledge-sharing behavior, which is one of the primary keys

to effectiveness and increased organizational performance (Argote et al., 2000; Vera-Muñoz et al., 2006; Silvi & Cuganesan, 2006; Quigley et al., 2007; Rohma & Anita, 2024). Knowledge-sharing behavior can encourage the formation of competitive advantage and the development of organizational strategy (Kim & Yun, 2015; Seerenko, 2019). Serenko (2019) and Seerenko & Bontis (2016) explain that many research developments have examined the driving factors and factors weakening knowledge-sharing tendencies. However, research developments tend to view that an increase or decrease in knowledge-sharing tendencies is directly proportional to counterproductive knowledge behavior or a desire not to share one's knowledge (Serenko & Bontis, 2016). This causes many research developments to only focus on knowledge-sharing behavior and ignore counterproductive knowledge behavior. Meanwhile, Serenko & Bontis (2016) found that increasing or decreasing knowledge sharing is not directly proportional to counterproductive knowledge behavior. Thus, efforts to understand the triggers and mitigates of counterproductive knowledge behavior cannot be ignored.

Mursita & Almilia (2020) succeeded in partially investigating that subjective incentive schemes can reduce counterproductive knowledge behavior. However, several previous studies have shown that subjective incentive schemes in the performance evaluation process often contain inaccuracies due to systematic measurement errors, indicating that performance assessments by evaluators are biased (Ahn et al., 2010). There are two types of systematic performance evaluation bias: centrality bias and generosity bias (Bol, 2011; Moers, 2005). Centrality bias tends to have a more considerable impact than leniency bias *on* reducing job achievement (Ahn et al., 2010; Berger et al., 2013; Bol, 2011). The presence of centrality bias eliminates team competition, increases cooperation (Kampkötter & Sliwka 2016), and encourages knowledge-sharing behavior (Cheng & Coyte 2014). However, Serenko & Bontis (2016) found that increasing or decreasing knowledge sharing is not directly proportional to counterproductive knowledge behavior. Apart from that, centrality bias can negatively influence the encouragement/incentives for employee performance, especially those whose performance exceeds the average (Bol 2011; Trapp & Trapp 2018). This indicates that individuals who know that their evaluation results will be compressed by the evaluator towards the average evaluation results will not be encouraged to put more effort into the future (Golman & Bhatia 2012). Thus, the impact of centrality bias on counterproductive knowledge behavior is still ambiguous and has the potential to cause overlapping perceptions. Thus, this research investigated by considering the possible impact of centrality bias on counterproductive knowledge behavior without ignoring the importance of preventive control efforts that can be carried out.

Individual cognitive orientation mainly explains individual behavior and actions (Xin et al., 2006). Hofstede (1980) explains that individual cognitive orientation is divided into individualism and collectivism. Mursita & Almilia (2020) found that cognitive orientation influences counterproductive knowledge behavior. However, Mursita & Almilia (2020) have not succeeded in showing the effectiveness of cognitive orientation as a moderating factor. The inability of cognitive orientation to become a moderating factor may occur due to the incompatibility of the manipulation given with the cultural conditions of the studied country. Indonesia has a collectivist orientation. Borges et al. (2019) explain that a high knowledge-sharing behavior occurs in Indonesia due to group-based cultural orientation. Thus, in Asian countries with a collectivist culture, further elaboration efforts are needed. No longer paying attention to the individualist-collectivist cognitive orientation. However, it is necessary to study the role of collectivism's cognitive orientation in depth, specifically divided into vertical and horizontal collectivism. Comprehensively, using the principle of cognitive orientation, this research investigates the effect of inducing a collectivistic cognitive orientation on the relationship between centrality bias and counterproductive knowledge behavior.

This research uses an experimental method with a 2x2 factorial design between subjects. Centrality bias was manipulated into two, namely presence and absence. Meanwhile, collectivism's cognitive orientation is categorized into vertical and horizontal. This research is vital for several reasons. First, Golman & Bhatia (2012) explained that cen-

trality bias has direct (straightforward) negative consequences for individual behavior. Therefore, the impact of centrality bias on counterproductive knowledge behavior tendencies needs to be monitored and improved. Second, exploring cognitive orientation needs to be studied comprehensively by expanding the study of individualism-collectivism because, over its development, mapping has been carried out by Hofstede (1980). Thus, elaboration efforts precisely match regional orientation; in this case, Indonesia is collectivist, so it is necessary to pay attention to the role of vertical and horizontal collectivism. This research is essential to conduct a more comprehensive study of management control by focusing on the determinants and preventive control efforts in one test model.

This research contributes to several streams. Theoretically, the research contributes to the field of management control by comprehensively examining it no longer in terms of knowledge-sharing behavior but in terms of counterproductive knowledge behavior. This research shows the trigger factors and mitigation efforts for counterproductive knowledge behavior. Empirically, this research addresses the failure of previous research in examining moderating effects by expanding the category of manipulation of collectivist cognitive orientation to vertical-horizontal, which has not received much attention so far. Experimental research methods can induce stressors and measure individual cognitive and personality traits directly (real-time). This complements previous research methods' weaknesses that trigger cognitive confirmation bias (Ayyagari *et al.,* 2011; Sellberg & Susi, 2014). Practically, this research can be a recommendation for organizations in determining evaluation schemes for organizational members to minimize the impact of centrality bias, as well as considering collectivism-type elaboration efforts that are quite effective in optimizing employee performance and productivity by minimizing counterproductive knowledge behavior. Comprehensively, this article is written in several parts, including the second part, literature review, and hypothesis development. The third part is research methods. The fourth part is the research results and discussion. The final part is the conclusion, including implications, limitations, and suggestions.

2 LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1 Centrality Bias

Centrality bias is a condition where there is variation in performance evaluation, which tends to be smaller than expected from the performance evaluation system (Kampkötter & Sliwka 2016). Centrality bias causes evaluators to fail to differentiate performance levels between employees (Bol 2011; Moers 2005), as well as causing disproportionate pay-to-performance ratios due to compression and is achieved by downplaying the value of above-average employees and exaggerating the value of below-average employees (Bol 2011). Evaluators use discretion in evaluating performance on one task to adjust for perceived deficiencies in evaluating performance on another task (Bol & Smith 2011). Centrality bias impacts the tendency for knowledge-sharing behavior (Cheng & Coyte 2014). However, it should be noted that the literature has succeeded in showing that the effects of increasing and decreasing knowledge sharing are not directly proportional to increasing or decreasing counterproductive knowledge behavior. Golman & Bhatia (2012) explained that individuals aware of centrality bias with evaluation results being compressed towards average results will tend to behave with decreasing work patterns.

2.2 Individualism-collectivism and cognitive orientation

Individual cognitive orientation can be categorized into individualism and collectivism (Hofstede, 1980). The theory of individualism-collectivism explains the existence of two patterns of individual behavior in responding to specific interests, namely individualism and collectivism (Chow et al., 000; Triandis & Gelfand, 1998; Wagner, 1995). Individuals with an individualistic cognitive orientation tend to prioritize personal interests with a sense of self that tends to be autonomous, emotional independence, individual initiative, the right to privacy, and even financial security (Triandis & Gelfand, 1998). Meanwhile, individuals with a collectivist orientation tend to have cognitive behavior that emphasizes collective identity, emotional dependence, group solidarity, sharing, rights and obligations, shared needs, and group deci-

sions (Triandis & Gelfand, 1998). Bochner & Hesketh (1994) emphasized that individualism/collectivism refers to the relationship between individuals and collectivities within social groups. Collectivist cognitive orientation gives individuals more non-formal contact with their environment (Naranjo-Gil et al., 2012). The existence of non-formal contracts makes it possible for collectivism's cognitive orientation to filter the direct impact (straightforward) of centrality bias by considering the cognitive orientation of the party being evaluated. Based on the individual cognitive orientation perspective, collectivism in this research is grouped into two types of collectivism orientation: vertical and horizontal. Triandis et al. (1998) explained that the cognitive orientation of collectivism is divided into horizontal and vertical collectivism. Vertical and horizontal differences in collectivism and individualism are based on self-concept, fiscal orientation, values, and political system (Triandis, 1995). Triandis & Gelfand (1998) explained that vertical and horizontal are used to show differences in emphasis on cognitive orientation. Horizontal places an emphasis on equality, while vertical places an emphasis on a more hierarchical structure (Triandis & Gelfand, 1998).

2.3 Counterproductive Knowledge Behavior

Serenko & Bontis (2016) explain the main difference between productive knowledge behavior (knowledge sharing) and counterproductive knowledge behavior, referring to the valence and motivation sections. Knowledge-sharing behavior focuses more on responsibility, accountability and obligation to the organization, willingness to help, and friendliness between individuals (Mursita & Almilia, 2020). Meanwhile, counterproductive knowledge behavior is the opposite, which can be in the form of disengagement from sharing knowledge (Ford et al., 2015), partial knowledge sharing (Ford & Staples, 2010), hoarding knowledge (Hislop, 2003), counter-knowledge sharing (Martelo-Landroguez et al., 2019).

2.4 Centrality bias toward counterproductive knowledge behavior

Centrality bias directly impacts work behavior by eliminating team competition and encouraging increased cooperation (Kampkötter & Sliwka 2016) and knowledge-sharing behavior (Cheng & Coyte 2014). However, increasing or decreasing knowledge sharing is not linearly proportional to counterproductive knowledge behavior (Serenko & Bontis, 2016). Centrality bias harms individual performance (Trapp & Trapp, 2018; Bol et al., 2016). Centrality bias can reduce employee performance because centrality bias makes the pay-to-performance ratio disproportionate (Bol 2011). Moreover, Moers (2005) explains that centrality bias reduces performance and individual work motivation in the future. Decreased individual work motivation can be done by hiding knowledge and counterproductive knowledge behavior (Ford et al., 2015). Thus, individuals with high centrality bias tend to feel that the evaluator gives scores that tend to be the same without paying attention to the good or bad performance that has been shown. So, individuals tend to be reluctant to increase work effort and reduce work motivation, represented through counterproductive knowledge behavior. Thus, hypothesis 1 proposed is:

H1: The tendency for counterproductive knowledge behavior will tend to be higher under conditions of high centrality bias than under conditions with low centrality bias.

2.5 Collectivist cognitive orientation toward counterproductive knowledge behavior

Following the assumptions of the theory of collectivism-individualism, individuals with a high level of collectivism will tend to mingle with many parties without being selfish in achieving individual performance, not storing knowledge for their interests, and focusing on group orientation. Mursita & Almilia (2020) show that the cognitive orientation of individualism encourages greater counterproductive knowledge behavior than collectivism. Collectivist cognitive orientation gives individuals more non-formal contact with their environment (Naranjo-Gil et al., 2012). Triandis (1995) explains that horizontal collectivism leads more to an equality orientation, while vertical tends to refer to hierarchy (Triandis & Gelfand, 1998). Emphasizing equality encourages individuals to share their knowledge with the environment and enter into greater informal contracts. Meanwhile, the hierarchical emphasis still pays at-

tention to the strata of knowledge levels in that individuals at certain levels tend to have more non-formal contract power than at other levels. This can trigger a low desire to share knowledge because of the hierarchy of levels in the work environment. Thus, hypothesis 2 proposed is:

H2: The tendency for counterproductive knowledge behavior will tend to be higher in conditions of vertical collectivism cognitive orientation than in horizontal collectivism cognitive orientation

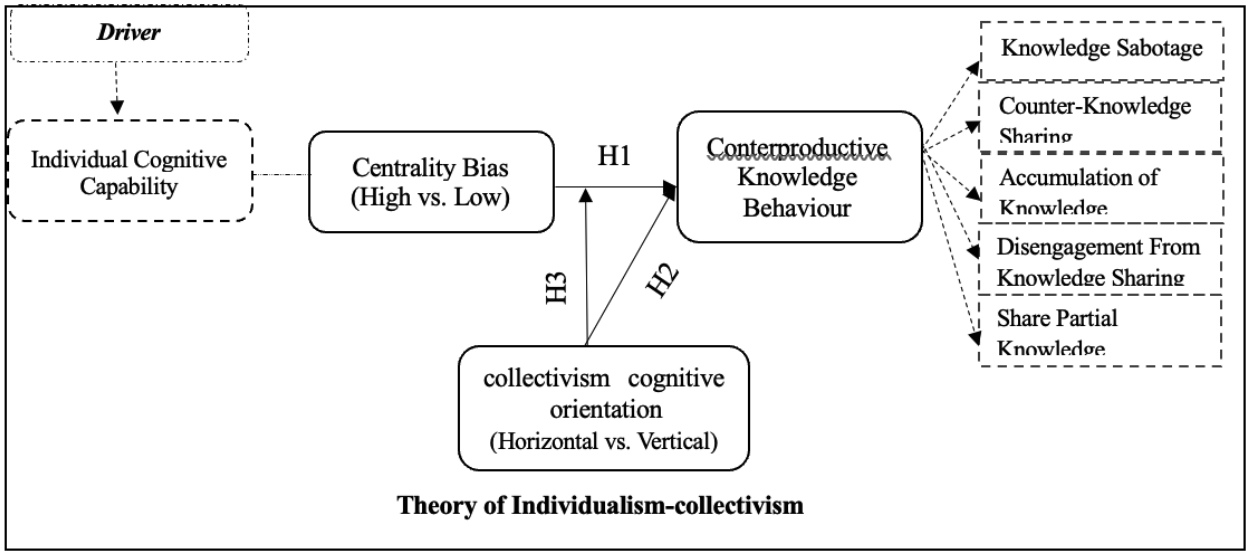
2.6 The interaction of centrality bias and collectivism cognitive orientation on counterproductive behavior

Cognitive orientation has a significant role in encouraging the effectiveness of control mechanisms in organizations (Sanchez-Exposito & Naranjo-Gil, 2017). Mursita & Almilia (2020) show that collectivist cognitive orientation produces less counterproductive knowledge behavior than individualism. Naranjo-Gil et al. (2012) explained that collectivist cognitive orientation gives individuals more non-formal contact with their environment. Thus, based on the theory of individualism-collectivism, a high level of individual collectivism can encourage individuals to enter into non-formal contracts with the environment through efforts to prioritize group interests, one of which is sharing knowledge. It is possible that a collectivist cognitive orientation can be used as a filter for actions that have the potential to cause counterproductive knowledge behavior, such as centrality bias. The theory of individualism-collectivism, which emphasizes differences in motivational patterns of behavior from cognitive orientation, with the horizontal collectivism pattern which prioritizes equality in all parts, encourages the tendency for counterproductive knowledge behavior to be lower than the vertical collectivism pattern, which still takes into account the existence of hierarchical levels in a social environment. Thus, counterproductive knowledge behavior in conditions of high centrality bias will tend to be lower in conditions of horizontal collectivism than vertical collectivism. Therefore, the hypothesis 3 proposed in this research is:

H3: Collectivism cognitive orientation moderates the influence of centrality bias on counterproductive knowledge behavior

Figure 1 provides information about this research model. Individual cognitive capability is the main driving factor that triggers organizational centrality bias. Centrality bias can reduce employee performance because centrality bias makes the pay-

Figure 1: Research Model



to-performance ratio disproportionate. Literature shows no effect of the absence of centrality bias on organizations. Thus, in research, centrality bias is manipulated into high and low, potentially impacting counterproductive behavior significantly. Previous research shows that the cognitive orientation of individualism encourages more remarkable counterproductive knowledge behavior than collectivism. Horizontal collectivism leads to an equality orientation, while vertical refers to hierarchy. Based on the assumptions of the theory of individualism-collectivism, which emphasizes differences in motivational patterns of behavior from cognitive orientation, with the horizontal collectivism pattern prioritizing equality in all parts, encouraging the tendency for counterproductive knowledge behavior to be lower than the vertical collectivism pattern, which still takes into account the existence of hierarchical levels in a social environment. Thus, based on the theory of individualism-collectivism, collectivism's cognitive orientation may moderate the influence of centrality bias on counterproductive knowledge behavior. Counterproductive knowledge behavior in organizations is a broad phenomenon that includes Knowledge Sabotage behavior, Counter-Knowledge Sharing, Accumulation of Knowledge, Disengagement From Knowledge Sharing, and Share Partial Knowledge.

3 RESEARCH METHODS

3.1 Research Design

This research uses a laboratory experiment with a 2x2 between-subjects factorial design. The process of developing instruments and assigning cases is carried out by involving halal industry players. The core instrument created is tested on students as participants to avoid social desirability bias if involving genuine practitioners. Centrality bias was manipulated into 2, namely high and low. Collectivism was grouped into two, namely horizontal and vertical. Participants are positioned as employees evaluated by evaluators and given work situations and assignments related to centrality bias and task difficulty level. Based on this case, participants were asked to determine their unwillingness to share information requested by their colleagues, and their level of collectivism was measured. The experimental design in more detail is presented in Table 1 below:

3.2 Experimental Task and Manipulation

The manipulation in this study for the centrality bias variable refers to Trapp & Trapp 2018 with modifications adapted to the research context. The experimental assignment in this study refers to Haesebrouck et al. (2017) with several modifications that placed participants in positions managing financial accounts in one of the halal industries. This trial program will display information regarding the new information system adopted by the company. Each participant is asked to prepare a chart of accounts in the Financial Report and classify unstructured accounts into several main account classifications, namely assets, liabilities, equity, expenses, and income.

The task of respondents is to concentrate individually to complete their work. Participants were given information that participants had received incentives/bonuses equivalent to those they were entitled to based on performance, and other participants were manipulated and not given incentives/bonuses commensurate with their performance. As suggested by Tams (2011), this method is the most appropriate for experimental tasks related to performance and technostress compared to anagram or jumper assignment. Next, participants will be given information about re-

Table 1: Experimental Design

Variables/Manipulation		**Collectivism Cognitive Orientation**	
		Horizontal	Vertical
Centrality Bias	Tall	Group 1	Group 2
	Low	Group 3	Group 4

quests from colleagues to share their knowledge. Participants will be asked to determine how much they intend not to share their knowledge.

The experiment in this research consisted of several stages, as presented in Figure 2. The first stage was filling out informed consent, which stated that participants were ready to participate until the experiment ended. The second stage is the randomization of the distribution of experimental instruments. The randomization process is carried out with the help of permutations from Microsoft Excel, and participants will be given instruments according to the results of the permutation randomization. Participants work on the instrument in the third stage according to the manipulation received. Participants completed cognitive orientation measures in the fourth stage and answered manipulation checks. In the fifth stage, participants fill in demographic information. Completeness of the demographics section is crucial because demographic information will later be used to determine whether there is an experimental error. The sixth stage is data collection.

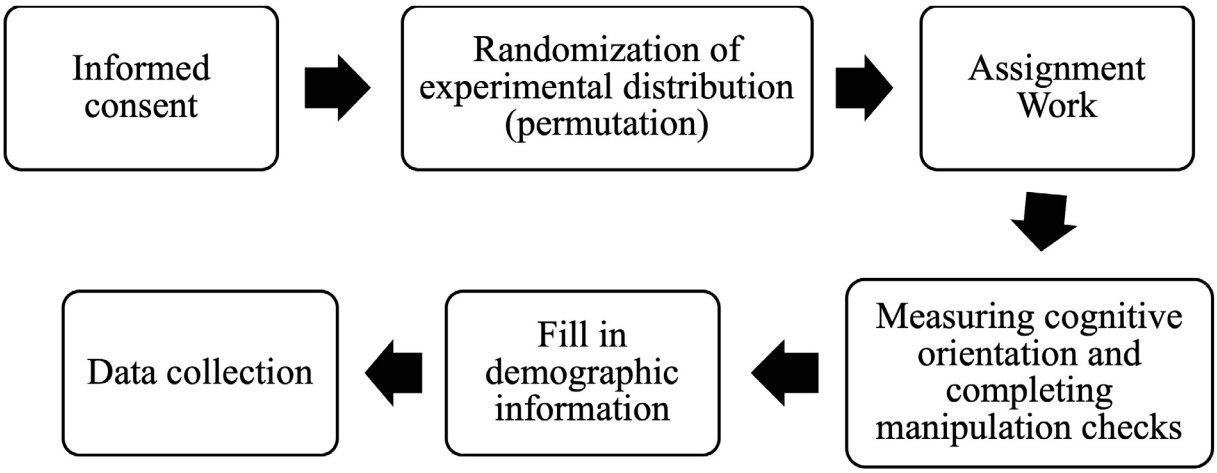
3.3 Research variables

The independent variable in this research is centrality bias. In this condition, performance evaluations above the average are evaluated and given lower incentives, while performance below the average is evaluated and given higher incentives. Centrality bias was manipulated into two: the presence and absence of centrality bias. In conditions with centrality bias, participants have received incentives/bonuses equivalent to those they are entitled to based on their performance. Meanwhile, conditions with no centrality bias are characterized by not being given incentives/bonuses that are appropriate to their performance.

The moderating variable in this research is collectivism cognitive orientation, namely, the individual's cognitive condition in carrying out activities tends to focus more on the group (Triandis and Gelfand, 1998). Horizontal Collectivism is a condition of the cognitive orientation of individuals with strong self-identification with groups without distinguishing between status levels. Each individual is interdependent by prioritizing equality and a family-oriented group structure. Meanwhile, vertical collectivism is an individual's cognitive orientation that prioritizes group interests above personal interests by maintaining a shared hierarchy in the community, levels of authority, a sense of interdependence, and low levels of freedom (Singelis et al., 1995). The instrument in this research refers to Singelis et al. (1995). Participants were grouped into horizontal and vertical conditions based on higher mean scores on each measure.

The dependent variable in this research is counterproductive knowledge behavior, which is the behavior of individuals who deliberately do not want to share information with workgroup colleagues even though there is a request from that colleague (Serenko and

Figure 2: Experimental Procedure



Bontis, 2016). This variable is measured by providing an accumulative score from a given scale regarding the magnitude of the tendency to behave in a way that does not want to share one's knowledge.

3.4 Participants

This research involves students as stressor subjects from preparing financial report accounts in the halal industry. The use of students as research subjects is adjusted to the research design and has been explained by Kunz (2015) and Trapp & Trapp (2018) that students may not have an idea about the design of performance appraisal systems that are generally used in the world of work. Hence, they tend to produce results free from social desirability bias. Shadish *et al.* (2002), Rohma (2023a), and Nahartyo (2013) suggest researchers consider the requirements of the experiment to determine the appropriate subject level. Even so, students do not have enough experience like practitioners. That is why, to minimize social desirability bias, the students used as participants are students with criteria for fulfilling specific course requirements, namely accounting information systems, management accounting, and management control systems who understand the concept of accounting information systems, risks, and controls from various cases studied conceptually. in the classroom. So that social desirability bias can be minimized. In addition, Mortensen *et al*. (2012) and Rohma (2022) also suggest that students with advanced accounting skills can become researchers and practitioners in social research.

4 RESULTS

This research involved 195 participants. However, 10 participants did not provide complete information at several experiment stages, and 13 failed to answer the manipulation check questions. Thus, the data used in the further data processing process was 172 data. Before testing the hypothesis, descriptive statistical analysis was carried out. Table 2 shows that the lowest average level of counterproductive behavior is in the low centrality bias condition, namely 2.66.

The results of descriptive analysis based on differences in the treatment of each variable show that counterproductive behavior tends to be greater in conditions of high centrality bias with a value of 5.27 than low centrality bias, namely 2.66. Meanwhile, descriptively in the collectivist cognitive orientation, the tendency for counterproductive behavior tends to be more significant in the vertical condition, namely 4.50, than in the horizontal condition, 3.61. The average value in Table 2 illustrates the data pattern under the proposed hypothesis. However, further hypothesis testing is needed to see the significance of the differences in each treatment.

Testing the validity and reliability of the instrument is carried out before hypothesis testing is carried out to provide initial confidence in the instrument's validity. The test results for all question items show that the overall r-count value is greater than the r-table for all question items, so the proposed instrument is valid. In addition, reliability test-

Table 2: Descriptive Statistics

Centrality Bias	Collectivism Cognitive Orientation	Mean	Std. Deviation
High	Vertical	5.76	1,445
	Horizontal	4.70	2,197
	Total	5.27	1,899
Low	Vertical	2.70	1,102
	Horizontal	2.60	1,482
	Total	2.66	1,273
Total	Vertical	4.05	1,981
	Horizontal	3.61	2,128
	Total	3.85	2,504

ing was carried out using Cronbach's Alpha. The results of the analysis show a p-value <0.745, which indicates there is no reliability problem. Thus, there is sufficient initial confidence that the instrument is valid and reliable to continue in hypothesis testing.

This study predicts and finds that the tendency for counterproductive knowledge behavior will tend to be higher in conditions of high centrality bias than in conditions of low centrality bias with p<0.000. The marginal value in Table 4 is higher in the high centrality bias condition of 2.649 than in the low centrality bias condition of 5.232. Thus, H1 is supported. This research predicts and finds that the tendency for counterproductive knowledge behavior will be higher in vertical collectivism conditions than in horizontal collectivism conditions, with p<0.017, and the average marginal value in vertical collectivism conditions is 4.230 rather than 5.762. Thus, H2 is supported. This research predicts and finds that collectivism moderates the effect of centrality bias on counterproductive behavior with p<0.047. Thus, H3 is supported.

5 DISCUSSION AND CONCLUSION

5.1 Discussion

The first research hypothesis predicts and finds that individuals with high centrality bias tend to behave with counterproductive knowledge. These results are consistent with the findings of Mursita & Nahartyo (2022) that centrality bias significantly impacts the reluctance to exert performance effort. In

Table 3: Hypothesis Testing

	Df	Mean square	F	Sig
Correlated models	3	104.416	42,982	0,000
Intercept	1	2623,565	1079.97	0,000
Centrality Bias	1	281,852	116,023	0,000*
Collectivism	1	14,143	5,822	0.017*
Centrality Bias* Collectivism	1	9,753	4,015	0.047**
Error	157	2,429		

*Notes. Adj R-square = 0.197, Note: *Sig at level 1%; **Sign at level 5%.*

Table 4: Marginal Mean for Each Condition

Centrality Bias		**Mean**	**Std. Error**	**95% Confidence Interval**	
				Lower Bound	**Upper Bound**
High		5,232	0.176	4,885	5,579
Low		2,649	0.163	2,327	2,971
Collectivism					
Vertical		4,230	0.161	3,912	4,548
Horizontal		3,651	0.178	3,300	4,002
Centrality Bias	*** Religiosity**				
High	Vertical	5,762	0.214	5,287	6,237
	Horizontal	4,703	0.246	4,197	5,209
Low	Vertical	2,698	0.240	2,275	3,121
	Horizontal	2,600	0.256	2,113	3,087

other words, when individuals feel that their performance is being evaluated unfairly due to centrality bias, they will be less motivated to exert effort at work. Therefore, the existence of centrality bias conditions causes injustice in the workplace. Cao (2022) found evidence that injustice causes individuals to hoard knowledge because they consider their contributions not commensurate with the rewards they receive. Research developments have shown that centrality bias can influence disengagement from knowledge sharing. This condition refers to evaluations' tendency to equalize individuals with high and low performance. This can cause a breakdown in morale, motivation, and performance, as employees who consistently produce quality work on average receive the same ratings as those who exceed.

Employees who feel marginalized in the workplace due to leader bias tendencies are more likely to engage in knowledge-hiding behavior, hindering organizational innovation and employee knowledge sharing. The existence of centrality bias conditions can lead to dissatisfaction with the organization, triggering the behavior of counterproductive knowledge, such as counter-knowledge sharing. The dissatisfaction referred to is a biased condition that evens out employees with high and low performance. Perotti et al. (2023) and Yean et al. (2022) show that employees dissatisfied with their jobs may engage in harmful behaviors that hinder organizational knowledge flow, such as disengagement from knowledge sharing and counter-knowledge sharing. Conditions of high centrality bias cause individuals to feel dissatisfied and unfair due to the equal distribution of performance evaluations. These conditions can influence individuals to carry out counterproductive knowledge behavior, such as knowledge sabotage, counter-knowledge sharing, knowledge hoarding, disengagement from knowledge sharing, and partial knowledge sharing.

The second research hypothesis predicts and shows that counterproductive knowledge behavior can be minimized with horizontal collectivism. Several studies have found a positive relationship between collectivist cognitive orientation and knowledge sharing. In line with previous research, this research shows that collectivist conditions harm the tendency for counterproductive knowledge behavior. These results align with Agbejule et al. (2021), who found evidence that horizontal trust has a more significant influence than vertical trust. Trust in individuals who are equal to them creates a more comfortable atmosphere in team learning, thereby enabling the knowledge-sharing process.

In line with the perspective of the theory of collectivism-individualism, individuals in collectivist conditions will be willing to work as a team so that they have close relationships with other group members and always prioritize common goals. Nadeem et al. (2020) show that a shared goal is essential in minimizing the behavioral tendency to hide knowledge. Individuals who work together to achieve a common goal tend to share their knowledge and expertise with others rather than hoard knowledge for themselves. Hernaus et al. (2019) also show that task interdependence can help reduce the tendency to hide knowledge. Interdependent conditions can reduce competitive behavior between individuals and allow for knowledge sharing.

Counterproductive knowledge behavior tends to be higher in vertical and horizontal collectivism conditions. This aligns with Nghia & Dong (2022), who state that horizontal collectivism tends to transfer more knowledge because it emphasizes interdependence, equality, and cooperation, which can encourage individuals to share their knowledge with others. Meanwhile, vertical collectivism emphasizes hierarchy and believes that each individual is at a different level. The existence of hierarchical emphasis can create gaps between individuals, hindering knowledge-sharing. Differences in level give a feeling of discomfort and reluctance to share knowledge, whereas horizontal collectivism tends to feel more accessible to share knowledge without considering hierarchy.

The result of the third research hypothesis also found that collectivist cognitive orientation can be a filter to reduce the negative impact of centrality bias on counterproductive knowledge behavior. These findings align with Ma et al. (2022a) and Ma et al. (2022b) that collectivism can reduce the negative impact of factors that trigger counterproductive knowledge behavior tendencies. Individuals with high collectivism tend to prioritize the group's interests to avoid behavior detrimental to the group's interests, such as counterproductive knowledge behavior. Based on the perspective of the the-

ory of collectivism-individualism, horizontal collectivism emphasizes social relations based on equality so that counterproductive knowledge behavior is lower than vertical collectivism, which emphasizes differences in hierarchical levels.

Jiang et al. (2023) found that cooperative communication can create equal interpersonal relationships, reducing the behavior of hiding knowledge. Equal social relations foster a harmonious communication atmosphere, providing comfort in the knowledge exchange process. Iqbal et al. (2022) found that injustice felt by individuals can encourage individuals to carry out knowledge-hiding behavior. Injustice can take the form of unfair performance evaluations such as centrality bias. The existence of centrality bias makes individuals feel maltreated, so they are reluctant to exert effort and tend to behave detrimentally. Conditions of horizontal collectivism that emphasize equality, interdependence, and harmonious social relations can filter the negative impact of centrality bias by creating an environment conducive to sharing knowledge.

5.2 Implications

This research has implications in several areas. First, this research adds to previous studies by considering the overlap between knowledge sharing and counterproductive behavior with determinant factors and mitigating efforts in one test model. Second, this research can be a recommendation for organizations in determining evaluation schemes for organizational members to minimize the impact of centrality bias.

5.3 Conclusion

Research shows that a high centrality bias can be a trigger that can potentially cause greater counterproductive behavior than a low centrality bias. However, the presence of a collectivist cognitive orientation can be a filter for the negative impact of centrality bias on counterproductive behavior. This research is not free from all limitations. First, the limited literature regarding counterproductive knowledge behavior means that the literature base for this research is still limited. Second, this research ignores the individual's level of expertise in performing the task, which may influence their knowledge behavior. Third, some participants withdrew during the experimental process, causing the experiment to be carried out at several stages repeatedly, which had the potential to cause differences in the perceived conditions. Fourth, this research was conducted on a web basis, so network constraints caused the information not to be stored ideally. Future research is expected to consider the characteristics of centrality bias more comprehensively. Reserve participants are highly recommended to minimize participant withdrawal during the experiment.

EXTENDED SUMMARY/IZVLEČEK

Ta študija raziskuje vzročno zvezo med pristranskostjo centralnosti in kontraproduktivnim vedenjem znanja. Raziskava prav tako identificira moderacijski učinek kolektivistične kognitivne usmerjenosti na razmerje med pristranskostjo centralnosti in kontraproduktivnim vedenjem v zvezi z znanjem. Za to uporablja eksperimentalno metodo z 2x2 primerjalno analizo med subjekti. Pristranskost centralnosti je bila manipulirana v dveh pogojih: visoka proti nizki. Medtem je bila kognitivna usmerjenost kolektivistične kulture razvrščena v dve kategoriji: horizontalna proti vertikalni. Ta raziskava je pokazala, da pristranskost centralnosti spodbuja posameznike k večjemu kontraproduktivnemu vedenju znanja. Nadalje, kognitivna naravnanost horizontalne kolektivistične kulture lahko minimizira kontraproduktivno vedenje znanja. Prav tako je ta raziskava pokazala, da kognitivna naravnanost kolektivistične (horizontalne) kulture učinkovito moderira negativen vpliv pristranskosti centralnosti na kontraproduktivno vedenje znanja. Študija nakazuje pomemben vpliv pristranskosti centralnosti na nepripravljenost vlaganja truda in škodljivo vedenje. Raziskava z uporabo eksperimentalnih nalog z dejanskim trudom obravnava prekrivanje med deljenjem znanja in kontraproduktivnim vedenjem, povezanim z znanjem.

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GOVERNMENT POLICY, IT INFRASTRUCTURE, BUSINESS MODEL INNOVATION, DIGITAL TRANSFORMATION, AND DYNAMIC CAPABILITY: CATALYSTS FOR FIRM PERFORMANCE ENHANCEMENT

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Abstract

Small and medium-sized firms (SMEs) encounter substantial obstacles in today's rapidly changing economic landscape, primarily due to their restricted resources and management capacities. This study utilises the resource-based view theory to investigate how government policies might assist SMEs in utilising their information technology (IT) infrastructure for digital transformation and enhancing firm performance. In the face of emerging technology and increased competition worldwide, SMEs must give utmost importance to innovation and the ability to adapt to achieve long-term success. The study, utilising data from 658 SME participants in Vietnam, highlights the significant impact of government policies on shaping IT infrastructure and emphasises the significance of innovation in bolstering dynamic capacities and overall business success. These findings provide valuable insights for managers and policymakers, indicating prospective areas for future research that have consequences for SMEs.

Keywords: *Firm Performance, SMEs, Government Policy, Digital Transformation, Business Model Innovation, Dynamic Capability*

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1 INTRODUCTION

Organisations are continually challenged to adapt and thrive in a dynamic environment marked by unprecedented technological advancements and regulatory changes. Indeed, disruptive technologies of the fourth industrial revolution have given rise to several opportunities and obstacles for surviving and competing in the highly dynamic market. The digital era offers a favourable environment for businesses to operate with the aid of technological expertise. With the emergence of various digital solutions on the market, the potential for digital transformation has never been more significant (Bharadwaj et al., 2013; Li, 2020). New technologies, such as artificial intelligence, machine learning, big data and cognitive computing, have the potential to fundamentally transform the corporate landscape (Yang et al., 2017). The growing interest in digital transformation among scholars and practitioners has been highlighted by Obschonka & Audretsch (2020). Furthermore, Vial (2019) has emphasised the strategic relevance and process-centred character of digital transformation, which has been consistently discussed in diverse academic literature and practitioner discussions. Fernandez-Vidal et al. (2022) reported that most Chief Executive Officers now consider digital transformation a strategic and top priority for businesses.

Most executives and managers from various sectors believed that completing digital transformation would be necessary for their businesses (Nadkarni & Prügl, 2021). Although numerous organisations embrace technology-driven strategies, not all get the same advantages, hence overlooking significant chances (Li et al., 2022). Besides, Zaki (2019) highlights the capacity of digital transformation to generate novel business models, optimise processes, and elevate consumer experiences. Similarly, Sia et al. (2021) perceive this period as a catalyst for organisations to reassess the incorporation of information technology (IT) strategy with business strategy. The emergence of advanced IT and the resurgence of pre-internet technologies have reinvigorated its significance within the realm of organisational transformation (Nadkarni & Prügl, 2021; Pelletier & Raymond, 2023). The increased velocity of change brought about by digital technologies has resulted in higher environmental instability, complexity, and uncertainty (Gupta & Bose, 2022). As a result, it affects business processes, operational routines, and organisational capacities. The increasing research interest in digital transformation in various contexts is a result of the digital transformation phenomenon (Malodia et al., 2023). Despite the growing interest, there are calls for more empirical and conceptual studies into how firms digitally transform (Warner & Wäger, 2019).

SMEs have recently been undergoing a significant transformation in their operations. To remain competitive and sustainable, they must adapt to the changes brought about by digitalisation (Tian et al., 2023). Nevertheless, they fall behind more prominent companies due to their lack of appropriate training and resources for investment in digitalisation (Eller et al., 2020; Hakaki & Nikabadi, 2022). Furthermore, having limited financial resources, SMEs frequently face restrictions on their ability to innovate, which limits their ability to succeed (Radzi et al., 2017). Digital transformation also revolutionises communications, retail, healthcare, medicine, agriculture, and manufacturing. Some companies are ahead, but most are falling behind (Mugge et al., 2020). Importantly, government policies are believed to foster IT infrastructure development and digital transformation within SMEs through financial incentives, regulatory support, and tax benefits (Mai et al., 2023). Prior studies have highlighted the significant role of government assistance in facilitating the growth and enhanced digital productivity of SMEs (Garzoni et al., 2020; Indrawati, 2020).

Dynamic capabilities often result from an organisation's growth, adoption of new business models, consistency, and adaption efficiency (Hareebin et al., 2018). Likewise, Dynamic capabilities are the ability to perceive, seize, and restructure internal and external resources to adapt to changing business conditions (Li et al., 2022). Moreover, strong dynamic capabilities enable enterprises, particularly their top management, to effectively orchestrate resources and competencies, anticipate market and technological changes, realign assets accordingly, and strategically collaborate with other enterprises for business ecosystem co-creation (Teece, 2020). Similarly, According to Martins (2023), dynamic capabilities (sensing, seizing, and transforming) have a notably positive impact on

SME performance, with digitalisation significantly enhancing the relationship between these capabilities and SME performance.

Businesses use an ecosystem of related businesses to create new products, provide services to clients, and develop innovative capabilities (Lee et al., 2017). To encourage innovative behaviour, the organisation relies on resources obtained from its external surroundings (Sahrom et al., 2016). SME innovation requires strategic innovation and business strategies that encourage creativity, risk-taking, and innovation. This requires a solid basis, cooperative networks, and a robust institutional structure to support their efforts (Halim et al., 2016).

While previous research has traditionally focused on the implementation of digital technologies in large corporations (Cenamor et al., 2019) or in innovative businesses, digital startups, and high-tech giants, studies that examine SMEs operating in traditional industries are scarce (Matarazzo et al., 2021). Nevertheless, SMEs are recognised as innovative and significant contributors to economic growth in many countries, such as Vietnam, where most local companies are small and medium-sized (Vo et al., 2022). Moreover, a more in-depth examination is required to understand how SMEs can utilise digitalisation to produce greater strategic values. There is a lack of comprehensive studies considering digital transformation and its causes and effects (Cenamor et al., 2019). Consequently, this study aims to bridge a research gap by addressing two inquiries:

RQ1: How do governmental policies contribute to advancing the evolution of business models and IT infrastructure within SMEs?

RQ2: How does the process of digital transformation and the introduction of innovative business models contribute to the development of a company's dynamic abilities and overall performance?

The research contributes to the existing literature by presenting a resource-based framework that scrutinises the interconnections and mediating mechanisms among IT infrastructure, business model innovation, digital transformation, and dynamic capabilities. This study strengthens the empirical evidence by showing that contemporary government policies, internal digital changes, and innovation affect firm performance in Vietnamese SMEs. These findings can serve as a valuable basis for shaping future regulatory and strategic decisions for governments, organisations, and enterprises.

2 THEORETICAL FRAMEWORK

2.1 The resource-based view theory

The Resource-Based View (RBV) describes a corporation as a collection of resources and capabilities that can be used to gain a competitive advantage (Varadarajan, 2023; Zahra, 2021). The primary tenet of this theory is that more fantastic firm performance is linked to firm-specific, scarce, and difficult-to-imitate resources (Barney, 1986; Bharadwaj, 2000; Varadarajan, 2023). Furthermore, company capabilities are a company's ability to utilise current resources to undertake tasks or activities (Gavronski et al., 2011; Salvato & Vassolo, 2018). Consequently, organisations may gain a competitive advantage by creating or acquiring organisational capabilities that are unique, non-substitutable, and inimitable (Harsch & Festing, 2020). Similarly, Varadarajan (2020) and Wu (2010) demonstrated that a company can use its capabilities to grow its resources to gain a competitive advantage and enhance its performance.

The RBV provides valuable insight into SME digital transformation. Each digital transformation stage has its resources, structure, strategies, measurements, and objectives. Specifically, digital transformation is multidisciplinary in nature, encompassing changes in strategy, management, structure, information technology, marketing, and supply chain (Verhoef et al., 2021). Additionally, it is an essentially strategic process (Vial, 2019; Warner & Wäger, 2019). Hence, it can be inferred that the digital transformation process involves a wide range of advanced resources and capabilities (Hanelt et al., 2021; Warner & Wäger, 2019), and investment in digital transformation generates new strategies and business models that facilitate the development of capabilities and resources to build competitive advantage (Gil-Gomez et al., 2020; Tekic & Koroteev, 2019), ultimately enhancing firm performance (Nadkarni & Prügl, 2021).

Despite several studies showing these resources' relevance to firm performance, the theory still needs to effectively explain the gap between firm performance and how these resources are transformed into capabilities (Kristoffersen et al., 2021).

2.2 Government policies

Government policies are pivotal in promoting IT infrastructure and digital transformation in SMEs (Dutta et al., 2020; Garzoni et al., 2020). Federal, state, and local governments extend funding, regulations, and incentives to qualifying SMEs and industries (Mai et al., 2023). These policies play a role in fostering business growth, enhancing resilience in the face of economic uncertainties, and driving economic expansion. They offer financial incentives, regulatory support, and tax benefits to improve technology accessibility and provide funded educational programs and training initiatives to boost SMEs' digital skills (Chege et al., 2020). Additionally, public-private partnerships provide guidance and support, ensuring SMEs' competitiveness in the evolving economic landscape, underscoring government policies' critical role in driving digitisation among these enterprises (Mpofu, 2023). Previous research regarding government support has proved how it can lead to numerous positive outcomes at the company level, including performance, globalisation, innovation, entrepreneurial orientation, and capability building (Faria et al., 2023). For instance, whereas the German government strongly encourages technological progress, notably by supporting the digitalisation of SMEs (Radicic & Petković, 2023), the Vietnamese government favouring state-owned enterprises (SOEs) tends to squeeze out the potential involvement of SMEs (Walsh et al., 2023). Indeed, government policy in Vietnam has shown a preference for both state-owned and foreign-owned enterprises over domestic SMEs (Walsh et al., 2023).

2.3 Firm performance

The RBV posits that firms achieve a competitive edge by acquiring tangible and intangible organisational assets that possess characteristics of value, rarity, inimitability, and non-substitutability (Barney, 1991). Previous studies have provided evidence of these resources' significance in determining firm performance (Kristoffersen et al., 2021). Overall, firm performance encompasses the overall proficiency and effectiveness of a company in accomplishing its goals, typically evaluated through a range of financial and non-financial metrics, including profitability, market share, productivity, innovation, customer satisfaction, and employee engagement. The statement refers to the firm's capacity to generate value for its stakeholders, encompassing shareholders, employees, consumers, and the community (Rindova & Fombrun, 1999). Particularly, in this study, firm performance refers to a firm entity's overall success, efficiency, and effectiveness in attaining its goals, which is frequently measured using a variety of financial and non-financial criteria.

2.4 IT infrastructure

IT infrastructure has been proposed to contribute greatly to the digital transformation process. IT infrastructure is a component of IT capabilities (Lu & Ramamurthy, 2011), consisting of a firm's architecture, data management services, and application platforms, and is essential to creating a solid communication and integration system both within and outside organisational boundaries (Ko et al., 2022; Li & Chan, 2019; Tallon et al., 2019). Specifically, government policy encourages the accessibility of IT infrastructure by offering these incentives, supporting technical breakthroughs, and assisting businesses in keeping up with growing digital trends ((Mpofu, 2023). Similarly, Government policies can help SMEs enhance IT infrastructure, helping the economy and technical advancement (Mai et al., 2023). Based on the above arguments, the following hypothesis is proposed:

H1: Government policies significantly foster the development and accessibility of IT infrastructure.

2.5 Business model innovation

The concept of business model innovation (BMI) BMI refers to the intentional process of restructuring the fundamental elements that drive the business value proposition for the company, its customers, and other stakeholders (Ciampi et al.,

2021). Moreover, corporate strategies have concerned a critical component of digitalisation and digital transformation (Bharadwaj et al., 2013; Ko et al., 2022), which suggests a link between digital transformation and BMI. For example, companies that use digital technology may consider data streams as crucial and use them to aid their digital transformation efforts (Correani et al., 2020; Dąbrowska et al., 2022), which contrasts with traditional business model frameworks (Pigni et al., 2016). Therefore, digital technologies are fundamentally linked to strategic changes in business models, leading to business model innovation.

H2: Government policies positively impact business model innovation.

IT infrastructure can boost a company's product, process, methodology, capability, and business model innovation (Cassia et al., 2020). Previous research has classified the role of IT in businesses into strategic, operational, and infrastructural categories, with a significant emphasis on its connection to innovation (Tallon et al., 2019). IT infrastructure implementation demands major organisational processes and investment adjustments to preserve economic and financial sustainability and competitiveness (Mauerhoefer et al., 2017; Mohamad et al., 2017). Therefore, this paper suggests that implementing IT infrastructure is positively related to facilitating the process of BMI, which leads to the following hypothesis:

H3: IT infrastructure has a significant impact on business model innovation.

2.6 Digital transformation, dynamic capability, innovation and performance

Technology is pivotal in driving digital transformation, opening avenues for innovative business opportunities and strategic initiatives (Dąbrowska et al., 2022). Particularly, companies equipped with advanced IT infrastructure can spearhead digital transformation by revamping and envisioning existing business processes and transforming traditional products, services, and customer offerings into digital solutions (Gong & Ribiere, 2021). Furthermore, the organisation excels in modern IT infrastructure, resulting in higher-quality products than competitors (Rasool et al., 2023). Besides, the drive for digital transformation is fuelled by the notion that new technologies have tremendous potential for driving innovation and competitive advantage (Radicic & Petković, 2023). According to Scuotto et al. (2021), SMEs must cultivate internal digital capabilities to adapt to market dynamics swiftly. Hence, they can actively contribute to their innovation performance and achieve growth in an ever-evolving digital competitive landscape.
Consequently, the following hypothesis ensues:

H4: IT infrastructure has a significant impact on digital transformation.

Indeed, digital technology, social media, and the Internet would boost SMEs' innovation and help them grow locally and globally (Cenamor et al., 2019). Additionally, SMEs can gain a competitive edge through organisational digitalisation (Dutta et al., 2021). Particularly, many developing countries' SMEs lack digital literacy. A significant number of SMEs in developing nations have a deficiency in digital literacy. In the absence of digital technology, SMEs would lack awareness of the necessity for digital transformation, leading to a deficiency in digital preparedness and capability (Warner & Wäger, 2019). Although digital technologies are essential for the success of SMEs, many are hesitant to adopt these solutions due to their limited capabilities and resources (Kraus et al., 2022). Generally, digital transformation enhances innovative activities in the workplace. According to Kopka & Fornahl (2024), SMEs experience increased productivity with Artificial intelligence (AI) integration at the productivity frontier, contrary to the leapfrogging hypothesis. However, evidence suggests that larger latecomer firms benefit more from AI adoption in terms of innovation, illustrating a divergent impact on productivity and innovation growth.
Hence, the following hypothesis is proposed:

H5: Digital transformation has a significant impact on business model innovation.

Dynamic capabilities are the ability to perceive, seize, and restructure internal and external resources to adapt to changing business conditions (Li et al., 2022). The framework includes creating, im-

plementing, and preserving competencies and resources to respond to business changes. To manage unforeseen changes in the dynamic corporate world, digital sensing requires scanning, learning, comprehending, identifying, developing, co-creating, and analysing technical potential (Teece, 2014). Moreover, strong dynamic capabilities enable enterprises, particularly their top management, to effectively orchestrate resources and competencies, anticipate market and technological changes, realign assets accordingly, and strategically collaborate with other enterprises for business ecosystem co-creation (Teece, 2020). However, little research has examined how digital transformation affects dynamic capabilities.
Therefore, this study proposes a hypothesis based on these findings:

H6: Digital transformation has a significant impact on dynamic capability.

Dynamic capabilities support business models in the sense that an agile and responsive firm can adopt, trial, and refine new and revised business models quickly (Lüdeke-Freund, 2020). Similarly, the mastery of creating and modifying business models is an essential foundation for establishing dynamic capabilities (Correia et al., 2021). Effective business model re-engineering skills are necessary to facilitate efficient seizing, promote strong dynamic capabilities that free resources for future growth, and align strategic outcomes with make/buy decisions. Besides, innovation ecosystems are a foundation for dynamic organisational capabilities (Guerrero & Siegel, 2024). However, the existing research primarily focuses on the one-sided impact of dynamic capabilities on BMI (Warner & Wäger, 2019). Therefore, to address this research gap, the study proposes the following hypothesis:

H7: Business model innovation has a significant impact on dynamic capability.

The strategic utilisation of digital technologies significantly impacts both innovation capacity and growth for companies, particularly for SMEs, highlighting the enduring importance of ICT as a critical success factor for SMEs' growth (Scuotto et al., 2021). Digital transformation, through improved automation, lower operating costs, and increased customer satisfaction, can positively impact overall performance (Dąbrowska et al., 2022; Li, 2020).

Firm performance is enhanced by the reduced expenses related to coordination, transactions, and agency that come with integrating digital transformation across suppliers and partners in the value chain (Arji et al., 2023). Likewise, leading SMEs demonstrate the benefits of digital integration through their approach to synchronising data, ideas, and information to enhance customer-side business processes (Correani et al., 2020; Tekic & Koroteev, 2019).
This paper posits the following hypothesis as a result:

H8: Digital transformation has a significant impact on firm performance.

Notably, researchers have also attempted to investigate the impact of BMI on firm performance in recent years. Innovation has been connected to various beneficial outcomes, including market uncertainty adaption (Vrontis & Christofi, 2021) and enhanced stakeholder relationships (Leonidou et al., 2020). Moreover, companies with superior financial performance placed double the amount of attention on BMI compared to underperforming companies (Bashir, 2023). Similarly, previous studies examined the correlation between BMI and firm performance and found that successful companies place twice as much importance on BMI as underperforming companies (Bhatti et al., 2021; Lüdeke-Freund, 2020). Based on such argumentation, the following hypothesis is proposed:

H9: Business model innovation has a significant impact on firm performance.

According to Martins (2023), dynamic capabilities (sensing, seizing, and transforming) have a notably positive impact on SME performance, with digitalisation significantly enhancing the relationship between these capabilities and SME performance. Meanwhile, dynamic capabilities are a meaningful way to analyse the total influence on a firm's growth (Mathivathanan et al., 2017). Likewise, dynamic capabilities play an essential role in

entrepreneurial resources for increasing the firm performance of start-ups while reliably mediating the relationship between resources and performance (Wu, 2007). Additionally, product development reconfiguration capability was favourably associated with firm performance and performance enhancements over time (Qiu et al., 2020). However, success is not always guaranteed, even if SMEs can collect or replenish massive resources in a dynamic market (Sharma et al., 2023). Without dynamic capabilities, business resources would not transfer into firm performance (Bashir, 2023). Additionally, to enhance the impact of dynamic capabilities on SME performance, digitalisation strategies, including consistent incorporation of digital analytics, operations, marketing and sales, ecosystem, and products and services, should be integrated into the transforming process (Martins, 2023). Based on these arguments, the last hypothesis is suggested:

H10: Dynamic capability significantly influences firm performance.

Figure 1 depicts the research model with hypothesis development. The figure includes six essential elements, such as IT infrastructure, digital transformation, government policy, business model innovation, dynamic capabilities, and company performance.

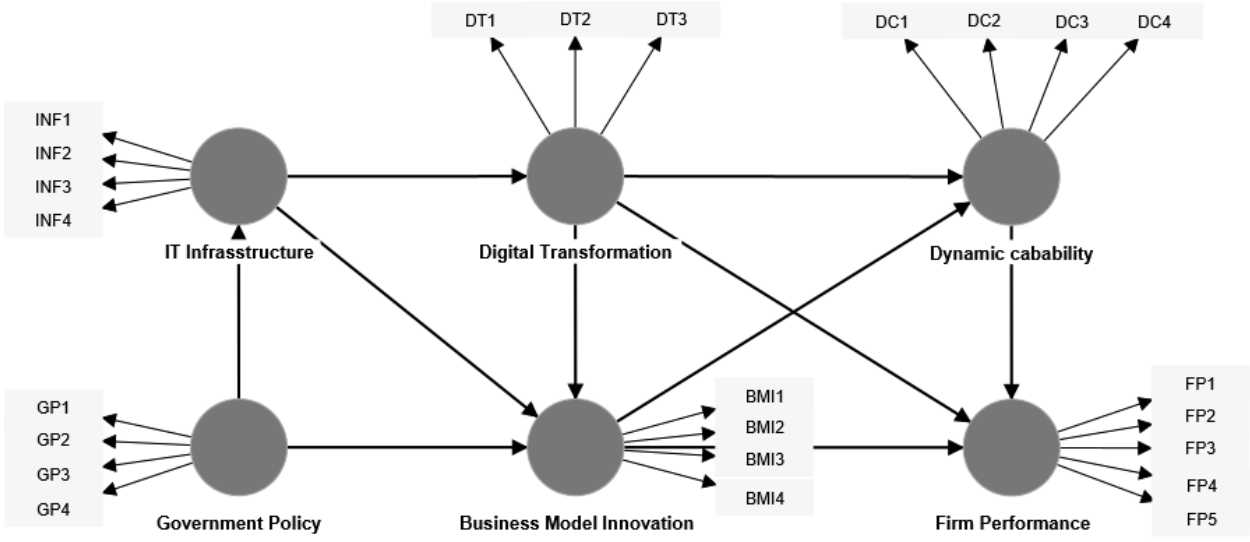
3 METHODOLOGY

3.1 Data collection

The research predominantly gathered data through the distribution of questionnaires. To enhance the applicability of the measurements in the Vietnamese context, the items were initially translated into Vietnamese and subsequently revised by two social science specialists. Subsequently, the questionnaire was rendered into English once again to present updated versions of previous measurements while guaranteeing the preservation of the original meanings. Moreover, the final version of the questionnaire was modified after conducting a pilot test with 42 respondents and one group discussion with five company managers and three local government officials.

The questionnaire was disseminated via snowball and convenience sampling methods. By subdividing the districts' target SMEs by geography and population density, the authors aimed to avoid selection bias. With local authorities' help, the authors contacted several top managers from a list of businesses in each district. Participants were requested to volunteer. The managers learned about the study's goals, were assured of their privacy, and were told there were no wrong answers. Those who cannot answer a question can stop at any time.

Figure 1: Research framework



Source: Created by the authors

Between March and August 2023, a total of 950 questionnaires were distributed to executives of SMEs and then shared with other managers. It was anticipated that the board management team and managers would complete the survey. A total of 880 samples were collected, out of which 658 were deemed suitable for further investigation. Consequently, Table 1 presents more details regarding the characteristics of the sample.

3.2 Measurement

The primary variables concerning the literature were measured in combination with the practices of the examined firms to ensure the research's validity and reliability. The participants were asked to assess their degree of agreement with each item's measurement using a 5-point Likert scale, ranging from "1 = strongly disagree" to "5 = strongly agree."

Table 1: Characteristics of SMEs

	Number of respondents (N=659)	Percentage (%)
Industry of operation		
Production	336	51.0
Shipping & Logistics	123	18.7
ICT companies	89	13.5
Food & drinks	78	11.8
Others	32	5.0
Types of business		
Limited Liability Company	325	49.3
Joint Stock Company	252	38.2
Foreign Invested Enterprise	51	7.9
State-owned Firms	30	4.6
Job title		
Executive Managers	340	51.6
Board of Company Council	145	22.0
Senior Managers	133	20.2
Board of Directors	40	6.2
Number of employees		
Less than 20	344	52.2
20 – 50	111	16.8
51 – 99	60	9.1
100 – 200	62	9.4
More than 200	82	12.4
Operation time of business (years)		
Less than 5	191	29.0
5 – 10	193	29.3
11 – 20	173	26.3
More than 20	102	15.5

Source: Created by the authors

First, the four-item measurement scale was adapted from Wong et al. (2020) to measure government policy. Second, IT infrastructure with four items was adapted from Lu and Ramamurthy (2011). Third, the three-item scale for measuring digital transformation was adapted from Thuy (2021). Fourth, as for the construct of business model innovation, the four items were adapted from Ciampi et al. (2021). Fifth, four items were adapted from Wu (2007) to measure dynamic capabilities. Finally, the five-item scale used to measure firm performance has been adapted from Tajvidi and Karami (2021). The participants were requested to evaluate the performance of their enterprise in relation to its growth and profitability. Details of the measurement scale with a total of 24 items are presented in Table A1 in the Appendix.

3.3 Date analysis approach

Because of its efficiency and versatility, the Partial Least Squares Structural Equation Modelling (PLS-SEM) technique is employed for analysis. It is frequently utilised in the social sciences and fits complicated models with intricate structures and many construct-level interactions (Ali et al., 2018; Han et al., 2018; Joseph et al., 2022). As this study seeks to assess interactions across multiple dimensions in the new theoretical model, PLS-SEM helps investigate the causal links between distinct independent and dependent components, prioritising the support or rejection of hypotheses.

4 RESULTS AND DISCUSSIONS

4.1 Hypothesis testing results.

The confirmatory factor analysis results in Table 2 indicate strong convergent and discriminant validity, as evidenced by all item factor loadings surpassing the 0.7 threshold. Furthermore, the average variance extracted (AVE) exceeds 0.5. Moreover, Cronbach's alphas range from 0.855 to 0.930, well above the 0.7 benchmark. These outcomes strongly support the reliability and convergent validity (Caldeira & Kastenholz, 2018; Henseler et al., 2012).

Furthermore, the research followed the Heterotrait - Monotrait Ratio (HTMT) criterion to assess discriminant validity. The HTMT ratio between the average item correlations across different constructs and the average correlations within a specified construct should not exceed 0.85 (Henseler et al., 2012). In Table 3, all values fall within this range, indicating that the criteria for discriminant validity have been satisfied.

The structural model accounted for 8.5% of the variance in IT infrastructure (R^2 = 0.085), 43.1% of the variance in digital transformation (R^2 = 0.431), 32.6% of the variance in business model innovation (R^2 = 0.326), 63.9% of the variance in dynamic capability (R^2 = 0.639), and 56.7% of the variance in firm performance (R^2 = 0.567). Specifically, the standardised root mean square residual (SRMR) stands at 0.054, which falls below the threshold of 0.08, indicating a favourable fit (Hair et al. 2017).

Table 4 and Figure 2 present the research hypotheses and the analysis outcomes. All hypotheses were supported at a significant level.

4.2 Mediation effect

Furthermore, mediation tests were conducted to examine whether business model innovation and digital transformation indirectly impact firm performance, with dynamic capability acting as a mediating factor. The findings in Table 5 indicate positive indirect correlations between business model innovation and firm performance as well as digital transformation and firm performance, both partially mediated by dynamic capability.

5 IMPLICATIONS AND CONCLUSION

5.1 Discussion

This study affirms the positive effects of government policy on enhancing IT infrastructure. It also confirms the positive influence of IT infrastructure on driving digital transformation. Moreover, the study establishes the constructive impacts of government policy, IT infrastructure, and digital transformation on fostering business model innovation and the positive effects of digital transformation and business model innovation on enhancing dynamic capability, ultimately resulting in improved firm performance. The RBV theory effectively explains how digital transformation and IT advancement enable firms to surmount constraints in capital and resources, thereby accelerating growth and fostering positive performance.

Table 2: Reliability and Convergent Validity

Constructs	Items	Loadings	Alpha	rho_A	CR	AVE
Business Model Innovation (BMI)	BMI1	0.885	0.921	0.922	0.944	0.809
	BMI2	0.898				
	BMI3	0.926				
	BMI4	0.887				
Dynamic Capability (DC)	DC1	0.906	0.926	0.926	0.947	0.818
	DC2	0.912				
	DC3	0.890				
	DC4	0.910				
Digital Transformation (DT)	DT1	0.937	0.939	0.940	0.961	0.892
	DT2	0.959				
	DT3	0.937				
Firm Performance (FP)	FP1	0.866	0.900	0.903	0.927	0.717
	FP2	0.858				
	FP3	0.874				
	FP4	0.873				
	FP5	0.756				
Government Policy (GP)	GP1	0.761	0.855	0.870	0.902	0.697
	GP2	0.858				
	GP3	0.888				
	GP4	0.826				
IT Infrastructure (INF)	INF1	0.900	0.915	0.917	0.940	0.798
	INF2	0.870				
	INF3	0.895				
	INF4	0.908				

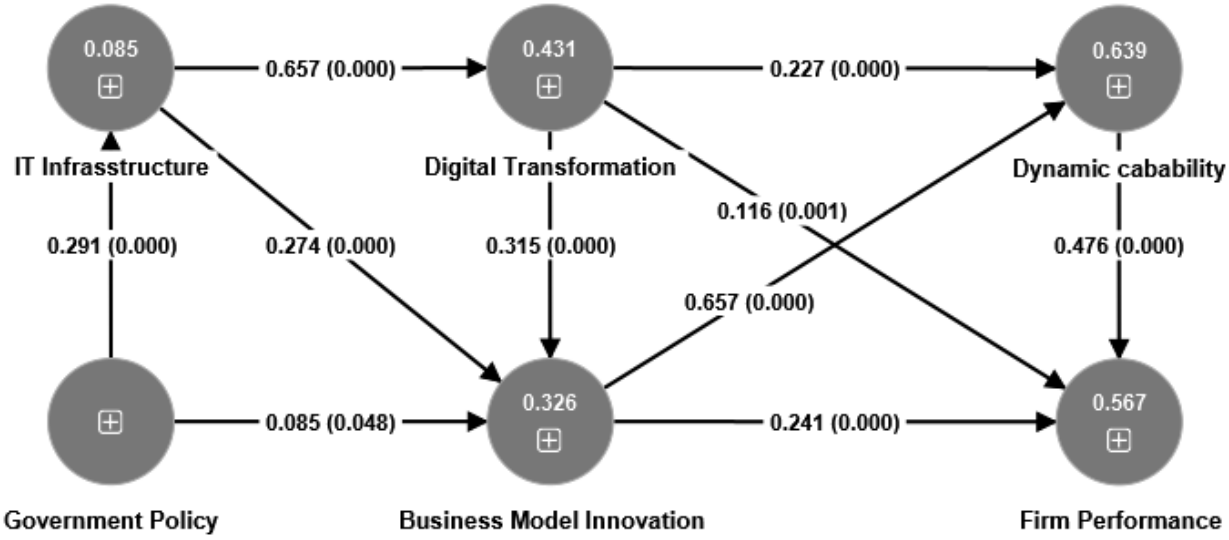
Source: Created by the authors

Table 3: Heterotrait - Monotrait Ratio

	BMI	DT	DC	FP	GP	INF
BMI						
DT	0.561					
DC	0.840	0.611				
FP	0.735	0.558	0.797			
GP	0.298	0.359	0.261	0.182		
INF	0.549	0.707	0.641	0.583	0.324	

Source: Created by the authors

Figure 2: Testing results



Source: Created by the authors

Table 4: Path coefficients

Hypotheses	β	T statistic	P values	Results
Business Model Innovation → Dynamic capability	0.657	23.078	0.000	Supported
Business Model Innovation → Firm Performance	0.241	5.112	0.000	Supported
Digital Transformation → Business Model Innovation	0.315	6.362	0.000	Supported
Digital Transformation → Dynamic capability	0.227	6.721	0.000	Supported
Digital Transformation → Firm Performance	0.116	3.354	0.001	Supported
Dynamic capability → Firm Performance	0.476	10.167	0.000	Supported
Government Policy → Business Model Innovation	0.085	1.978	0.048	Supported
Government Policy → IT Infrastructure	0.291	6.439	0.000	Supported
IT Infrastructure → Business Model Innovation	0.274	5.639	0.000	Supported
IT Infrastructure → Digital Transformation	0.657	22.206	0.000	Supported

Source: Created by the authors

Table 5: Mediation test results

Specific indirect effects	Estimates	T statistic	P values	Results
Business Model Innovation → Dynamic Capability → Firm Performance	0.313	9.133	0.000	Supported
Digital Transformation → Dynamic Capability → Firm Performance	0.108	5.591	0.000	Supported

Source: Created by the authors

Echoing prior research (Faria et al., 2023; Mai et al., 2023; Mpofu, 2023), government policy support significantly influences IT infrastructure, fostering business model innovation directly and indirectly. Financial incentives and regulatory frameworks, coupled with digital transformation initiatives, create an environment conducive to technological advancement. This prompts businesses to invest in cutting-edge technologies, forming a strong foundation for innovation in products and processes. Besides providing technical expertise and resources, government support nurtures an innovation-friendly corporate environment, encouraging companies to leverage advanced IT capabilities for value delivery, process optimisation, and responsiveness to market demands. Moreover, the findings affirm the positive impact of IT infrastructure on digital transformation and innovation, aligning with previous studies (Thuy, 2021). A well-developed IT structure facilitates the seamless integration of advanced technologies like cloud computing, big data, and AI, empowering organisations to expand and make informed decisions through data processing. Proficient IT infrastructure positions organisations for successful digital transformation, offering new strategies and growth opportunities. Additionally, digital transformation supports existing firms, enhancing competitiveness and sustainable growth. Enhanced connectivity and communication fostered by a reliable IT infrastructure facilitate collaboration, accelerating the implementation of innovative ideas and solutions.

The research confirms that digital transformation significantly influences business model innovation, dynamic capability, and firm performance, aligning with earlier studies (Ciampi et al., 2021; Eiteneyer et al., 2019). It fosters innovation by creating new revenue streams and innovative customer approaches. Successful digital transformation drives businesses to innovate, create new products, and gain a competitive edge through digitised operations for market analysis and adaptive organisational structures, ensuring sustained profitability. Enhanced efficiency, agility, and customer-centricity improve firm performance and competitive advantage. Furthermore, in line with prior research (Jaidi et al., 2022), this study underscores the substantial impact of innovativeness and dynamic capability on firm performance. It emphasises dynamic capability mediating between business model innovation and firm performance. Innovation refines processes, creates value, and accesses intangible assets. Dynamic capability grants firms' agility, adaptability, and innovative capacity to thrive in evolving business landscapes, leading to enhanced performance, sustained competitive advantage, and improved customer satisfaction.

5.2 Theoretical implications

Although business model innovation and digital transformation have become a benchmark for surviving in a competitive marketplace (Anning-Dorson & Nyamekye, 2020; Rupeika-Apoga et al., 2022), previous research has mainly shown identifying multiple influencing factors rather than delving into studying correlations and intermediate effects. This paper provides a valuable theoretical addition by clarifying the interconnections between government policy, IT infrastructure, digital transformation, business model innovation, dynamic capabilities, and firm performance. This study highlights the beneficial effects of government policy and IT infrastructure in promoting digital transformation, which in turn encourages innovation in business models. Expanding upon the RBV paradigm, the study emphasises the role of digital transformation and IT progress in helping SMEs overcome limitations in resources and expedite their growth, which is consistent with earlier research.

Furthermore, the theoretical contribution of this study lies in its exploration of the relationship between firm performance and digital transformation initiatives, particularly within the context of SMEs operating in dynamic economic markets, with Vietnam as a focal point. The research emphasises the significance of government engagement in creating a favourable environment for digital innovation and knowledge exchange among enterprises by analysing correlations in this particular context. This study highlights the need to provide incentives and promote active government involvement in business platforms to enable the acquisition of knowledge and the integration of digital technology, ultimately leading to improved firm performance. Moreover, the study highlights the importance of providing specialised direction to tackle the distinct obstacles encountered by SMEs, especially when it

comes to managing the intricacies of digital transformation during the epidemic and following economic rebound. The study enhances the existing literature by offering valuable insights into practical strategies for SMEs to adapt successfully and prosper in the changing business environment. This is achieved through a practical problem-solving approach and analysis of crucial factors that influence firm performance during digital transformation.

5.3 Practical implications

First, based on the research findings, it is recommended that the Vietnamese government proactively improve the IT infrastructure designed specifically for SMEs. This can be accomplished by implementing measures like tax incentives, initiatives for technology development, and programmes focused on enhancing workforce skills. Businesses can improve their global competitiveness by utilising these strategies. Moreover, it is advised that corporate executives take advantage of the existing government incentives, streamline resource allocation, and participate in collaborative platforms to promote the development of creative business models that can successfully adapt to changing market conditions.

Second, the incorporation of AI applications significantly impacts business operations, emphasising the need for SME owners to embrace innovative models, efficiently integrate data, and prioritise customer-centric strategies to enhance competitiveness. It is recommended that SMEs focus on investing in the growth of their workforce, keep clear and open financial records to make it easier to obtain financial assistance, and actively pursue strategic collaborations across different platforms to take advantage of new opportunities.

Finally, the findings provide SME managers with actionable insights for optimising firm performance through sophisticated resource allocation. Understanding which resources significantly impact performance enables targeted investments, such as cultivating a positive workplace culture, to improve performance. Policymakers can use these findings to build policies that promote resource development, focusing on areas such as digital transformation and dynamic capacities to help SMEs flourish. In managerial decision-making, taking into account unique resources, such as financial assets, is critical for prioritising activities to improve performance. Moreover, SMEs can use the study's findings to examine their competitive positioning by recognising and using unique resources, such as new business models, to distinguish themselves in the market.

5.4 Limitations and future studies

The study draws critical theoretical implications and specific business applications but lacks comprehensive insights, necessitating further research. It doesn't illustrate the cause behind the weak empirical link between government policies and business model innovation. While documenting the study's general model and variable correlations, it falls short in detailing their influences and interdependencies. Future studies should delve deeper into these relationships, offering more applicable insights to guide SMEs in formulating relevant and practical business strategies. Additionally, future research could propose diverse government policies to bolster economic growth, primarily supporting SMEs. The study broadly outlines factors influencing SME performance in the digital transformation era, enabling business leaders to chart development paths, leverage government support, and innovate business models. However, it overlooks differences among SME categories—ownership structure, industry sector, geography, and business models—that directly impact study outcomes. Future investigations should meticulously explore technological advancements crucial for successful digital transformation, offering valuable lessons for SMEs. Recognising these businesses' limitations in human resources, resources, and access to optimal IT infrastructure, the study identifies pivotal opportunities and orientations beneficial for SME executives.

5.5 Conclusions

The study emphasises the critical link between government policies influencing IT infrastructure and the subsequent impact on SMEs' digital transformation, fostering enhanced firm performance and dynamic capabilities. Recommendations urge active government involvement through support

policies, tax incentives, startup initiatives, training, and international trade engagement to fortify SMEs for contemporary integration and development. Notably, while government policies don't directly influence business model innovation, bolstering IT infrastructure is pivotal, fostering intrinsic factors that drive such innovation. Highlighting the crucial role of digital transformation for SMEs, the study underscores its positive influence on innovating business models, integrating digitisation programs, and facilitating data analysis, thereby enabling more optimal business strategies and product development. This transformation indirectly enhances the company's dynamic capacity and human resources, culminating in improved firm performance, growth, and a strengthened financial standing.

EXTENDED SUMMARY/IZVLEČEK

Majhna in srednje velika podjetja (MSP) se v današnjem hitro spreminjajočem se gospodarskem okolju soočajo z velikimi ovirami, predvsem zaradi omejenih virov in zmožnosti ravnateljevanja. Ta študija uporablja teorijo virov za raziskovanje, kako lahko vladne politike pomagajo MSP pri izkoriščanju njihove informacijske tehnologije (IT) za digitalno preobrazbo in izboljšanje poslovne uspešnosti. Glede na hitro razvijajočo se tehnologijo in povečano konkurenco po svetu morajo MSP dati prednost inovacijam in sposobnosti prilagajanja za doseganje dolgoročnega uspeha. Študija, ki temelji na podatkih 658 MSP udeležencev v Vietnamu, poudarja pomemben vpliv vladnih politik na oblikovanje IT infrastrukture in izpostavlja pomen inovacij pri krepitvi dinamičnih zmožnosti in splošnega poslovnega uspeha. Ti izsledki nudijo dragocene vpoglede za menedžerje in oblikovalce politik ter nakazujejo potencialna področja za prihodnje raziskave, ki imajo posledice za MSP.

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Appendix

Table A1: Measurement

Construct (denote)/(Source)	Item	Measurement scale
Government Policy (GP)/ (Wong et al., 2020)	GP1	The government or competent agencies provide financial assistance for digital transformation.
	GP2	The government implements relevant policies to accelerate digital transformation.
	GP3	The use of digital transformation has legal backing.
	GP4	The laws and regulations in place today are adequate to protect the application of digital transformation.
IT Infrastructure (INF)/ (Lu & Ramamurthy, 2011)	INF1	Data management services and architectures (for example, databases, data warehousing, data availability, storage, accessibility, sharing, and so on).
	INF2	Network communication services (for example, connectivity, dependability, availability, LAN, WAN, and so on).
	INF3	Portfolio of applications and services (e.g., ERP, ASP, reusable software modules/components, new technologies, etc.)
	INF4	IT facility operations/services (for example, servers, large-scale processors, performance monitors, and so on).
Digital Transformation (DT)/ (Thuy, 2021)	DT1	Our enterprise is pioneering new business processes based on technology such as big data, analytics, cloud, mobile, and social media platforms.
	DT2	Our enterprise is incorporating digital technologies such as social media, big data, analytics, cloud, and mobile technology to promote change.
	DT3	Our business operations are evolving toward the utilisation of digital technologies such as big data, analytics, cloud, mobile, and social media platforms.
Business Model Innovation (BMI)/ (Ciampi et al., 2021)	BMI1	When necessary, we are able to carry out massive internal reconfigurations to enhance our overall value proposition to our customers.
	BMI2	When we sense an opportunity, we are quick at re-organising our operating processes.
	BMI3	When necessary, we are able to reorganise our partner network to improve our value proposition to our customers.
	BMI4	New opportunities to serve our customers are quickly understood.
Dynamic Capabilities (DC)/ (Wu, 2007)	DC1	Our enterprise has the capabilities to integrate resources effectively.
	DC2	Our enterprise has the capabilities to reconfigure resources effectively.
	DC3	Our enterprise has the capabilities to learn fast.
	DC4	Our enterprise has the capabilities to respond to the rapidly changing environment.
Firm Performance (BP)/ (Tajvidi & Karami, 2021)	FP1	Our enterprise has been able to develop a sustainable business in the past three years.
	FP2	Our enterprise has a good reputation in the industry.
	FP3	Our enterprise's customers appreciate the company's product/service quality.
	FP4	Our enterprise has achieved its sales target over the past three years.
	FP5	Our enterprise reached the profit target over the past three years.

Source: Created by the authors

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A SYSTEMATIC LITERATURE REVIEW ON THE IMPACT OF JOB STRESS ON EMPLOYEE PERFORMANCE WITH SPECIAL REFERENCE TO THE BANKING SECTOR

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Abstract

One of the main objectives of this research paper is to determine the influence of job stress on employee performance, with a focus on the banking industry. Stress is considered a common element in all kinds of jobs and individuals are facing it in almost every walk of life. Employees are under tremendous amounts of stress in every organization, and the same condition prevails in the industry of banking and among banking professionals. Employee performance is critical to the success and continual development of any organization. After final screening and evaluation by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, thirty-seven (37) study out of seventeen thousand eight hundred (17800) were considered to be relevant and included in this systematic review. Using numerous online sources such as Google Scholar, Research Gate, and Web of Science, the aforementioned documents were identified. The study only includes articles published between 2011 to 2023. After a thorough and systematic review of the literature, it can be said that job stress and employee performance are negatively correlated. Various stress-inducing factors such as uncertainty about roles (Role ambiguity), role dispute (Role conflict), role overload (Work overload/underload), and insecurity at work (Job insecurity) are identified and these elements play a substantial part in increasing bankers' stress levels and negatively impacting the ability to perform. According to the research, there is a mutually reinforcing connection between job stress and performance among workers. When a person's level of stress in the workplace rises, it adversely affects performance.

Keywords: *Job Stress, Employee Performance, Banking Sector Role Conflict, Role Ambiguity, Work Overload/Underload, Job Insecurity*

1 INTRODUCTION

Stress is considered to be prevalent in all types of jobs, and individuals face it in nearly every facet of life. Stress is defined as how the body responds in general to any demand placed on it. These demands are commonly referred to as 'stressors.' and can refer to both pleasant and challenging circumstances or factors. Hans Seyle, the founder of Stress Theory, describes stress as a "nonspecific response of the body to any demand" (Seyle, 1956). He went on to say that stress is not always damaging or harmful. It depends on how you take it and deal with it.

The stress has been categorized into two distinct forms (Ratnawat & Jha, 2014):

I. Good stress is referred to as eustress.

II. Dysfunctional or negative stress is referred to as distress.

It is stated that the optimum level of stress (Eustress/ Positive stress) is essential for the success and growth of individuals but when it goes beyond the acceptable level it becomes Distress or Dysfunctional or negative stress which is harmful to the individual's success as well as health. Stress is the most increasing problem in today's world which is faced by every individual in every field and profession and often causes adverse effects on performance.

Positive stress, or eustress, has the potential to boost employees' motivation and productivity. This type of stress is often associated with a sense of challenge and can result in employees feeling energized and focused. Distress, on the other side, or negative stress, can result in an overall decrease in performance, burnout, and motivation. For example, employees in the banking sector may experience eustress when they are given challenging goals to achieve, which can drive them to perform at their best. Conversely, distress may arise when employees are faced with unrealistic workloads, conflicting demands, or a lack of support from management. It is critical for banks to identify the influence of both eustress and distress on employee performance and to employ proactive stress management strategies in the workplace. This can involve providing adequate resources, encouraging work-life balance, and offering assistance to assist employees in effectively dealing with stress. Through this approach, banks can cultivate a more optimistic and efficient work atmosphere for their workforce.

Another important element of the study is employee performance. Employees or say workforce are the most valuable asset for any organization; hence the success and the organization's success as well as development are heavily dependent on employee performance. If the employees perform all the duties and responsibilities effectively and efficiently it helps the organizational growth and success. In general, we define performance as the fulfillment of a responsibility in such a way that the performer is relieved of all stated responsibilities and duties. Employee performance is defined as the amount and standard of work completed by an employee by the responsibilities assigned to them (Mangkunegara & Rosadakarya, 2004). The ability to do the task assigned to them by using their skills and knowledge to achieve the goal is known as employee performance. Employee performance is critical for any organization's achievement of organizational goals and contributes to the organization's progress and achievement. Employee performance is critical to an organization's long-term survival.

According to various studies, stress is increasing at an alarming rate in the banking sector. The banking industry is recognized as the fundamental pillar of the economic system of any nation. Banks play a significant role in the growth and development of all sectors of the global economy. The nature of the job of bank employees is extremely stressful because of the tremendous increase in the level of competition as a result of globalization and liberalization. Rapid technological changes, bank restructuring (mergers and acquisitions), and digitalization have increased the stress level of bank employees in manifolds. The banking industry faces several obstacles, which add to job stress among its personnel. One significant cause is increased competitiveness in the sector, which leads to higher performance expectations and job pressure. Furthermore, frequent changes in regulations and policies by the government and the apex banking authority create an unpredictable work environment, increasing employee stress levels.

There may be a relationship between stress at the workplace (job stress) and employee performance. A high level of stress at the workplace may also result in high employee turnover which acts as a hindrance to the growth and success of any organization. Hence any organization needs to monitor the stress level of the employees and incorporate effective measures to reduce the stress at the workplace. The banking sector must address these factors and prioritize the mental and emotional well-being of its employees. Implementing strategies for work-life balance, providing resources for stress management, and fostering a supportive work culture can help alleviate job stress and create a healthier work environment for employees.

The main objectives of this research paper are enumerated below-

I. To determine the different stress factors influencing bank employees.
II. To investigate how stress in the workplace affects employee performance.

This study explores the complex relationship that exists between job stress and employee performance in the banking industry. This study seeks to provide significant insights for both academia and industry practitioners by identifying the factors that contribute to stress among bank employees and investigating how it affects their performance. Understanding the underlying causes of stress and its impact on performance is critical for creating a supportive work environment, increasing employee productivity, and, ultimately, maintaining the banking sector's competitiveness and growth. To begin, we looked at the various factors that cause stress among bank employees. Examining the internal and external stressors that are common in the banking industry is necessary to do this; these can include role ambiguity, workload constraints, job insecurity, and interpersonal problems. This study provides a comprehensive overview of these stressors to provide a deeper understanding of the challenges that bank employees encounter daily.

Secondly, this paper investigates the effects of job stress on the performance of bank employees. We conducted a thorough literature study to investigate how stress manifests in several dimensions of employee performance, such as job satisfaction, job engagement, customer service quality, and organizational commitment. By revealing the complicated interplay between stress and performance outcomes, this study aims to shed light on the mechanisms by which stress influences employee effectiveness and organizational success.

Finally, the findings of this study have important consequences for both academics and industry stakeholders. By explaining the causes behind job stress and its impact on employee performance in the banking sector, this study aims to contribute to the development of specific strategies and techniques for reducing stress and improving productivity. Furthermore, this study will aid in the investigation of modulating and modifying variables influencing the relationship between stress and performance. Individual differences in coping techniques, organizational culture, leadership styles, and job features, for example, may interact with stresses to amplify or mitigate their impact on performance results. Such findings are crucial for developing a pleasant work environment that prioritizes employee well-being and organizational success in the resilient banking industry around the globe.

2 RESEARCH METHODOLOGY

2.1 Data collection

The objective of this research is to identify the various workplace stressors that bank employees face and comprehend how these factors affect their performance and general well-being. The study is descriptive, and it is based on secondary data that was gathered from numerous national and international journals.

2.2 Method of Data collection

An in-depth and systematic review of the existing and pertinent literature was carried out to discover answers to the two study questions posed.

RQ1: What are the major factors that influence stress in bank employees?

RQ2: How do these elements affect the performance of bank employees?

This section thoroughly decides and discusses the study selection strategy, the conditions of eligibility for inclusion and exclusion, the evaluation guidelines of Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) and procedure, and the final result of the systematic review.

2.2.1 Study Selection Strategy

Various online resources are employed to gather information about the research topic and obtain answers to essential research questions. As the study is based on secondary data, online resources

such as Google Scholar, Research Gate, and Web of Science are used. The specified phrases were utilized to search for pertinent information. Some of them include "Impact of job stress on employee performance in the banking sector," "Effects of workplace stress on employee performance in the banking sector," "Impact of occupational stress on employee productivity and performance in the banks," and so on. Apart from this some of the keywords utilized in the search were "bank," "banking," "work-related stress," "job stress," "organizational stress," and "stress," and we looked for them in the title and abstracts of papers. To be included, papers had to describe the results of original studies, be published in English, and have their full text online.

Using PRISMA guidelines, a systematic and in-depth review of the available literature was conducted and findings from this literature are reported by the guidelines to get the answer to the pertinent research questions formulated.

2.2.2 The conditions of eligibility for inclusion and exclusion

The study related and relevant to the present research topic and questions were included. The studies explaining the influence of job stress on the performance of employees in the banking sector are included for further review. The primary objective of the study is to investigate the impact of job stress on the employee's performance in the banking sector including studies from this industry aligned closely with research focus and questions. The banking sector is known to face unique stressors that significantly to job stress levels among the employees. By including the studies specific to the banking sector, we were able to explore the distinctive factors contributing to stress within this industry.

The papers published in journals that were peer-reviewed were included. Since peer-reviewed paper demonstrates transparency and accountability in its selection criteria, it mitigates the risk of including studies with methodological weakness, misleading interpretations, or inaccurate conclusions, thereby enhancing the robustness of the review findings. Moreover, only the journal articles are included in this systematic review of the literature. Since the journal typically undergoes a rigorous peer review process ensuring a higher standard of quality and reliability therefore only peer-reviewed are included in this study. Since the book chapters offer specific and specialized perspectives or summaries rather than original research and the newspaper articles do not meet the peer review standards therefore these are not included in this systematic literature review.

The study only includes articles published between 2011 to 2023. Although financial inclusion efforts in India as well as across the globe have been ongoing for several years and aimed at expanding access to banking services and promoting financial literacy among the citizens of the country the concept of financial inclusion gained prominence globally around 2011.

Financial inclusion was not especially specified as a standalone aim in the Millennium Development Goals (MDGs) adopted by. However, financial inclusion was implicitly addressed in some of the MDGs, including Goal 1 (eliminate extreme poverty and hunger) and Goal 8. Despite not being expressly mentioned as a goal, the international community is increasingly recognizing the necessity of financial inclusion in ensuring long-term development and poverty reduction. As a result, financial inclusion has gained prominence in future development frameworks, such as the Sustainable Development Goals (SDGs), which replaced the MDGs.Financial inclusion has been cited as a facilitator of the Sustainable Development Goals, which were officially endorsed by the United Nations General Assembly on September 25, 2015.As a result, between 2011 and 2017, 1.2 billion adults gained access to bank accounts around the world.

In the period between 2011 to 2023, many policies were implemented like Pradhan Mantri Jan Dan Yojana (PMJDY-2014), Digitalization in the banking sector (2015), etc which aimed at providing universal access to banking facilities, promoting financial literacy and ensuring access to financial services for all the citizens particularly those from marginalized communalities. These reforms marked milestones towards achieving financial inclusion and accessibility for all the segments and hence resulted in increased workload, and target pressure which

resulted in increased stress among bank employees therefore the journal articles published in the aforementioned period were included in this research.

Another crucial inclusion criterion was that the article be written in the English language to ensure broad accessibility and comprehensibility of the reviewed literature. The English-language journal articles ensure that the review findings are easily understood and utilized by the researchers as well as the diverse audience facilitating broad dissemination and uptake of research evidence. Moreover, English language articles adhere to standardized reporting guidelines and peer review processes to ensure the quality and validity of published research. Therefore the journal articles published in English are included in this research. As per the exclusion criteria, the studies conducted in other sector than banking were excluded. The studies published in other languages than English and related to the subject matter were not taken into consideration. Only journal articles were included, news articles, reports, and dissertations were not taken into consideration. The publications unable to provide answers to the research question were excluded.

2.2.3 The evaluation guidelines (PRISMA) and procedure

The PRISMA standards were followed for selecting studies for additional review. The goals and objectives of each study were assessed to determine if they addressed the specified research questions. The studies that did not provide answers to the research questions were discarded. While screening and selecting titles, abstracts, and complete texts for further investigation, all inclusion and exclusion parameters were followed.

2.2.4 The final result of the systematic review

Thirty-seven (37) papers were selected and included in this study which meet the selection parameters and address the research questions.

2.2.5 Outcome of the Systematic Review

Although there was no geographical restriction, many inclusion and exclusion characteristics were examined for ultimate selection. As previously stated, seventeen thousand eight hundred (17800) documents were identified utilizing multiple online databases. Sixteen thousand eight hundred seventy-eight papers were excluded in the first step of screening due to duplication, or the title and abstract were irrelevant to the current study, or they were not published in English.

The remaining nine hundred twenty-two (922) studies were examined and scrutinized by the eligibility standards, and seven hundred fifty-six (756) papers were excluded since the full text did not correspond with the current study topic. Again, in the last phase of screening, 126 papers were removed because the methodologies employed were not relevant to this study or the complete text did not provide answers to our research questions. As a result, thirty-seven (37) studies were determined to be relevant and included in this systematic review after final screening and evaluation. The solution to the formulated research questions is identified based on these thirty-seven (37) papers Various factors causing job stress among bank employees have been identified and their consequence on bank employee performance is thoroughly examined. The research papers from which the PRISMA Flow diagrams are derived are mentioned as Borst, Kruyen, Lako and Vries (2019), Rashid and Bukhari (2022), and Anakpo, Nqwayibana and Mishi (2023).

The PRISMA flow diagram (Page, Mckenzie, Bossuyt, & Boutron, 2021; Figure 1) demonstrates the screening and selection process in details.

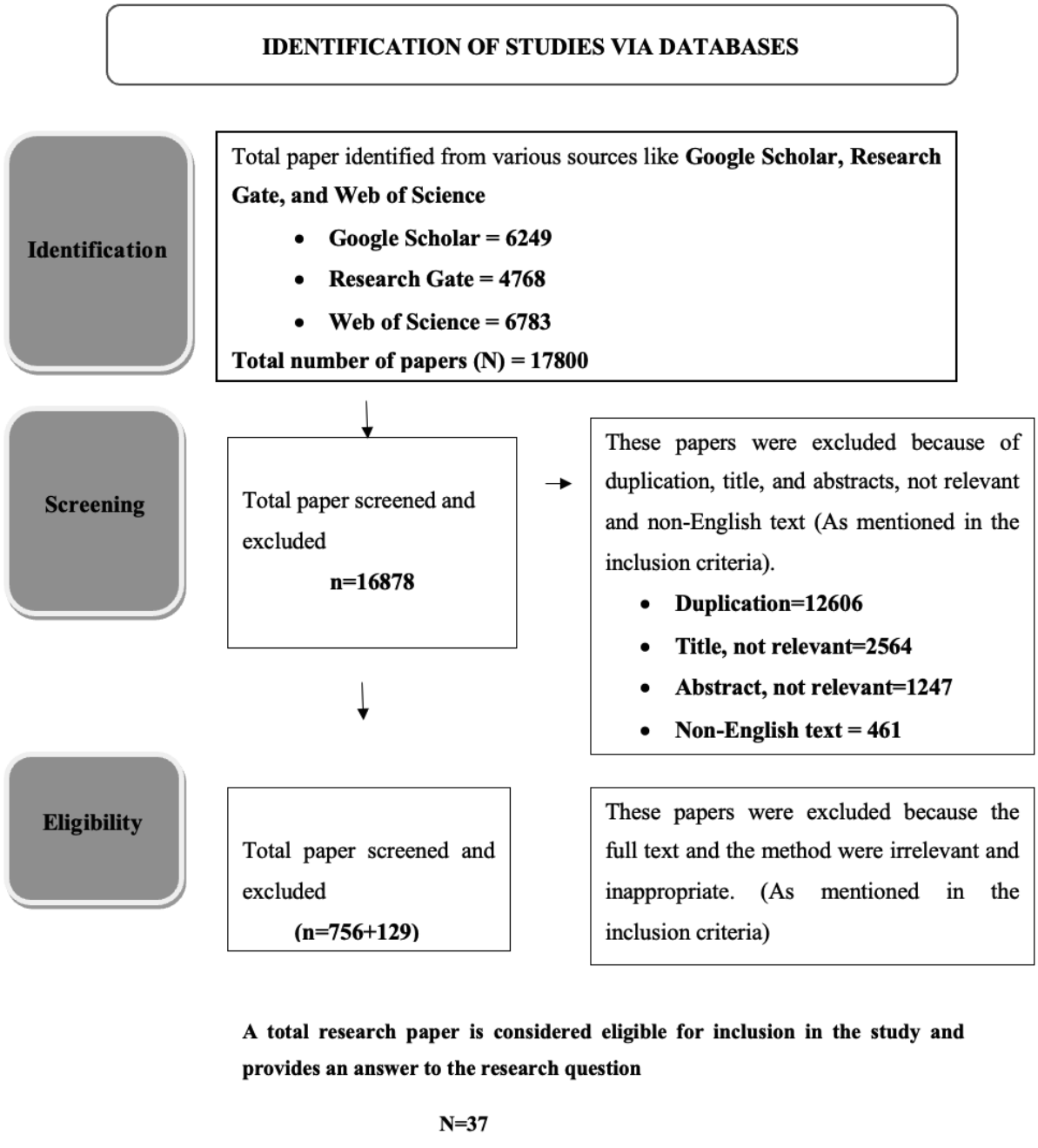
3 LITERATURE REVIEW RESULTS

The major focus of this paper is to review the available literature to identify stress inducers and determine how stress inducers affect employee performance. The factors that are stress inducers are identified through various relevant and important reviews are enlisted as follows.

3.1 Factors Inducing Job Stress among the Bank Employees at the Workplace

According to an American Institute of Stress survey (n.d.), “80 % of employees feel stress on the job; nearly half say they need help in learning how to

Figure 1: PRISMA flow diagram of study search and selection



manage stress." In reality, workplace stress is ranked higher than economic issues, family responsibilities, and even personal wellness challenges. Various factors induce stress among the employees at the workplace. Banking is considered one of those sectors in which employees have the highest stress level (Kaur & Sharma, 2016). As stated, banks come in the list of the top ten stressed workplaces in India. Jayashree (2014) analyses that 97% of bankers face an extremely high level of job stress. Most of them are overburdened with workload. Work-life imbalance and work pressure are the major reasons for increasing stress among the employees which results in increased absenteeism and reduced productivity.

According to Jamwal and Avkshit (2023) work overload is the major towards inducing stress among bank employees followed by Role ambiguity and Role conflict. Along with these long working hours, the pressure of time and unrealistic targets also act as stress inducers in the banking sector which pressurizes the bank employees. Similarly Lyimo and Joachim (2022) considered work overload/underload to be the most imperative element that acts as a stressor in the banking sector. Along with work overload, time pressure faced by the employees increases their stress levels. Along with the abovementioned stressors role ambiguity, role conflict, job overload, and lack of job autonomy as the major factors that result in job stress among the bank employees. Bhat and Alaf (2017) developed a conceptual framework to understand the connection between job stressors along their impact on employee performance. They identified four stressors namely role ambiguity, Role conflict, Job Insecurity, and work over-load/under-load. However, according to them, work overload plays an important role in increasing the stress level of the individual at work and negatively influences the performance of the workforce. This results in lowered efficiency, increased absenteeism, and low motivation which deteriorate the performance and productivity of the individual as well as the organization. Dhankar (2015) identified role overload along with role ambiguity, conflict, and political pressure are the major stressors in the workplace. According to the researcher in the Public sector banks, political pressure acts as an important stressor that creates an impact on the performance of the employees. They analyzed there is a very negligible discrepancy in the level of stress between the Public and Private sector bank employees.

Pandey (2021) conducted comparative analysis to examine the severity of workplace stress among Public and private banking professionals and it was discovered that Private banking professionals have an elevated degree of ambiguity regarding their roles, whereas Public sector bank employees face political pressure, which acts as a major stress inducer. In the same year, a comparative study to analyze the bank employee stress levels and the effect they have on the balance between work and personal life and differences in stress levels of bank employees in the State Bank of India and ICICI were evaluated. Demand, control, role, reward, and relationship were identified as work stress dimensions that have a substantial influence on their professional lives; State Bank of India personnel are more stressed than ICICI employees (Joyce, 2021). In contrast to this study, Mariappan and Kalidoss (2017) conducted a comparison study to assess the impact of stress on staff performance in both public and private banks in Tamil Naidu's Sivagangai district. According to the research conducted, private bank employees experience higher levels of stress at work than public sector bank employees. The most common causes of stress experienced by bank employees in the private sector are role overload, role authority, role conflict, and an absence of support from management in general. The main issue that employees of public sector banks face is long working hours. Niharika and Kiran (2014) conducted a study to determine the level of work-related stress among employees of commercial and public banks in the city of Lucknow, which supports the previous study's findings. The study discovered that employees of private banks have higher levels of job/occupational stress than employees of nationalized institutions. There is a relationship between independent variables like hierarchy, work experience, and bank type and dependent variables like role ambiguity, role conflicts, role overload, and so on. It was discovered that the impact of role overload is larger in nationalized banks since private bank personnel encounter the problem of role conflict. Kishori and Vinothini (2016) conducted research that solely focused on employees of the State Bank of India (main branch) in Tiruchirappalli. However the authors generalized the finding of the study to public as well as private sector bank employees and the results revealed that there is an elevated degree of stress associated with work among private and public sector bank employees due to prolonged hours of work, conflict related to role and responsibility, and political constraints. Deepanshi and Arrawati (2018) conducted a study on 126 public sector bank personnel along with 104 private bank personnel to identify various organizational role stress factors using the scale of organizational role stress developed by Udai Pareek in 1983, and ten role stressors were identified, namely - role stagnation, inter role distance, role degradation and overload, role confinement, role expectation disputes,

personal deficiencies, self role distance, ambiguity in role, and resource deficiencies. They discovered that employees in private-sector banks face more stress than employees in public-sector banks.

Following the comparative analysis of public and private banks, we may concentrate on the studies where researchers conducted a comparative analysis to determine the factors that cause more elevated stress in male and female banking personnel. Sharma, Basumatary, & Hazarika (2020) carried out a study to look at how stress at work affects both male and female bank employees' performance. Work overload is the major stress-inducing factor followed by time pressure and poor communication with the organization. It was found that female bank employees face more stress than their male counterparts. Workshops on stress management should be introduced and flexible working conditions should be adopted in the banks. Gaur, Gupta, & Jaiswal (2021) conducted a study in which two hundred (200) female bank personnel were selected for the study. The results of this study showed a positive and very strong association between job satisfaction and work-life integration. Therefore bank management must make policies to improve the satisfaction level of female bank personnel and help them balance their work and personal life.

Since banks represent the foundation of the nation's economy, numerous studies evaluating the effect of stress on employee performance in the banking industry are conducted throughout the subcontinent. Pandey (2020) a study was conducted on bank employees in Kathmandu, Nepal and it revealed that the main reason for increasing stress among the bank staff is employment/job overload which is followed by employment insecurity, ineffective system of communication, role conflict, and poor reward system. These factors adversely affect the morale of the employees which results in decreased productivity and declining performance. (Nazmul, Hassan, & Hossain (2019) carried out a study to investigate the influence of stress on Pubali Bank Limited, Bangladesh employees' performance. Unrealistic targets of the business, job insecurity, ineffective management, improper reward systems, and multiple reporting lines were identified as major stressors. These stressors resulted in increased absenteeism, increased turnover, reduced productivity, and increased conflicts hence they stated that stress at the workplace harm employee's performance because it acts as a hindrance to the growth of an organization. Well-articulated performance appraisal system and a straightforward reporting line should be adopted by the bank. Ahmed and Ramzan (2013) stated that productivity and stress levels are inversely proportionate if the stress increases, productivity decreases, and vice versa. They analyzed the data collected from the banking employees in Pakistan by utilizing correlation analysis. It was stated that a correlation exists between productivity and job/workplace stress.

Over time, numerous studies were conducted to identify the various stress-inducing factors and their impact on the bank employee's performance and productivity. Kumar, Suseendar, & Philims (2022) carried on a study of 148 bank employees in Tamil Nadu and discovered that there is a substantial connection between stress and employee productivity and performance. It was deduced that the majority of the employees are facing increased levels of stress at banks due to an absence of job autonomy as well as non-participation in organizational decision-making processes, and thus they lose a sense of belonging to the organization. Lopes and Kachalia (2016) identified some of the factors that induce stress in the workplace. Role ambiguity, overload, role conflict, time pressure, and lack of motivation are some of the major stressors that influence the performance of the individual at the workplace. They also found out that there is a notable relationship between the type of bank, gender, age of the employees, their job role, interpersonal relationships in the workplace, and influence of job stress. According to them, the five-day-week concept should be implemented to minimize the stress level of bank employees.

Goswami (2015) explained that there is a detrimental effect of workplace stress on the psychological and physiological health of personnel, as well as a negative influence on employee productivity, performance, and organizational profits. After analysis, he inferred that a lack of proper and healthy working conditions induces stress among the employees. Workload is one of the major stress inducer which affects the performance and productivity of the employees. He suggested that proper career develop-

ment planning and healthy working conditions can improve the morale of the employees. Ratnawat and Jha (2014) their study "Impact of Occupational Stress on Employee Performance" stated that negative stress /distress affects the physical and mental well-being of the bank employees which affects their performance at the workplace. They identified Thirty-Five Occupational Stress Inducer that induce stress and affect performance. Some of them are workload pressure, time pressure, long working hours, role ambiguity, role conflict, job insecurity, etc. Shukla and Sinha (2013) dentified that job stress is one of the major reasons for an increasing number of employee turnover. If the employees experience stress at the workplace, it results in a lack of commitment towards the organization and job dissatisfaction which compels them to quit the job. Joshi and Goyal (2012) identified several stressors, including uncertainty, job insecurity, job changes, workload, insufficient pay, working hours, technological changes, and communication gaps. According to the study, the aforementioned variables elevate the stress level of personnel at banks and impair their performance. It was suggested that management prioritize job satisfaction to encourage employees to achieve the desired goal. Samartha, Begum, & Lokesh (2011) stated that personal factors and psychological strains induce stress which negatively influences the performance and satisfaction level of bank employees. Lack of promotion, non-involvement in the decision-making process, and poor reward systems induce stress at the workplace and reduce employee productivity.

According to various studies, the banking industry's top stressors are identified as work overload, role ambiguity, role conflict, time constraints, unattainable goals, job insecurity, lack of job autonomy, political pressure, extended work hours, inadequate communication within the company, and inadequate reward structures. These stressors have been shown to have a considerable impact on bank employee performance and productivity, resulting in decreased efficiency, higher absenteeism, low motivation, and lower job satisfaction. Furthermore, factors such as gender, age, job type, and relationships in the workplace have been identified as influences on the level of stress experienced by bank employees.

The stress levels differ between public and private sector bank employees based on various studies and comparative analyses. Private banking professionals often experience an elevated degree of ambiguity regarding their roles, as well as stressors such as role overload, role authority, and role conflict. On the other hand, public sector bank employees face stress inducers such as political pressure and long working hours. Studies have consistently shown that private bank employees generally experience higher levels of stress at work compared to their counterparts in public sector banks. Additionally, factors such as work overload, time pressure, and poor communication with the organization have been identified as major stress-inducing factors for both male and female bank employees, with female employees often facing higher stress levels. It has been suggested that stress management workshops and flexible working conditions should be introduced to mitigate these stressors in both public and private sector banks. Overall, the research indicates that there is a notable discrepancy in stress levels between public and private sector bank employees, with private bank employees generally experiencing higher levels of job-related stress.

The degree of stress that bank workers face is significantly influenced by organizational characteristics, job position, and gender. Studies have regularly demonstrated that female bank employees face higher levels of stress than their male counterparts. This is frequently attributed to causes such as work overload, time constraints, and inadequate communication with the employer. Additionally, work responsibilities and organizational characteristics have a significant impact on stress levels. Role ambiguity, role conflict, job instability, and a lack of job autonomy, for example, have all been highlighted as key stressors that affect individual workplace performance. Moreover, the dual responsibility the females have to perform at work as well as at home acts as a major stress inducer among them.

3.2 Impact of Job Stress-Inducing Factors on the Employee's Performance

Several job stress inducers are identified based on the literature review. Several authors examined the influence of these inducers on employee performance in their studies. Tyagi and Rani (2023) re-

searched 150 employees of Yes Bank in New Delhi. They discovered that job stress has an enormous influence on employees and has a high and adverse effect on employee satisfaction. Job stress has a linear association that is negative with performance and the performance declines as the stress level rises. Yadav (2023) opines that job stress is extremely high among bank employees in Rajasthan, the increasing stress at the workplace results in poor psychological and mental health which adversely affects the overall well-being of the employees and thus hampers the productivity of the employees. It exacerbates feelings of insecurity, fear, anxiety, and depression among the employees, which results in a variety of behavioral changes in them.

According to the Manzoor, Irfan, Baig, Sajjad, Ullah, & Nabeel (2021) several factors such as uncertainty about roles, job overload, and work-family conflicts cause stress among bank employees. The above-mentioned factor adversely influences the employee's productivity and performance. This leads to a rise in absenteeism among employees. According to the study (Jain, 2021) increased absenteeism, high employee turnover rates decreased productivity and poor health conditions are some of the impacts of high levels of Job Stress. Job stress has an unfavorable effect on employee performance. This also has an influence on the employee's overall health, including both physical and mental well-being. Increased level of stress at the workplace leads to high blood pressure and diabetes and even cause depression among the employees.

Cherukur and Sherlin (2020) researched 60 HDFC bank employees in Chennai to find out the impact of Job stress on Employee performance in HDFC banks in Chennai. It was analyzed that bankers are exposed to a high level of stress at the workplace and it was found that two out of five bankers face extreme levels of job stress which hampers their productivity and performance. Work pressure and time constraints are cited as the primary stressors. According to the authors (Nguyen, Hoang, & Nguyen, 2020), increased workplace stress reduces job satisfaction, which impairs bank employees' performance. Increased stress and discontent among bankers leads to more workplace conflicts and has a detrimental impact on interpersonal interactions among bankers, as well as with customers and other stakeholder.

According to the authors (Eshan & Ali, 2019), the various sources of stress include job overload, conflicting roles, and ambiguity in roles which negatively influence the work environment, induce stress, and deteriorate the performance of the employees. The researchers concluded in their study that higher job stress leads to increased employee frustration and undermines bankers' commitment to their organization. Sharma and Yadav (2018) found that the influence of stress on the performance of bank employees working in both private and public banks has been compared. Working hours are the most stressful element in private banks, but role erosion and role inadequacy are the most stressful factors in public banks. The aggravated level of stress not only impairs employee performance and productivity, but it harms bank employees' psychological and physiological health.

Fredrick and Idris (2018) stated that job stress and employee performance are negatively connected, i.e., as stress grows, it adversely impacts performance. Workplace stress affects employees' intentions and motivation to perform, and it has a significant impact on their psychological well-being. According to the authors (Kaur and Kumar, 2017), the stress level among the bank employees is extremely high and it significantly influences the performance of the employees. The authors comprehend several reasons for increased workplace stress, including poor working conditions, competing job demands, ever-increasing targets and job complexity, and so on. This results in an unfriendly workplace environment, low productivity, diminished self-confidence, increased absenteeism, and so on. Akther, Akter and Uddin (2017) conducted a study on 246 banking professionals working at private banks in Bangladesh. In Chittagong and Dhaka, an increase in job stress has resulted in lower organizational commitment and satisfaction among employees, which leads to greater turnover intentions, job pressure, and, in some cases, job burnout. Employees' work-life balance is sometimes hampered by rising job stress.

The research by Lopes and Kachalia (2016) intended to discover the relationship between job stress and job performance among the employees of banks in the city of Mumbai. According to the study, increased job stress harms employee performance as well as productivity. When the stress level

in the organization rises, an employee's intention to complete the assigned task decreases. Shukla and Sinha (2013) found that job stress is the main reason for employee turnover in an organization. The extreme level of stress reduces commitment in the employees toward their organization and hence they tend to quit their jobs as they are unable to perform well and cope with the stress level at the workplace.

Paputungan (2013) used multiple regressions and found out that various stress-inducing factors such as work overload, time pressure, and poor administrative support affect the employee's performance and productivity in the banks. It is stated by the author that stress not only hampers employees' performance and productivity but is equally harmful to organizations as employee retention is adversely affected. Employee retention and job stress have an inverse link with each other. When the stress level at work increases the retention intention among the employees drastically diminishes. Karunanithy & Ponnapalam (2013) stated that female bank employee faces more stress at work because of their dual responsibility at work and home. Stress-inducing factors have significant but adverse consequences on the performance of employees. The authors explained a model in which they stated that job-related stressors, organization-related stressors, and individual stressors result in poor performance, lack of punctuality and self-confidence, increased absenteeism, and conflicts at the workplace (banks). Samartha, Begum and Lokesha (2011) conducted a study on 100 employees of 5 commercial banks in Mangalore. The authors concluded that technological changes and work overload are the main reason for increasing stress levels in the employees, these results in decreased satisfaction and productivity in the bank employees. The performance of the bank employees deteriorates because of the extreme level of stress.

4 INTERPRETATION

4.1 Factors Inducing Job Stress among the Bank Employees at the Workplace

Based on the literature review, various factors inducing stress among the bank employees are identified. Numerous factors cause stress at the workplace but the top ten factors that induce stress are: Role Ambiguity, Role Conflict, Long Working Hours, Time Pressure, Unrealistic Targets, Workload, Lack Of Job Autonomy, Poor Reward System, Ineffective Communication, and Job Insecurity.

These factors are the major contributors to the stress among bank employees. Most of the bank employees face the problem of role ambiguity. They are unable to understand their responsibilities to perform as well as the authorities they possess. The bankers also experience incompatible work demands. The greater the role conflict experienced by the banker the higher the stress level they have to face. Pandey (2021), Eshan and Ali (2019), Bhat and Alaf (2017), and Ranawat and Jha (2014) some of the researchers who have identified role ambiguity and role conflicts as the major stressors. Long working hours, work overload, and time pressure were identified as major job stressors by Jamwal and Avshit (2023), Lyimo and Joachim (2022), Jayshree (2014). Since the bank is a service sector the employees have to perform operational tasks as well as serve the customer needs, therefore, they have excessive workloads and hence to do work for long hours which hamper the work-life balance and induces stress among them. Moreover in the last decade banking sector has undergone tremendous change along with technological change the bankers have to adopt new trends, huge and unrealistic targets are assigned to the bankers and they are compelled to achieve them within a specified period which causes unbearable pressure and anxiety in them, therefore time pressure and unrealistic targets are considered the major stressors. Nazmul, Hassan, & Hossain (2019) along with other authors in their research attribute unrealistic targets as the most important stress-inducing factor. Job insecurity was identified as a major stress inducer among bank employees by (Sharma, Basumatary and Hazarika (2020) and Joshi and Goyal (2012). The increasing competition due to globalization, privatization, and recent policy changes in the form of mergers paved the way for new competitors and this also creates a fear of job loss among the bank employees. Hence lack of job security increases the level of stress among the bank. Pandey (2020) and Samartha, Begum and Lokesha (2011) opine poor reward system is the major stress inducer which acts as icing on the top, de-

spite working with full commitment bankers are poorly rewarded and most of the time their work is not given the due recognition. Bankers feel demoralized and stressed. Bank employees are generally not given any freedom in decision-making and policy-making. Nowadays the concept of micromanagement is adopted by the majority of the banks which leads to a lack of autonomy in the banks and creates an inflexible working environment that affects the mental well-being of the employees and the employees lose a sense of belongingness towards the organization. Deepanshi and Arrawati (2018) identified lack of job autonomy as one of the major stressors as it results in a lack of commitment towards the organization in the long run. Joyce (2021) identified ineffective communication as the main attribute of counterproductive behavior in employees. It is well said that if the stress level is high among the employees in the organization then there is a loophole in the communication system of the organization. Poor feedback causes ineffective communication among the employees in the organization. Lack of proper communication in the banks is considered as the major factor that causes stress at the workplace among the employees.

Apart from the above-listed factors, there are many other stressors. Poor relations with superiors/colleagues, political pressure, continuous technological graduation, frequent transfers, organizational culture, and toxic work environment are some of the stress inducers that are faced by bank employees at regular periods.

According to various studies, the banking industry's top stressors are identified as work overload, role ambiguity, role conflict, time constraints, unattainable goals, job insecurity, lack of job autonomy, political pressure, extended work hours, inadequate communication within the company, and inadequate reward structures. These stressors have been shown to have a considerable impact on bank employee performance and productivity, resulting in decreased efficiency, higher absenteeism, low motivation, and lower job satisfaction. Furthermore, factors such as gender, age, job type, and relationships in the workplace have been identified as influences on the level of stress experienced by bank employees.

The stress levels differ between public and private sector bank employees based on various studies and comparative analyses. Private banking professionals often experience an elevated degree of ambiguity regarding their roles, as well as stressors such as role overload, role authority, and role conflict. On the other hand, public sector bank employees face stress inducers such as political pressure and long working hours. Studies have consistently shown that private bank employees generally experience higher levels of stress at work compared to their counterparts in public sector banks. Additionally, factors such as work overload, time pressure, and poor communication with the organization have been identified as major stress-inducing factors for both male and female bank employees, with female employees often facing higher stress levels. It has been suggested that stress management workshops and flexible working conditions should be introduced to mitigate these stressors in both public and private sector banks. Overall, the research indicates that there is a notable discrepancy in stress levels between public and private sector bank employees, with private bank employees generally experiencing higher levels of job-related stress.

The degree of stress that bank workers face is significantly influenced by organizational characteristics, job position, and gender. Studies have regularly demonstrated that female bank employees face higher levels of stress than their male counterparts. This is frequently attributed to causes such as work overload, time constraints, and inadequate communication with the employer. Additionally, work responsibilities and organizational characteristics have a significant impact on stress levels. Role ambiguity, role conflict, job instability, and a lack of job autonomy, for example, have all been highlighted as key stressors that affect individual workplace performance. Moreover, the dual responsibility the females have to perform at work as well as at home acts as a major stress inducer among them.

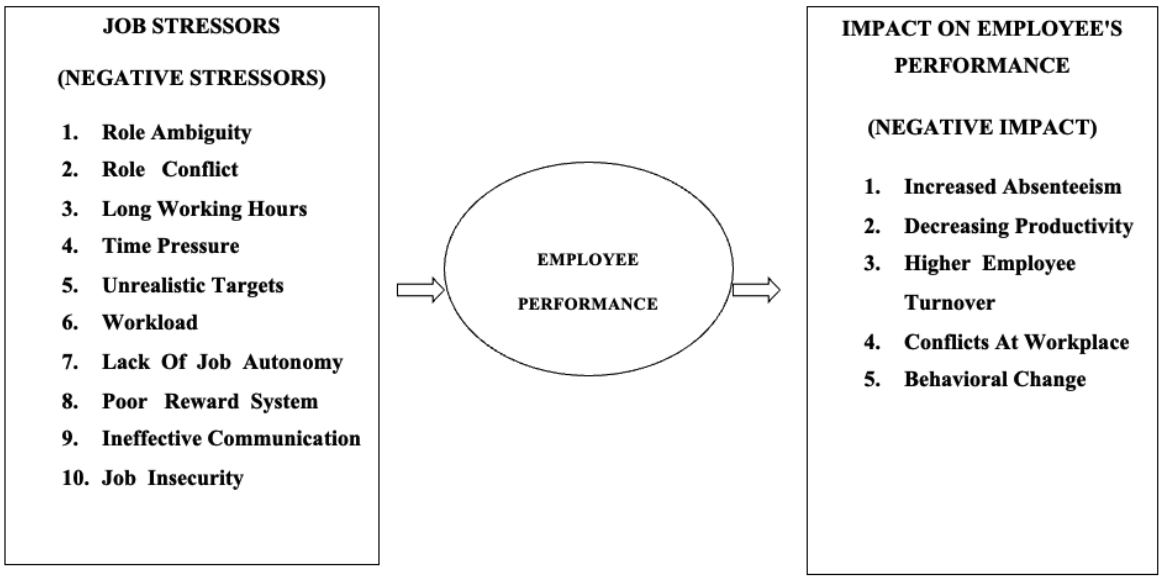
4.2 Impact of Job Stressor on Employee's Performance

Various stress-inducing factors have been identified, and every one of these factors possesses an adverse consequence on the work performance of

employees in the banking industry. The performance and productivity of the employees are negatively influenced by job stress levels. If the level of stress in the bank employees increases then it is observed that the performance of the employees decreases drastically. When the employees are stressed their willingness to work diminishes which results in increased absenteeism from the work. Manzoor and colleagues (2021) and Kaur and Kumar (2017) discovered that workplace stress causes increased absenteeism among employees. The productivity of the employees also decreases which has a huge impact on the growth of the organization. Low productivity leads to elevated expenses and waste of resources, which results in enormous financial losses for the company. When the influence of the job stressor increases the commitment and sense of belongingness among the employees decreases and finally the employees quit the job, hence employee turnover rates increase if the employee faces an increased level of stress at the workplace. Due to the increasing job stress, workplace conflicts are also increasing rapidly. The unrealistic targets and time pressure increase the level of competition between colleagues which creates rivalry among them and hence the conflicts among the colleagues increase moreover the superiors also badly pressure the subordinates to achieve the targets which de-motivates the employees and even leads to arguments and conflicts in the workplace. Increasing workplace conflicts and employee turnovers are consequences of the ever-increasing stress among bank employees as identified by researchers like Akther, Akter and Uddin (2017) and Karunanithy and Ponnapalam (2013). A toxic and stressful work environment brings many behavioral changes in employees. Continuous pressure makes the employees frustrated, moody, and even lethargic. The anxiety and anger level of the employees increases and sometimes it leads to depression, sleeping disorders, and other health issues. Jain (2021) explained in their study that stress causes behavioral changes that affect the physiological and psychological health of bank employees. Nowadays stress is becoming a lifestyle disorder.

The aforementioned visual investigates the impact of job stress on employee performance in the banking industry. It highlights a variety of stressors that harm employees' job performance, productivity, and general health. According to the study, greater job stress reduces employee performance, productivity, and dedication, leading to higher absenteeism and turnover rates. Additionally, workplace confrontations grow owing to unrealistic expectations, time constraints, and competitiveness

Figure 2: The Impact of Job Stressors on Employee's Performance



among coworkers, all of which contribute to a toxic work environment. Continuous pressure and stress also cause behavioral changes in employees, leading to irritation, moodiness, lethargy, increased anxiety and rage levels, and potential health issues like depression and sleeping difficulties.

The findings highlight the detrimental effects of job stress on both the individual and organizational levels within the banking industry. Notably, this study emphasizes how job stress not only diminishes employee performance and productivity but also leads to increased costs, resource wastage, financial losses, and a decline in employee commitment and retention. Furthermore, the escalating workplace conflicts and behavioral changes resulting from stress contribute to a challenging and unhealthy work environment, impacting the physiological and psychological health of bank employees. Overall, the research findings underscore the pervasive and multifaceted nature of job stress as a significant concern that can have far-reaching implications for both employees and the organizations they work.

5 DISCUSSION AND CONCLUSION

5.1 Conclusion

This study provides an understanding of the consequences of job stress by identifying various factors that induce stress in the workplace and how it influences the performance of bank employees. Stress in general is increasingly becoming a serious issue for society as a whole. Not only at the individual or personal level but at the organizational level also there is an alarming increase the stress levels which are becoming a major concern for all. Stress at the workplace is a psychological construct that may be experienced by employees daily and cannot be avoided or prevented. Almost in all the industry the employees as well as the employers are facing increased stress and pressure. Banks, as a service sector and the foundation for every nation's economy, have extremely elevated degrees of stress and pressure across personnel. Several job stressors are identified in this research paper. Role ambiguity, role conflict, long working hours, time pressure, unrealistic targets, workload, and lack of job autonomy, as well as a poor reward system, ineffective communication, and job insecurity, have been identified as major contributors to the escalating degree of job stress among bank employees, and these factors have an adverse influence on their performance. Increased absenteeism, decreasing productivity, increase in employee turnover, and increasing conflicts are the results of the increasing stress at the banks. Moreover, changes in the behavior of the employees can be observed because of the increasing pressure and stress at the banks. As a customer-centric sector, where customer service and customer retention are the main concerns, behavioral changes in employees are extremely harmful to the business as a whole. Human beings are considered the most important asset for the growth and profitability of any organization and bank is not an exception. Human resource performance and efficiency are key components of every organization's success. Banks are regarded as the backbone of the economy of a nation, therefore employee performance is vital not just for employers but also for the development of the nation as a whole. The banking sector is seen as a vital contributor to GDP growth, capital formation, and the development of small savings habits among our nation's citizens. Banks play an important part in the growth of the national economy. Therefore performances, productivity, and physical and psychological well-being of the bank employees are of utmost importance to the whole nation.

It can be inferred from certain studies that female bank employees typically endure higher stress levels than their male counterparts. Work overload, time limits, and inadequate communication are some of the factors that make female employees more stressed out. However, not all research has found the same gender difference in stress levels. Following a thorough analysis of the literature, comparative studies show which distinct factors contribute to stress in both the public and private sectors. Private bank employees typically deal with stressors including role overload, authority, and conflict, whereas public sector bank employees deal with pressures like political pressure and long working hours. In the majority of cases, private bank employees report more stress than public sector bank employees.

An individual working in the banking sector can adopt various stress coping strategies such as proper time management, attending motivational sessions, or seeking professional guidance can help bankers manage stress, Moreover, yoga and meditation or pursuing hobbies such as painting, gardening, cooking, or spending time with family and friends can act as a stress buster.

5.2 Managerial Implications

Stress management at work is a complex matter that falls within the purview of managers and bank management. This study will help the top-level management and the managers at the branch level identify the specific stressors within the banking sector that are negatively affecting employee performance. After the correct and timely identification of the stressor, the managers can implement strategies to manage and distribute workload effectively. This could involve revising the job roles, providing additional resources or support where necessary, and ensuring that employees have manageable workloads to prevent burnout. This study will also assist management in creating and providing training programs for employees on time management, resilience building, stress management strategies, and coping mechanisms. By providing employees with these skills, the management will be able to better manage job stress and enhance performance.

Along with supporting employee well-being and addressing the underlying causes of job stress, this study will aid in the examination of prevailing organizational policies and procedures. The results of this study will aid in reforming the policies about performance expectations, leave policies, work hour fixing, and workload management. The results of this study will also assist branch managers and upper management in developing a culture that encourages collaboration and mutual respect as well as establish open channels of communication to create a positive and encouraging work environment where employees feel appreciated, acknowledged, and supported.

The organization must adopt various stress coping strategies to take care of the physiological as well as the psychological well-being of its employees. The adoption of a five-day workweek combined with a flexible working environment will aid in the reduction of stress among banking employees. A comprehensive performance appraisal system, in addition to relieving the pressure of meeting unrealistic sales targets, can aid in motivating employees and increasing productivity. Bank employees' stress management should be prioritized at the individual, organizational, and national levels.

5.3 Limitations and future research

The secondary data used in the study were acquired via a systematic review of the body of work published in a wide range of national and international journals. The primary constraint on this research work is the small number of articles that were assessed. Despite the critical assessment, the number of papers reviewed may be inadequate. Moreover, this research focused on the identification of stress-inducing factors and their impact on the employee's performance in the banking sector hence it cannot be generalized to other sectors therefore these can be considered as the shortcoming of the study. Job stressors and performance outcomes in the banking sector may be influenced by industry-specific factors, such as competition, financial market conditions, and customer demands. Failure to account for these distinct elements may reduce the review results' relevance and applicability to the banking sector.

Another major limitation in the context of this systematic literature review on the impact of job stress on employee performance in the banking sector is the frequency of cross-sectional study designs. While these studies can identify connections between job stress and performance measures, they fall short of proving correlation or documenting longitudinal patterns. Cross-sectional studies, which collect data at a single time point, cannot account for changes in job stress levels or performance outcomes over time, thereby leading to biased or incomplete results. Longitudinal studies, which monitor employees' stress levels and performance metrics over time, provide a more robust methodological approach to determining the causal association between occupational stress and performance. However, such longitudinal studies may be less common in the literature due to practical issues such as resource limits, participant attrition, and the time required to detect important changes. De-

spite their relative scarcity, longitudinal studies are important for providing greater evidence and a deeper understanding of how job stress affects employee performance in the banking sector across different time points and circumstances. the aforementioned are some of the major limitations of this research.

This study and its findings are based on secondary data gathered through a systematic review of available literature published in both national and international journals. As a result, future research should concentrate on the collection and analysis of primary data from individuals working in the banking sector to develop a comprehensive view of job stress, its factors, and its influence on bank employees' performance and quality of life. Further studies may examine efficacious interventions aimed at alleviating occupational stress and its impact on the work performed by banking personnel. It can focus on developing and implementing certain strategies designed for the banking industry. Future studies can examine the correlation between job stress, employee engagement, and job satisfaction which will aid the organizations to design more holistic strategies to improve the overall well-being and performance of the bank employees. Future research should focus on examining the effects of job stress on the physical and mental health of banking sector personnel. Examining stress-related health conditions including depression, burnout, and cardiovascular disorders may fall under this category.

This review paper on the impact of job stress on employees' performance in the banking sector can serve as a foundation for future research and practical interventions aimed at improving workplace well-being and organizational effectiveness.

EXTENDED SUMMARY/IZVLEČEK

Eden glavnih ciljev članka je ugotoviti vpliv delovnega stresa na uspešnost zaposlenih, s poudarkom na bančništvu. Stres velja za pogost element delovnega okolja na vseh vrstah delovnih mest, s katerim se posamezniki soočajo v skoraj vseh vidikih življenja. Zaposleni v vsaki organizaciji doživljajo ogromne količine stresa, kar velja tudi za bančni sektor in bančne strokovnjake. Uspešnost zaposlenih je ključna za uspeh in nadaljnji razvoj vsake organizacije. Po končnem pregledu in oceni na podlagi smernic PRISMA je bilo sedemintrideset (37) raziskav od sedemnajst tisoč osemsto (17800) ocenjenih kot ustrezne in vključenih v ta sistematični pregled. Te smo identificirali z uporabo številnih spletnih virov, kot so Google Scholar, Research Gate in Web of Science. Študija vključuje le članke, objavljene med letoma 2011 in 2023. Po temeljitem in sistematičnem pregledu literature lahko rečemo, da sta delovni stres in uspešnost zaposlenih negativno povezana. Različni dejavniki, ki povzročajo stres, kot so negotovost glede vlog (nejasnost vlog), spor glede vlog (konflikt vlog), preobremenjenost vlog (delovna preobremenjenost/podobremenjenost) in negotovost pri delu (nevarnost izgube službe), so opredeljeni kot ključni elementi, ki močno povečujejo raven stresa bančnikov in negativno vplivajo na njihovo sposobnost za delo. Raziskava kaže, da obstaja medsebojna povezava med delovnim stresom in uspešnostjo delavcev. Ko se raven stresa na delovnem mestu poveča, to negativno vpliva na uspešnost.

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ORGANIZATIONAL CLIMATE AND EMPLOYEE SATISFACTION FOLLOWING THE REFORM OF SOCIAL SERVICES: LESSONS FROM SLOVENIA

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Abstract

The main goal of the paper is to present how employees of social services in Slovenia view the reorganization carried out in 2018 with the purpose to draw attention to the importance of both the organizational climate and employee satisfaction before and after the reorganization given the established connection between these constructs. In the research, mixed methods were used, specifically an explanatory sequential design. In the quantitative phase, an online survey adapted to these organizations was conducted among employees, while in the following qualitative phase in-depth semi-structured interviews were performed with managers and professional workers. The results show the failure of the reorganization of social services because the set objectives were not accomplished. Employees rated both organizational climate and employee satisfaction worse after the reorganization than before it. Here, the most critical aspects are the lack of knowledge concerning the new organization's mission, vision, and goals, coupled with the employees' lack of identification with them. While, as expected, a connection exists between climate and satisfaction as well as satisfaction and attitudes to the reorganization, the research also reveals the important connection between digitalization and the principles of good governance pursued by these services. The findings of the research may be valuable for policymakers and practitioners while designing and implementing future reforms in social services organizations in terms of ensuring a favorable work climate and employee satisfaction.

Keywords: *Organizational Climate, Employee Satisfaction, Social Services, Reform, Reorganization, Slovenia*

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1 INTRODUCTION

The organizational climate adds considerably to the effectiveness and efficiency of employees at work and, in turn, to the realization of the vision, mission, and goals of organizations. Studies show that organizational climate refers to the perception and feelings that employees have about their work environment and is based on their beliefs and experiences, and related to employee satisfaction, performance, and motivation on the individual, team, and organizational levels (Gil *et al.*, 2023; Schneider *et al.*, 2013). Unlike organizational culture, which is relatively permanent and built from common systems of values, attitudes, and principles, organizational climate represents the way organizational members perceive the organization's existing practices, and what members feel about the organization and their role within it (Prastiawan *et al*., 2020). More recent research (Ahmad *et al.*, 2018; D'Amato, 2023; Zahid and Nauman, 2023) identifies several of its dimensions, such as communication, leadership, cohesion, autonomy, innovation, rewarding, consistency between strategy and operational management, dynamics and freedom of expression, and particularly in the public sector it is strongly influenced by institutional leadership as a reflection of the integrity and responsibility of managers (Viđak *et al.*, 2023).

Given the complexity of the phenomenon, organizational climate is defined by many theoretical frameworks. Gil *et al.* (2023) relate it to social exchange theory, according to which employees perceive opportunities to develop their own skills, become visible in the organization and participate in decision-making, while contributing to a positive work environment and engagement. In this context, D'Amato (2023) highlights the theory of constructivist epistemology, according to which organizational climate emerges in a process in which employees construct its meaning by collecting and modifying their assessments of organizational events as a result of their interactions with (significant) others in the workplace. Furthermore, Schneider *et al.* (2013) distinguish between service, safety and diversity organizational climates. With the development of these dimensions, the theory approaches practical implications as these concepts focus more on organizational processes and their outcomes.

Studies also establish that the leadership style in public organizations has a significant impact on the climate since, as noted by Novac and Bratanov (2014), flexibility within the public system, motivation, and trust are essential factors in the success and strengthening of the reputation of organizations. The role of managers in these hierarchical organizations must accordingly be to ensure legitimacy and nurture agreements between different levels of management, whereas top management must consistently translate strategic messages to lower levels and provide formal and informal guidance, support, and empowerment for the operationalization of strategic directions by lower-level managers (Stanton *et al*., 2010). The basic foundation of the leadership style is trust, both of managers towards employees and employees towards managers, which is shown in public services of higher quality (Martínez-Tur *et al.*, 2020). As stated by Tomaževič *et al.* (2014), in the repressive part of the public sector (e.g. police service), the feeling employees have that the employer will protect them if they are exposed as part of performing their otherwise legal and professional work is important, while trust in one's immediate superior also has a strong influence.

Most studies of organizational climate in the public sector refer to its connection with specific aspects of the work of such employees. Moussa *et al.* (2018) and Mutonyi *et al.* (2020) found a strong positive connection between organizational climate and the creativity of employees at work. A supportive organizational climate was shown to be significantly positively related to the results of the employee training process and to the emphasized role of relationships (Gil *et al.*, 2023). Ancarani *et al.* (2019) established a positive connection between organizational climate and employee engagement, as reflected in the autonomy of workers, their empowerment and well-being, and simultaneously as concerns reforms in the public sector the authors claim that an organizational climate which is based on efficiency and is target-oriented does not have a positive effect on civil servants' commitment, and reforms do not therefore increase employee commitment.

To ensure an adequate organizational climate, the public sector often needs an organizational transformation with new innovative methods of organiza-

tion and operation that lead to a more agile, flexible, and innovative environment (Boufounou and Argyrou, 2022). As noted by Ng *et al*. (2016), it is crucial that the motivation for employment in the public sector is often related to external rewards (e.g., job security) or an easier work–life balance compared to the private sector (as also stressed by Kalliath *et al*., 2020). This is even more apparent in the case of younger generations of civil servants who no longer feel so much that motivation for being employed in these fields is built on a sense of commitment to serving the country and the common good. Public sector organizations are also characterized by a certain legal determination with the aim of protecting the public interest in administrative activities and users' rights (Babšek *et al.*, 2020), which is also accompanied by relative organizational rigidity and fewer opportunities for individual and collective innovation.

Employee satisfaction is influenced by many factors and exerts a positive effect on the effectiveness, efficiency, and stability of organizations. Employees are satisfied at work when they fulfill their desires and needs, taking various facets into account, including job security, work tasks, benefits, reward options, career development etc. (Sageer, *et al.*, 2012; Tomaževič *et al.*, 2014). As the theory of relative utility shows, higher job satisfaction can arise in various ways: through improvements in the objective aspects of the job, through lower expectations of the job and through a change in the weighting of the various aspects of the job so that the negative aspects receive less attention compared to the pleasant ones (Pacheco and Webber, 2016). It is important to note, as Herzberg's theory of job satisfaction, also known as Herzberg's two-factor theory or theory of motivation and hygiene, shows that the factors that lead to job satisfaction are different from those that lead to job dissatisfaction, meaning that these two feelings are not on a single continuum, but are independent phenomena (Maidani, 1991). Measuring employee satisfaction and monitoring its trends is thus a vital measurement that quantitatively helps to determine the overall health of an organization (Thomas *et al.*, 2019). At the same time, employee satisfaction is a complex and multifaceted construct that holds different meanings for different people, and mainly includes interpersonal relationships as a key intangible facet of work, material security, a positive work environment, and opportunities for personal and professional development (Laguador and Gonzales, 2023). Employee satisfaction hence reduces turnover and has a positive effect on work results and long-term performance (Myskova, 2011).

When it comes to examining employee satisfaction in the public sector compared to the private sector, even over a long period of time there are no uniform findings. Maidani (1991) states that overall employee satisfaction at work is largely based on internal facets, especially motivation, which applies equally to the public and private sectors, while employees in the public sector find external facets and rewards more important. In this regard, a study by Dirzyte and Patapas (2022) showed that employee satisfaction is most influenced by positive organizational practices and general life satisfaction, whereas employees in the private sector have more strongly expressed qualities of dignity, support, care, and optimism. In their study, Andersen *et al.* (2013) concluded that for civil servants' user orientation is more strongly positively related to their employee satisfaction than motivation for public service in general (Ng *et al.,* 2016), albeit in both the public and private sectors the social component of the motivation of employees has a positive impact on their satisfaction.

Other studies (Gastearena-Balda *et al.*, 2021; Mihajlov *et al.*, 2013; Zeffan and Bani Melhem, 2017), which found higher employee satisfaction in the public sector compared to the private sector, attributed the reasons for this to the greater security and predictability of the employment of public employees, who are in turn less interested in changing their current job and, on the other hand, the public sector offers fewer opportunities to change jobs. Other studies underscore interpersonal relationships and trust in the work of managers as being a vital factor of employee satisfaction in the public sector which, notably in the service sector of public institutions, increases engagement and reduces the possibility of burnout at work (Martínez-Tur *et al.*, 2020). Additional reasons for this include the position of employees within the organization and following the principles of Total Quality Management (TQM) (Škarica and Vrtodušić Hrgović, 2021). Regardless of the various facets of employee satisfaction, in their comparative study Juana-Espinosa and Rakowska (2018) established that motivational fac-

tors have a positive effect on employee satisfaction in the public sector, with no significant differences between the countries being studied.

Both organizational climate and employee satisfaction are crucial for the introduction of change in organizations. According to Kuipers *et al.* (2014), change management theory and institutional theory are the most commonly used theoretical perspectives when studying change in public sector organizations. Institutionalists argue that organizational change is imposed by the environment and that organizations seek legitimacy by adapting to environmental pressures. Change management theory, on the other hand, emphasizes how organizational change is brought about by the deliberate actions of the actors involved in the change, with the focus of the theory being on the intra-organizational level.

All of the above allows the conclusion that understanding the organizational climate and employee satisfaction in the public sector is crucial for analyzing the effectiveness and efficiency of public institutions that pursue their vision, goals, and mission to contribute to social welfare, progress, and democracy. This means it is important for researchers as well as policymakers and practitioners to understand these processes and the factors influencing them. In our research, we employed multiple research methods with the main goal of analyzing employee satisfaction and organizational climate before and after the reorganization of Slovenian social services in 2018. After presenting the basic constructs being studied (employee satisfaction and organizational climate), the paper describes the social services system in Slovenia – its institutional framework together with its reorganization that commenced in 2018 – followed by an explanation of the study's significance, the methodology, presentation, and interpretation of the results and, finally, a discussion and conclusion.

2 SOCIAL SERVICES IN SLOVENIA

2.1 Institutional framework

To fully appreciate this research and the implications it holds for the human resources management theory, it is necessary to understand the institutional environment of Slovenian social services and the reforms implemented in this context, particularly the reorganization of social work centers (SWCs) in 2018. The SWCs are the central, primary, and coordinating institution in the sense of having acted as a single entry point to the system of social services in Slovenia ever since they were established in the 1960s. From a legal and organizational point of view, SWCs are legal entities under public law with their own legal subjectivity - public institutes as holders of public powers that carry out the professional tasks delegated to them by the state. The goal of such an arrangement should be to bring social services closer to people and ensure apolitical decision-making (Babšek *et al.,* 2020). With this kind of institutional arrangement of social services, the professionalism and independence of action of SWCs in an extremely sensitive area are guaranteed. In September 2018, 62 SWCs were operating in Slovenia, with their local jurisdiction being determined by the areas of administrative units as a territorial division of the state administration. In October 2018, in the process of reorganizing them, they were merged into 16 organizationally independent public institutes which are managed in a fairly centralized way via uniform regulations and instructions of the competent ministry. Reorganization is the transformation of structures, procedures and mechanisms specifically designed to deliver services to citizens, leaving aside broader changes affecting public administration in general (Bolgherini *et al.*, 2019). Although this process was labeled as a reorganization, it went beyond mere changes to the organizational structure. According to the established goals, it was a reform intended to address the structural aspects and strategic functioning of these organizations.

Here, it must be noted that with its administrative and social system Slovenia belongs to the countries of Central and Eastern Europe regarding which, on top of striving for the efficiency, resilience, and agility of public organizations, the ongoing transition from former post-socialist arrangements to modern democratic principles is still typical. Further, in the case of administrative reforms, Slovenia follows the legal culture and norms specific to the German-Austrian tradition, with its relatively strict legalism and formalism (Kovač and Bileišis, 2017). During times of reforms, these sociological-cultural phenomena usually constitute an obstacle that must be properly ad-

dressed, i.e., incorporated into the existing system. The administrative tradition is a core factor for efficient reforms, which means the successful public management approaches developed in the Anglo-Saxon world are not necessarily a suitable mechanism for achieving reform goals in Central Europe. Alternatively, according to the way changes are introduced, their adaptation is necessary, e.g., also placing otherwise managerial-organizational measures in the legal framework which, on one hand is thus quite rigid in relation to private or Anglo-Saxon practices and, on the other, leads to predictability and legal security for stakeholders and is in line with the otherwise formalized nature of public administration.

2.2 The Reorganization of Social Work Centers

Before the changes in 2018, the SWCs had not been significantly reformed since their inception. Their reorganization was foreseen on the level of strategic documents by the Resolution on the national social welfare program for the period 2013–2020 (Official Gazette of the Republic of Slovenia, No. 39/13) that pursued the objectives of ensuring the availability, accessibility, and reachability of services while simultaneously improving the quality and efficiency of their implementation. This was to be achieved by reorganizing the SWCs since this would strengthen their coordinating and connecting role with the services of other departments and non-governmental organizations. In the entire social services system, this was expected to encourage the expansion of the offer and the introduction of modern innovative approaches based on the professional autonomy of the providers. Irrespective of the above, the provision of social services was expected to be primarily taken care of by public service providers in this area.

On the political level, the reorganization of the SWCs arose from two coalition agreements of the governments at the time, and legislatively was implemented with the Act on Amendments to the Social Security Act (ZSV-H, Official Gazette of the Republic of Slovenia, No. 54/17) as the central legal basis for the organization and operation of SWCs in Slovenia. In addition to merging public institutions and establishing new organizational structures (e.g., regional joint services at the headquarters and branches in a local area), it introduced social activation services for long-term unemployed persons, an informative calculation of social rights (e.g., child allowance, kindergarten payment subsidy), and other legal and managerial novelties (ACSW, 2018). In summary, the reform did not achieve the set objectives in terms of reducing administrative burdens for users, greater opportunities for fieldwork, and the development of new methods of professional work, chiefly due to insufficient strategic planning of the reform and the insufficient participation of relevant stakeholders (Babšek *et al.*, 2020). Concretely, the reform paradoxically led to increased bureaucratization and formalization of substantive work, unsuccessful rationalization, a failure to achieve the economic objectives of the reform, insufficient autonomy of the profession and social responsibility, and additional staff malnutrition and employee burnout (Rape Žiberna *et al.*, 2020). The systemic reasons for this may be found in the lack of a central coordination approach and insufficient rational discussion, along with cross-sector uncoordinated solutions, which led to inadequate reform results concerning operationalization of the principle of the welfare state relative to the publicly declared objectives of this reform (Kovač and Bileišis, 2017).

Given the above, from the point of view of organizational theory the SWC reorganization process was not carried out optimally as it did not cover all essential aspects of the operations of these organizations (whose key stakeholders are employees), nor did it focus on their participation and individual factors of employee satisfaction (Pacheco and Webber, 2016). Even today, several years after the reform, employees do not identify with the newly established organizations and do not know their vision, goals, and strategies (Rape Žiberna *et al.*, 2020). The reasons for the failed reform in the viewpoint of employees are to be found in the fact that in the Slovenian public sector, even though the formal aspects of civil servants are otherwise well taken care of, there is a lack of a strategic view and attitude concerning human resources management, which would have a long-term effect on assuring a stimulating environment and thus on the professional and personal development of employees at work (Stare, 2021).

3 SIGNIFICANCE OF THE PRESENT STUDY

In the literature, not many studies comprehensively deal with the organizational climate and employee satisfaction in social services in connection with their organizational or substantive reforms, but instead generally refer to just one aspect of the work of social services. Analyses accordingly often refer to strictly organizational-institutional aspects of reforms in terms of agencification, decentralization, and governance-related optimization of the welfare state in individual legal regulations/arrangements (Van Berkel, 2010) or analyze the objectives of administrative relief, cost reduction, and efficiency increase (Johnston and Romzek, 1999). Reforms have also been frequently studied in terms of the creation of policies and governance models of the welfare state, especially the operationalization of reform policies (Borghi and Van Berkel, 2007), the institutionalization and empowerment of citizens as prevention against political influences (Kekez, 2018), or political responsibility for the results of reforms arising from the administrative responsibility of social services (Byrkjeflot *et al.*, 2014).

Most studies in the field of social service reforms refer to their professional autonomy as the basis for their managerial independence and apolitical functioning, for example in the context of less radical reforms of social services due to professional values and the rootedness of institutions in public systems (Ackroyd *et al.*, 2007), the risk of standardization as a result of reforms for the professional basis of social work (Røysum, 2013), the key role of managers in successful reform implementation (Niiranen *et al.*, 2019), the impact of reforms on the transformation of the practice of social services in the direction of citizens' needs (Gilbert, 1998), and the importance of involving social services in reforms with a complex cross-sectoral impact to assure a supportive environment for employees (Levin *et al.*, 2020).

Although many analyses refer to the satisfaction of employees in social services with their work, yet only in general and not specifically in connection with reforms, some individual studies of the organizational climate in these services in relation to the implemented reforms can still be found, for instance on the connection between quality reform policies and the organizational climate in social organizations (Olin *et al.*, 2014), on the tangible effects of a positive organizational climate on solving the situations of individuals and families (Glisson and Green, 2011), and on the influence of organizational climate on the work of managers during the process of introducing the changes (Carnochan and Austin, 2002).

Almost no studies in the literature focus on establishing a link between organizational changes and organizational climate and employee satisfaction. Studies that partially referred to the mentioned topics were carried out in other countries and, due to the different cultural environment, are not directly comparable and applicable in Slovenia.

The presented research therefore provides important insights into the operation of social services from the point of view of both reforms as part of their external environment as well as the organizational climate and employee satisfaction. The aim of the research was to determine how employees of Slovenian SWCs generally view the reorganization of these services with the purpose of highlighting the importance of organizational climate and their work satisfaction. This was done by assessing their satisfaction and selected facets of the organizational climate before and after the reform and to establish whether a positive relationship exists between the studied variables. Accordingly, three research questions were formulated. The first question (RQ1) was concerned with how employees evaluate the achieved results of the SWCs' reorganization in relation to the set objectives. While finding an answer to this, the presence of statistically significant differences in the attitudes of managers and professional workers was also checked. The second research question (RQ2) asked how employees evaluate the organizational climate and their satisfaction before and after the reorganization. The third question (RQ3) was whether a correlation exists between employees' attitudes to the reorganization and the employee satisfaction and organizational climate.

4 METHOD

4.1 Participants

An online survey on reorganization, organizational climate, and employee satisfaction in Slovenian SWCs was administered at the beginning of 2022. An email was sent to the official e-mail addresses of all

16 SWCs in the country with an introduction to the survey, instructions for completing it, information stating that the results were confidential, and a link to the online survey. In order to achieve greater responsiveness, employees were also sent two reminders to participate in the survey. The population of the survey consisted of all 1,387 employees employed at the SWCs at the beginning of the survey. The survey was started by 351 participants – who answered at least one substantive question, and 243 surveys were completed. The share of participants in the survey was thus 25.3%, among which 95.9% were women, which is representative of the gender structure of the entire population. Most were aged 40 to 49 years old (41.0%), followed by those 50 to 59 years (29.0%) and 30 to 39 years (24.0%). The majority (68.0%) had a university education or education of the 2nd Bologna cycle, followed by those with a higher education or education of the 1st Bologna cycle (16.0%) and those with a higher secondary professional education (9.0%). According to the position in the organization they occupy, 8.0% of them were management representatives, 74.0% were civil servants – professional workers, while the remainder did not want to define themselves in this way.

In the second research phase that followed the online survey, in-depth semi-structured interviews with representatives of management and professional workers in SWCs were conducted. The goal was to achieve a representative sample in terms of the characteristics of individual SWCs. The interviews were held in 2022 after the survey results had been processed. Nine representatives of SWCs participated, including four managers and five professional workers.

4.2 Procedure

In view of the mentioned problematic situation, the study used mixed methods of research in a explanatory sequential design manner (Creswell and Plano, 2010) according to which a quantitative survey method was first used, followed by in-depth semi-structured interviews to clarify any unexpected results and provide a comprehensive understanding in a wider context of social services' reforms. The research was conducted at a time when just over 3 years had passed since the reorganization of the SWCs had been implemented since it was estimated that by this stage the reform was already well implemented and the operation of the institutions thereafter had stabilized to an extent making it possible to examine its effects more independently, even with as little influence as possible from the COVID-19 epidemic, which by then was already partly under control, and at the same time the findings were still sufficiently up-to-date given the timing of the completed reorganization.

The questionnaire prepared for an online survey was adapted from questionnaires already used in other studies to measure employee satisfaction at SWCs (Sladojević, 2021) and the organizational climate in local self-government administrations (Tašner, 2013). The questions concerning the reorganization of SWCs were developed by the authors themselves. To measure the organizational climate, the SiOK questionnaire, which is standardized in the Slovenian environment (Jordan *et al*., 2017), was adapted to the studied population. The survey contained closed-ended questions that required the level of agreement with each statement to be expressed using a Likert scale, where a score of 1 meant "Do not agree at all" and a score of 5 "Strongly agree". Due to the greater variability of the results, questions about the extent to which the reorganization's objectives had been achieved contained a Likert scale with values from 1 to 10, where a score of 1 meant "Least" and 10 "Most". When measuring organizational climate and employee satisfaction, scores on a 1–5 scale referred to the situation before and after the reorganization. Based on the survey results, the authors developed semi-structured interview questions that measured the same variables to provide for the triangulation and validation of the research results.

Quantitative data were processed in the statistical program IBM SPSS 28.0. Initially, exploratory-descriptive statistics were used. The non-parametric Mann-Whitney test (MW U test) was used to determine statistically significant differences in the attitudes of the two groups of employees (managers and professional workers), and correlation analysis with Pearson's correlation test (r) was used to determine the interdependence of the variables. The Atlas.ti 22 tool was used to process the qualitative data. The analysis was performed in line with the principle of open and axial coding with the creation of thematic networks of constructs.

4.3 Variables

In the research, the following facets of the SWCs' work were studied as variables of individual phases in the research:

- generally about the reorganization (its necessity and usefulness, involvement of employees, reduction of administrative burdens, development of new work methods);
- achieving the declared objectives of the reorganization (simplified procedures, unified operations, the same standard of services, social activation, multidisciplinarity, location and time availability, field work, development of professional work methods);
- employee satisfaction (satisfaction generally, satisfaction with management and colleagues, satisfaction with tasks at work, satisfaction with permanent employment and salary, satisfaction with training and education opportunities, satisfaction with promotion opportunities);
- organizational climate (employee commitment, organization, the fact that the mission, vision, and goals are well known, vision and goals, internal communication and informing);
- digitalization (the need for and usefulness of training, simplicity and transparency, time rationalization, supervision by superiors); and
- good governance principles (accountability, transparency, responsiveness, equality and inclusion, effectiveness and efficiency, rule of law, participation, and consensus orientation).

Employee satisfaction and organizational climate variables were measured by assessing the views held by employees before and after the reorganization in 2018. Based on an examination of related research in the Slovenian environment (Jordan *et al*., 2017; Sladojević, 2021; Tašner, 2013), relevant demographic data concerning gender, age, level of education, and the position held by the participants in the organization were collected for the research.

It is important to emphasize that the variables mentioned were studied in the context of reorganization as reform and not just as organizational change. Regardless of its (mis)designation and final outcomes, the reorganization of the SWC in the strategic documents and the reform policy was broader than just a change with a specific focus, which also included managerial, financial, legal, institutional and social aspects. The analysis must always be based on the actual purpose and objectives of the reforms as defined at the institutional level of governance, and not only on what is publicly stated, as there are often discrepancies here (Bolgherini *et al.*, 2019).

5 RESULTS

Employees generally assessed that although the reorganization of the SWCs was needed, it did not lower the administrative burdens and lead to the development of new work methods or more time becoming available to work with users (Table 1). Statistically significant differences between all the assessments made by managers and professional workers also emerged, except for the contribution to the development of new professional work methods where all aspects of the reorganization were rated better by the managers. As may be seen in Table 2, employees assessed that the introduction of the informative calculation of social transfers and the unification of SWCs' operations across the country were the objectives of this reform that were achieved to the greatest extent.

Managers statistically significantly rated the following objectives had been accomplished to a bigger extent better than professional workers: (1) the same standard of customer service throughout the country; (2) the unification of practice via the introduction of a new organizational structure; (3) more field work; and (4) services becoming more accessible.

Employees were the most satisfied with the working hours, permanent employment, and colleagues, and the least satisfied with the salary, opportunities for promotion and training, and the top management (Table 3), thus confirming theoretical findings on employee satisfaction in the public sector (e.g., Gastearena-Balda *et al.*, 2021; Mihajlov *et al.*, 2013; Zeffan and Bani Melhem, 2017).

As for the climate in their organizations, the respondents rated the internal communication and information, as well as organization the best, while knowing the mission, vision, and goals of newly established organizations and commitment were assessed

Table 1: General assessment of the reorganization – arithmetic means, standard deviation, MW U test

	Management			Professional workers				MW U	
Variable	n*	M**	SD	n*	M**	SD	Δ	U	p
SWCs' reorganization was necessary	19	3.32	1.20	180	2.48	1.21	0.84	1.064.500	0.005
SWCs' reorganization was beneficial	19	2.84	1.12	180	1.82	0.91	1.02	836. 000	<0.001
SWCs' employees were sufficiently involved in the reorganization process	19	2.58	1.02	180	1.81	0.90	0.77	986. 000	<0.001
The reorganization made it possible to have more time to work with citizens	19	1.84	0.96	180	1.27	0.62	0.57	1.049.500	<0.001
The reorganization contributed to the development of new methods of professional work	19	1.84	0.90	180	1.53	0.87	0.31	1.321.500	0.058
The reorganization reduced the administrative burdens	19	1.68	0.58	180	1.28	0.65	0.40	1.010.000	<0.001

*Note: *Number of answers ** 1 – completely disagree, 5 – completely agree. A non-parametric Mann-Whitney U test was used for assessing the differences between the two groups of respondents with the limit of statistical significance set at p ≤ 0.05.*

Source: Questionnaire survey, 2022 (see "Method"); calculations by the authors.

Table 2: Assessment of the declared objectives of the reorganization – arithmetic means, standard deviation, MW U test

	Management			Professional workers				MW U	
Variable	n*	M**	SD	n*	M**	SD	Δ	U	p
Simplification of procedures for exercising rights from public funds by introducing informational calculation	19	5.21	2.57	180	4.24	2.44	0.97	1333. 500	0.112
Standardization of SWCs' operation with the introduction of a new organizational structure	19	5.05	2.27	180	3.13	1.98	1.92	891. 500	<0.001
The same standard of services for users across the country	19	4.42	2.41	180	2.48	1.94	2.48	900. 000	<0.001
Improving the situation of long-term beneficiaries of financial social assistance through involvement in the social activation project	19	3.89	2.64	180	3.09	1.90	0.80	1457. 500	0.282
Ensuring multidisciplinary case management by teams of experts with specialized qualifications	19	3.84	2.69	180	2.86	2.11	0.98	1371.500	0.143
Better local and time accessibility for users	19	3.42	2.06	180	2.27	1.71	1.15	1097. 500	0.006
More fieldwork	19	2.84	2.36	180	1.71	1.34	1.13	1264. 000	0.029
Development of new methods of professional work with users	19	2.74	2.18	179	2.19	1.72	0.55	1454.000	0.262

*Note: *Number of answers. ** 1 – completely disagree, 10 – completely agree. A non-parametric Mann-Whitney U test was used for assessing the differences between the two groups of respondents with the limit of statistical significance set at p ≤ 0.05.*

Source: Questionnaire survey, 2022 (see "Method"); calculations by the authors.

to be the worst. All measured facets were rated worse after the reorganization than before. General employee satisfaction was also measured, with 26.1% being very dissatisfied, 35.4% dissatisfied, 30.9% neither satisfied nor dissatisfied, and only 7.3% satisfied and 0.3% very satisfied. At the same time, 66.0% rated their overall employee satisfaction lower than prior to when the reorganization started in 2018.

The following are the results of Pearson's correlation analysis (see Table 4) of the correlation between individual variables: general assessment of the reorganization (REORG), the objectives of the reorganization (OBJECT), employee satisfaction (SATISF), organizational climate (CLIMAT), digitalization (DIGIT), and good governance principles (GOODG). Among the measured variables, a positive two-way relationship was established between employee satisfaction and general attitudes to SWCs' reorganization, as well as the organizational climate and employee satisfaction at the level of 0.05 ($p \leq 0.05$). Employees who were more satisfied had a better assessment of the reorganization carried out and vice versa, while employees who had a better assessment of the organizational climate also assessed their own satisfaction better.

It was somewhat surprising that, unlike employee satisfaction, no statistically significant correlation was found between organizational climate and attitudes to the reorganization, nor were organizational climate or employee satisfaction related to the assessment of the extent to which specific objectives of the reorganization had been achieved. In particular, the connection between digitalization and the good governance principles is worth highlighting, with both being significant at the 0.01 level ($p \leq 0.01$), which points to the significance and importance of digital services for SWC employees in pursuing the principles of good governance such as, according to the OECD/Sigma, responsibility, transparency, responsiveness, equality, inclusion, effectiveness, efficiency, the rule of law, participation, and a consensus orientation (Kovač and Bileišis, 2017).

Table 3: Facets of employee satisfaction and organizational climate – arithmetic means, standard deviation, skewness, and kurtosis – before and after the reorganization

Before reorganization						**After reorganization**				
n*	M**	SD	γ	K	Satisfaction with	n*	M**	SD	γ	K
278	4.33	0.76	-1.34	2.91	Working time	279	4.12	1.02	-1.40	1.77
276	4.32	0.82	-1.25	1.65	Employment stability	278	4.07	1.07	-1.28	1.19
277	4.20	0.82	-1.07	1.37	Colleagues	278	3.76	1.09	-0.66	-0.31
279	3.96	0.69	-0.55	1.14	Tasks	279	2.97	1.06	-0.11	-0.70
275	3.80	1.01	-0.63	-0.21	Immediate manager	277	3.32	1.35	-0.31	-1.13
272	3.64	1.10	-0.62	-0.15	Top management	277	2.82	1.30	0.15	-0.09
277	3.57	1.08	-0.57	-0.25	Training possibilities	279	2.66	1.14	0.20	-0.80
279	3.21	1.21	-0.75	1.59	Advancement possibilities	279	2.68	1.18	0.11	-0.85
277	2.87	0.99	-0.14	-0.32	Salary	279	2.77	1.13	-0.43	1.53
n*	M**	SD	γ	K	Facets of org. climate	n*	M**	SD	γ	K
267	3.79	0.97	-0.67	0.19	Internal communication and information sharing	269	3.00	1.25	-0.09	-1.02
271	3.72	0.94	-0.66	0.35	Organization	271	2.94	1.16	-0.40	-0.83
272	3.58	0.91	-0.50	0.24	Familiarity with mission, vision, and goals	274	2.63	1.11	0.20	-0.75
270	3.39	1.10	-0.45	-0.33	Employee commitment	271	2.64	1.18	0.27	-0.75

*Note: *Number of answers. ** 1 – extremely dissatisfied, 5 – extremely satisfied.*

Source: Questionnaire survey, 2022 (see "Method"); calculations by the authors.

Table 4: The Pearson`s correlation matrix of variables

	REORG	OBJECT	SATISF	CLIMAT	DIGIT	GOODG
REORG	1					
OBJECT	0.132	1				
SATISF	0.778*	-0.071	1			
CLIMAT	0.368	-0.342	0.781*	1		
DIGIT	-0.252	0.524	-0.452	-0.244	1	
GOODG	0.120	0.407	-0.156	-0.049	0.874**	1

*Note: *mutual interdependence is characteristic at the level 0.05 ($p \leq 0.05$); **mutual interdependence is characteristic at the level 0.01 ($p \leq 0.01$). Pearson's Correlation test (r) was employed to measure the correlation between the following variables: general assessment of the reorganization (REORG), the objectives of the reorganization (OBJECT), employee satisfaction (SATISF), organizational climate (CLIMAT), digitalization (DIGIT), and good governance principles (GOODG).*

Source: Questionnaire survey, 2022 (see "Method"); calculations by the authors.

The main findings of the analysis of the interviews conducted with four managers and five professionals, taking the findings of the previous quantitative phase into account, were:

- generally speaking, while managers were not more in favor of the reorganization compared to professional workers, they still evaluated the extent to which the objectives of the reorganization had been accomplished better than professional workers, especially with respect to unifying the practice and rationalizing the business processes in the newly created joint organizational units;
- managers' expectations of the reorganization were that they would be able to provide employees with working conditions that would allow them greater time to work with users, which would unify the practices of individual organizational units and the possibilities of developing professional work methods, while professional workers expected more from the reorganization in terms of the possibilities of field work with users and a reduction of administrative burdens;
- both managers and professionals assessed digitalization as mostly positive and necessary and in relation to its effects they largely highlighted the simplified procedures for users, albeit not for the employees who are conducting them;
- employees noted the good interpersonal relationships, working hours, and job stability as key facets of employee satisfaction, and training opportunities as well as satisfaction with the organizations' top management as the most critical;
- employee satisfaction was rated the highest by employees in the newly created joint organizational units, while the least satisfied were employees from previously independent larger institutes, which have now merged, primarily due to the loss of professional autonomy and managerial independence;
- both managers and other employees underscored the lack of a common vision and goals of the newly formed organizations as the most critical facets of the organizational climate following the reorganization, along with the fact that the employees do not (yet) identify with them; and
- both managers and professional workers pointed to the lack of personnel, the administrative burdens, the low reputation held by the organizations in the public, and the limited financial resources as the biggest factors affecting the poor organizational climate and employee satisfaction.

6 DISCUSSION AND CONCLUSION

Although the reorganization of the SWCs in 2018 saw management being centralized and a changed organizational structure, it had no impact on substantive work. Despite being necessary, the reorganization did not achieve the objectives of getting rid of red tape, greater field work, the development of new work

methods and to a certain extent only achieved the unification of practices. Accordingly, SWC employees mostly evaluated it as unsuccessful (RQ1). Compared to professional workers, managers rated individual facets and the extent to which the reform objectives were realized significantly better. This indicates the need for well-considered holistic change management before (planning and organizing), during (leading), and after (controlling) any reform. The role of superior institutions and managers is crucial for analyzing the situation, setting the objectives and purpose of the reform along with the activities and key performances indicators to enable detailed control of the whole reform process, all in collaboration with the employees and users as the main stakeholders, as also stressed by other authors (Carnochan and Austin, 2002; Levin and Baruch Ben-Abou, 2020). This even more implicitly applies in today's turbulent times (Greve *et al*., 2020), especially if management wishes to preserve or even increase levels of employees' satisfaction and organizational climate, with both benefitting users' satisfaction and the long-term effectiveness and efficiency of the social services system, as noted by Boufounou and Argyrou (2022), Gil *et al.* (2023), Myskova (2011), and Schneider *et al.* (2013).

Both organizational climate and employee satisfaction were rated worse after the reorganization than before (RQ2) for each of their facets. It is quite concerning that all four organizational climate facets, indicating the situation after the reform, were given a score of 3 or lower, which means the employees do not feel sufficiently acquainted with information within the organization or that they are sufficiently involved in planning processes, and in turn do not feel committed to the new organizational system. Similarly, all facets of employees satisfaction were assessed lower after than before the reform, especially as concerns the training and advancement possibilities, again showing the need for a different approach by top management while implementing changes (also see Ackroyd *et al*., 2007; Dirzyte and Patapas, 2022; Jordan *et al.*, 2017). The drop in satisfaction was also significant with respect to the tasks and top management. This reveals that there is huge room for improvement for both policymakers and managers on all levels (even in the superior ministries) to plan and perform future reforms as effectively and efficiently as possible.

As expected, Pearson's correlation test showed a correlation between organizational climate and employee satisfaction, as well as employee satisfaction and general attitudes to the reorganization. In contrast, there is no correlation between organizational climate and general attitudes to the reorganization, which may be explained by the mentioned critical facets of the organizational climate, such as being acquainted with the strategic orientations of new organizations and identifying with them. The significant ($p \leq 0.01$) positive correlation between the digitalization of social services and the principles of good governance (RQ3) also stands out. Still, this outcome is not surprising because modern administrative reforms in various fields and countries include e-government and digitalization of public services as one of the central pillars of systemic improvements (Kovač and Bileišis, 2017). The digitalization of social services also increases transparency, participation, responsiveness and, of course, the efficiency of the implementation of activities, which applies in relation to both users and the internal organization of work, and the possibilities of employee participation. This was shown by previous studies conducted specifically for social work centers that examined the importance of the rule of law and other good governance principles, and the relationships between them (Babšek *et al.,* 2020).

Successful change management in organizations requires a strategic approach based on the involvement of employees in all phases of these processes and supported by transparent communication based on the trust of employees towards managers and vice versa (Moussa *et al.*, 2018; Pacheco and Webber, 2016). To increase employee satisfaction, they need to be trained and supported emotionally and professionally to adapt to new roles and processes (Sageer, *et al.*, 2012). According to Schneider *et al.* (2013) this also contributes to the established and well-known system of incentives and rewards, as well as the established mechanisms to provide employees with initiatives and feedback according to the system of a continuous feedback loop. To improve the organizational climate, it is crucial to ensure adequate psychological safety for employees in a changing organizational environment, and the reforms must be aligned with the values and organizational culture of the organization (Moussa *et al.*,

2018). Only in this way can the reforms not only maintain but also significantly improve existing levels of employee satisfaction and organizational climate.

This research had some limitations. It was carried out in Slovenian social services and hence while interpreting and generalizing the results to other arrangements one must take account of the social, cultural, and political environment of the transitional countries of Central and Eastern Europe and the fact that the welfare state and administrative system in these environments are shaped predominantly by the provisions of legislation. The research also focused on employees' attitudes regarding the reorganization, the organizational climate, and their satisfaction. It is known that these phenomena, emphasized in the public sector, are also considerably influenced by other factors, especially stakeholders from the external environment. As a predominantly exploratory study, the research primarily focused on the still unexplored aspects of evaluating a given organizational change and its connection with the organizational climate and employee satisfaction, but not on the influence held by facets of selected phenomena as independent variables on others as dependent ones. Given the cross-sectional nature of the current study, it might be beneficial for further research to take a longitudinal approach in order to examine the development of views on reorganization, organizational climate and employee satisfaction over time. This approach could provide a more nuanced insight into the lasting effects of such organizational changes.

Nevertheless, the results of the study can be generalized to other countries or sectors. In view of the common administrative tradition of the Rule of law and the associated organization of social services, the results are also useful for planning corresponding reforms in the countries of Central and Eastern Europe. Since reforms, employee satisfaction and organizational climate are very current and at the same time important facets of the efficiency and effectiveness of public organizations, the results can also be generalized to other countries in Europe and worldwide. Moreover, the results of this study should be considered not only in social services but also in other public administration structures, as the latter, due to its institutional setting, has different variables influencing employee satisfaction and organizational climate than the private sector, especially given the lack of studies in public administration in this area.

EXTENDED SUMMARY/IZVLEČEK

Temeljni cilj prispevka je predstaviti, kako zaposleni na centrih za socialno delo v Sloveniji ocenjujejo leta 2018 izvedeno reorganizacijo ter opozoriti na pomembnost organizacijske klime in zadovoljstva zaposlenih pred in po reorganizaciji, glede na ugotovljeno povezavo med tema konstruktoma. V raziskavi so bile uporabljene mešane metode, natančneje način zaporednega pojasnjevanja. V kvantitativni fazi je bilo s tem organizacijam prilagojenim vprašalnikom med zaposlenimi izvedeno spletno anketiranje. V naslednji, kvalitativni fazi, so bili opravljeni poglobljeni polstrukturirani intervjuji z vodji in strokovnimi delavci. Rezultati kažejo, da reorganizacija centrov za socialno delo ni bila uspešna, saj zastavljeni cilji niso bili doseženi. Zaposleni so tako organizacijsko klimo kot tudi lastno zadovoljstvo z delom po reorganizaciji ocenili slabše kot pred njo. Najbolj kritična sta bila vidik 'pomanjkanje poznavanja poslanstva, vizije in ciljev organizacij' ter 'pomanjkanje identifikacije zaposlenih z njimi'. Čeprav obstaja pričakovana povezava med organizacijsko klimo in zadovoljstvom pri delu, pa tudi med zadovoljstvom in stališči do reorganizacije, raziskava ugotavlja tudi pomembno povezavo med digitalizacijo in načeli dobrega upravljanja, ki jih zasledujejo te službe. Ugotovitve raziskave lahko bodočim snovalcem politik in izvajalcem koristijo pri načrtovanju prihodnjih reform v socialnovarstvenih organizacijah z namenom zagotavljanja ugodne organizacijske klime in zadovoljstva zaposlenih.

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REQUIREMENTS CHANGE MANAGEMENT: A CASE STUDY OF AN ENTERPRISE SYSTEM IMPLEMENTATION PROJECT

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Abstract

The main theme of this article is the collection, preparation, and improvement of user requirements. The research relies on a case study of a complex ERP project from an international organisation. We proceed from the fact that the development of an individual ERP solution often goes beyond just a single project. Often, the development of the ERP solution continues even after the completion of the individual project. In particular, the article addresses the user requirements and their quality with regard to the requirements engineering process and change management. We discuss the characteristics of adaptive (e.g., agile) and predictive approaches, as well as how they affect the quality of user requirements. We emphasise that it is important for team members to be aware of the substantial impact that well-defined user requirements have on the success of the project. Although we argue that the number of change requests should not be taken as an indicator of project success, we discuss the factors that influence the number of changes during the project and the additional work after the project is completed. We identified two strategies that address the excessive number of requests for changes and additional work. The project team should give more attention to the preparation of high-quality requirements and, most of all, to enhancing their formalised testing and verification processes. Managing changes, especially changes in user requirements, is challenging and critical to project success. Companies should constantly optimise requirements analysis based on lessons learned from previous projects and ensure that past lessons are applied company-wide in future projects.

Keywords: *Change Management, User Requirements, Requirements Analysis, Requirements Engineering, ERP Project Success, Enterprise System*

1 INTRODUCTION

Agile methodologies have spread in software development with the aim of improving the capabilities of software development teams since 2001. Agile methodologies, along with other adaptive methodologies (PMI, 2021), when compared to predictive methodologies, are supposed to enable both quick responses to changes and new demands and ensure that the implemented system does not become rapidly outdated or fail to be implemented in reality (Gonzalez-Barahona et al., 2017). Agile stands for the readiness to embrace change throughout a project. In an agile setting, not only requirements but also the end product, service, or what is considered acceptable release may change (PMI, 2021; 2017).

The predictive approach, which is diametrically opposed to adaptive practices, obviously fueled the expansion of adaptive practices. The predictive, also known as traditional, approach emphasises the importance of thorough planning in early project phases, with nearly any changes in requirements and functionalities in later stages, while adaptive approaches, along with the agile approach, foresee changes in requirements throughout the project and rely on flexible plans and an almost immediate response to changes (IPMA, 2018; PMI, 2021, 2017). Successful projects, particularly in software development, have popularised agile approaches to the point where they are applied without much consideration, even in projects that are less suitable for such approaches than software development projects. Therefore, it is vital to emphasize that the optimal approach needs to be selected with careful consideration of factors such as the characteristics of the product, service, or result; the project; and the organization (PMI, 2021; Fink, 2017). Since it is rare to find a project that is perfectly suited for either a fully predictive or fully adaptive approach, many projects necessitate the application of hybrid approaches. Hybrid approaches provide the opportunity to apply the unique best-fitting combination (PMI, 2021; Wysocki, 2019) of predictive and adaptive approaches to the project at hand.

Businesses invest heavily in the renovation of business processes to adhere not only to increased efficiency but also to the quality of their procedures and final solutions. The context of this research includes two fundamentally different, or even opposing, business cultures. The pharmaceutical industry (Scherer, 2000), characterised by carefully planned long-term drug development, strict control, and rigorous regulatory requirements for the approval of products, differs substantially from the software development industry (Tukel and Rom, 1998; Damian and Zowghi, 2003), awash with new technology, pressured by rapid development, short product life cycles, continuous improvements, and constant updates. Fundamentally different business environments (Iivari and Huisman, 2007) inevitably constitute differences in operations, procedures, and working styles.

The context mentioned is the source of fresh views and perspectives on the central theme of this research, which focuses on change management in developing enterprise systems and enterprise resource planning (ERP) implementation projects. According to Copola Azenha et al. (2021, p. 90), the literature lacks practically oriented evidence that could enrich the discourse regarding hybrid project management approaches fitted to "distinct organisational cultures, specific processes, customer contractual requirements, and project specificities." Further, Theunissen et al. (2022) explain that minimal requirements' documentation, which might arise from implementing agile methodology, does not always contribute to the success of software development. They suggest that the quantity and quality of requirements' documentation should be increased.

In our study, we are interested in what activities could contribute to improving the processes of user requirements analysis and, in particular, the user requirements' change management process in ERP initiatives. The purpose of this study is to investigate how changes in requirements affect project success, as well as to identify the appropriate design of business processes and actions that facilitate rather than restrict the development of a software solution in the best way possible. More concretely, we address not only the questions regarding the choice of project methodology in the context of partnerships, which are based on fundamentally different business cultures, but we also focus on the quality of user requirements and question how constant modifications of user requirements compared to more fixed requirements influence the course of action. Finally, we also discuss the ever-present issue of factors that

influence the number of additional improvements required after implementation, especially in connection with the precise definition of user requirements at the beginning of implementation.

The challenge of achieving the best balance (Ramesh et al., 2010; Rasheed et al., 2021; Mockus et al., 2003) between thorough planning early on in the project and additions to initial planning, for example, at the start of each iteration, is a pivotal point that requires attention in each project and context at hand. Specifically, thorough planning in the early project phases strives to address requirements holistically, prevent major unnecessary changes later in the project, and prevent successive requests for changes after the project's completion. On the other hand, incorporating later additions to the initial planning allows for increased flexibility and prompt response to stakeholder feedback, requirement changes, and emerging market trends. This balancing, along with team coordination (Bick et al., 2017), can bring long-term benefits for ERP implementation success.

2 THEORETICAL BACKGROUND

Implementation of ERP solutions is inevitably linked to challenges in the requirements engineering process. One could hardly find a software development project where requirements were not an issue. According to Sawyer et al. (1997), some of the ever-present major challenges in requirements engineering include inconsistent and incomplete requirements, requirements not reflecting the actual user need, the expensive introduction of any changes after requirements have been agreed upon, and misunderstandings of requirements between team members. The challenges mentioned mostly relate to a traditional point of view, which emphasises the importance of solidly defining the foundations in the early stages of the project, to the extent that the project results allow.

The scientific discourse in which flexibility becomes the cornerstone is based on the well-known adage that "the only constant is change," or, in other words, "changes are constant." Thereafter, scientific discourse on the efficiency of software development projects emphasised the need for the coexistence of both predictive and adaptive (e.g., agile) approaches, which assume flexibility in the foundations of the project throughout the entire course of the project. The challenges in requirements engineering, in particular the trade-off between precisely defining requirements early on in the software development process and using agile methods that pre-assume requirements to change in later project phases, tackle not only the scientific community but also communities of practice such as RESG (n.d.), IREB (n.d.), and INCOSE (n.d.), as well as project management associations such as IPMA and PMI. The present study is the continuation of our previous research on the importance of user requirements for the success of ERP implementation (Fink et al., 2024), but apart from the previous study, it addresses entirely other research questions focusing on changes in requirements.

We further divide the review of relevant studies into several parts. We begin with some basic characteristics and concepts in ERP initiative management and continue to discuss the differences between adaptive (e.g., agile) and predictive project management approaches. Finally, we include a review of previous studies that looked at the requirements engineering process and how to handle changes to user requirements.

2.1 ERP system implementation projects

Organisations strive to increase their efficiency by organising their work into projects that have a clear scope, deadline, and budget. ERP projects, in comparison to other types of projects, require high investments and are usually quite risky. The common goal of ERP systems is to optimise and modernise business processes. ERP projects can include existing comprehensive software solutions on the market, open-source programme solutions, the development of a new comprehensive software solution, or a combination of these. It is not uncommon that the development of a solution goes beyond just one project since ERP system development is usually not limited to a single initial investment in the ERP system but is an ongoing endeavour aimed at improving business processes. Often, the outcomes of the previous ERP projects include the new requirements that form the foundations for the next ERP development project.

As with other types of projects, ERP projects should meet their goals within a limited duration and with limited resources. The success of the project can be judged according to various factors, which do not only include the achievement of the quality of the implementation, the deadline, and the forecast, but rather the success is evaluated on the basis of factors such as customer satisfaction, user satisfaction, frequency of use of the final solution, and last but not least, the benefit of the project is also evaluated from the impact it has on operations, efficiency, and, last but not least, on the company's strategy and long-term development (Fink, 2017). Among numerous success factors on software development projects (Kronbichler et al., 2009; Sudhakar, 2012), proper planning, appropriate change management mechanisms, and efficient coordination importantly contribute to the successful delivery of software solutions.

The optimal project life-cycle, organisation, and project management are often tied to the characteristics and the level of complexity (San Cristóbal et al., 2018) of the final solution, the type of individual project tasks (Baccarini, 1996; Dasović et al., 2020), and the uncertainty regarding requirements (PMI, 2017). The project's complexity is primarily determined by the project's value, the number of stakeholders and team members, the project duration, and the project's technological innovativeness and uniqueness. ERP projects are usually complex and risky. The development of a single solution is usually ongoing and surpasses a single project. For that reason, it is of utmost importance that the processes are designed in such a way that the lessons learned can be applied to follow-up projects (Shanks, 2000). In that sense, knowledge management (Mirić et al., 2020) plays an important role.

ERP projects, whether performed based on predictive, adaptive, or hybrid methodologies, include phases such as requirement analysis, conceptual design, code development, verification and testing, and installation (Kronbichler et al., 2009; Falkowski et al., 1998). Nevertheless, there are several ways that ERP projects are implemented. Matende and Ogao (2013, p. 522), for example, suggest that requirement analysis comes after "system configuration, customisation, data capture, conversion, and rollout." Aloini et al. (2007), in comparison, suggest that strategic planning, requirements analysis, and selection of software are performed during the conceptual phase; software deployment, integration, testing, and stabilisation are performed during the implementation phase; and maintenance, upgrading, new release management, and evolution are performed during the post-implementation phase.

2.2 Adaptive, predictive and hybrid project management approaches

Takeuchi and Nonaka (1986), who first named Scrum, nowadays one of the most popular hybrid approaches (PMI, 2021; 2017), described decades ago that successful companies manage their development processes differently. From that point on, the discourse on how project and process methodologies contribute to efficiency flourished among the scientific community. Many authors, among them PMI (2021; 2017), IMPA (2018), Royce (2009, 2011), and Wysocki, R. K. (2011), contributed to these discussions. It is not a coincidence that agile methodologies quickly expanded and further developed in none other industry but in the software development and product development industries.

Agile approaches, which belong to a group of adaptive approaches that use iterative and incremental approaches (PMI, 2021), are characterized by frequent stakeholder feedback. The adaptive approaches, which fundamentally differ from the predictive, also known as traditional approaches, merely focus on responding to needs as they arise and reacting rapidly to changes in requirements as they occur. They are preferred when requirements are highly uncertain (PMI, 2021) and when it is necessary to embrace and integrate changes due to feedback, new market developments, or new technology developments.

These approaches are characterised by their shorter life-cycle phases (Royce, 1987; Al-Saqqa et al., 2020), iterative planning, and evolving requirements compared to traditional comprehensive upfront planning (PMI, 2017).

In an agile environment, many activities, for example, development and testing, are performed concurrently, whereas in a traditional setting, testing is usually a separate project phase. As we indi-

cated in the introduction, agile is all about the readiness to embrace change throughout a project. Not only requirements may change, but also the end product, service, or what is considered acceptable release (PMI, 2021; 2017).

Whether at the organisational level (Hernaus et al., 2020) or at the project level, agility encompasses somewhat similar guiding principles, such as facilitating responses to change and viewing changes as opportunities (Zhang and Sharifi, 2000). Similarly, the identification of risks is performed throughout a project (Lunesu et al., 2021) compared to the predictive approach, where it is mostly performed during the planning phase. Further, agile and adaptive software development is based on customer involvement and feedback throughout the project, compared to the predictive approach, where customers' input is concentrated at the start and at the end of the project. Moreover, documentation in an agile setting is focused on the essentials (Behutiye et al., 2022) compared to a traditional setting where documentation includes detailed plans and extensive requirements' documentation. The adaptive (e.g., agile) approach is also based on regular review, while the predictive approach is based on timeline tracking. Finally, adaptive and agile teams (Zainal et al., 2020) are often self-organising, cross-functional teams with a high degree of autonomy, while teams in traditional settings have a hierarchical team structure with specialised roles.

Predictive approaches have a long tradition, whereas adaptive approaches emerged later. The agile manifesto, agile values, and agile principles (Agile manifesto, 2001) have triggered further development and expansion of numerous agile approaches, as well as hybrid approaches, which are known to integrate the characteristics of both adaptive and predictive approaches (PMI, 2021; Wysocki, 2019). The adoption of specific hybrid project lifecycles and specific hybrid approaches such as Scrum (Schwaber, 1997), Kanban, extreme programming, Scrumban, Crystal methods, and others (Abrahamsson et al., 2017; Edison et al., 2022; Alqudah and Razali, 2016), has become widespread (PMI, 2017).

The popularity of agile approaches has contributed to a desire to highlight the benefits of agile approaches, such as their flexibility in responding to changes, while shortcomings, such as risk anticipation and a lack of fixed planning that could prevent major unnecessary changes, unexpected costs due to late changes, or additional work in later stages, are frequently overlooked.

PMI (2017) and many other previous studies, among which Wysocki (2020) and Fink (2017) previously recognised the need to tailor specific approaches to particular project attributes. Actually, many software development projects require hybrid approaches that include a unique blend of adaptive and predictive characteristics. The optimal set of predictive and adaptive components (Karlström and Runeson, 2005, 2006; Davis, 2012; Fink, 2017; PMI, 2021; Wysocki, 2023) needs to be determined for the project and context at hand. Factors such as degree of innovation, requirements certainty, scope stability, ease of change, delivery options, risk, safety requirements, regulations (product, service, or result), stakeholders, schedule constraints, funding availability (project), organizational structure, culture, organizational capability, project team size, and location (organization) should be considered (PMI, 2021). The optimisation and fine-tuning of the combination of approaches resulted in many hybrid approaches (e.g., Žužek et al., 2020) that, by nature, combine the characteristics of predictive and adaptive (e.g., agile) approaches (PMI, 2017).

The expectations about the change in requirements (PMI, 2017) are an important factor to consider when developing the best-suited project life cycle. While iteration- or incremental-based agile approaches coincide with hidden and misunderstood requirements, merely iterative or incremental approaches assume that feedback in between enables better further planning of the project (PMI, 2017). The agile approaches are therefore more suitable for projects where there is high uncertainty regarding requirements and it is expected that requirements "will change based on customer feedback" (PMI, 2017). The predictive approaches, on the other hand, are suitable for low-risk serial projects and projects requiring substantial investment. They focus on the fact that the cost of change (PMI, 2021) increases exponentially throughout the project duration. Simply put, the cost of introducing a change increases the later it occurs. Predictive methods are more appropriate in cases where fail-

ure to integrate key parameters, assumptions, and premises related to requirements beforehand or in the early phases would lead to substantial drawbacks. Failure to do so could result in severe irreversible consequences, such as unexpected repair costs, the need to remove previously completed work, a chain reaction of additional changes, adjustments, rework, and additional work, or even jeopardize the system's long-term operation.

2.3 The requirements engineering process

Since the user requirements represent the foundation for an ERP project, they are important not only for the choice of the type of solution but in general for the development of the solution itself. In particular, in an agile setting, the requirements are often underspecified, un-clear, and missing and are the subject of emerging refinement. On the contrary, in a stable setting where requirements are perfectly clear, there is no need to introduce agile components. Therefore, the characteristics of the requirements themselves are also important for determining the set of agile components that should be applied (PMI, 2017) to a particular project.

Requirements engineering is a challenging process that, according to ISO (2018) standards, results in "requirements for system and software products throughout the life-cycle."

This can include their initial definition, analysis, specification, validation (Atoum et al., 2021), prioritisation (Regnell et al., 2001), requirements management, and system modelling (Sommerville, 2009). A widely used taxonomy (Laplante and Kassab, 2022) categorises requirements into user requirements, system requirements, and design specifications (Sommerville, 2005), based on their level. Essential for acceptance testing, user requirements often include conceptual papers and user stories. They outline the specific functionality that the system should offer to users. They describe desired system behaviour in a manner that is comprehensible to the business user, from their perspective.

System requirements, often referred to as functional specifications or technical annexes, are essential for conducting integration testing (Laplante and Kassab, 2022). These requirements outline the behaviour of a system, typically in relation to functions that have been previously defined in user requirements. Design specifications, derived from system requirements, are essential for conducting unit testing (Laplante and Kassab, 2022).

A frequently used taxonomy categorises requirements into functional, nonfunctional, and domain requirements, depending on their specification types. Functional requirements delineate the specific services that the system is expected to offer and its corresponding responses to the inputs it receives (Laplante and Kassab, 2022, p. 6). High-level functional requirements align with the user's needs, whereas detailed functional requirements align with the system's requirements (Laplante and Kassab, 2022).

The system is defined not only by its functionalities but also by its nonfunctional behaviour. The NFRs (Non-Functional Requirements) (Laplante and Kassab, 2022; Rahy and Bass, 2022; Behutiye et al., 2020, 2022; Jarzebowicz and Weichbroth, 2021; and Karhapää, 2021) encompass a range of issues including security, reliability, dependability, reusability, maintainability, performance, usability, testability, interoperability, and constraints. Domain requirements encompass several aspects, such as introducing new functional requirements (FR), imposing limitations on existing FR, or determining the specific functions inside a given application domain (Laplante and Kassab, 2022).

Requirements are multi-layered and are reliant on the characteristics of the product and the source of requirements (Chemuturi, 2012; Regnell et. al., 2001; ReqView, n.d.). The identification of the higher-level requirements leads to the approval of a project in the first place (Matende and Ogao, 2013). More detailed requirements' documentation and lower-level requirements can be gathered and analysed throughout the entire project duration and even after the project's completion. Different techniques for conducting the requirements analysis (Köse, 2019; Nuseibeh et al., 1994; McGraw and Harbison, 2020) are more in line with either adaptive (e.g., agile) or predictive methodologies, or a combination of those. As the project management processes shall be suited to the project characteristics (PMI, 2017), so should the appropriate tech-

nique for requirements analysis (Guillemette et al., 2021). The complexity of the project itself is important for the complexity of the requirements engineering process. Nevertheless, it is meaningful that Theunissen et al. (2022), who investigate practical applications of agile methodologies, suggest there is a need for increasing the quantity and quality of requirements' documentation.

In the process of requirements engineering, a team should certainly consider that requirements need to be aligned, communicated, and prioritised (Rengell et al., 2001). Any miscommunication or misalignment can seriously jeopardise the achievement of the goals, so it is necessary to pay a lot of attention to the fact that the requirements are communicated in a way that everyone understands them equally (Robertson & Robertson, 2012).

2.4 Change management

The ever-changing nature of work and the rapid technological changes made practitioners and researchers realise that projects in which project goals are not clearly defined and the project activities are uncertain require approaches that, in their nature, pre-assume greater flexibility and embrace changes. The matrix of Wysocki (2011, 2014) and the Stacey complexity model (Stacey et al., 2000; PMI, 2017) support this notion by showing that the level of uncertainty greatly affects how the project should be approached. Despite the differences between project methodologies, any project and requirements engineering process must include a change control process, which ensures that any additions are "identified, documented, approved, or rejected" (PMI, 2021), as well as change management, "a comprehensive, cyclic, and structured approach" (PMI, 2017, p. 164) that embraces practices, skills, and techniques for transforming people, groups, activities, projects, or organisations to another state. Whether in a predictive or agile setting (L'ecuyer and Ahmed, 2016), where change is the only constant, it is important to evaluate the added value and anticipated investment associated with changes to be implemented. An efficient change control system (PMI, 2021), which sifts through meaningful changes through a formal approval process, ensures that the acquired value outweighs the resources, effort, and costs invested. Besides, it also ensures that "scope creep" (PMI, 2021) is avoided, especially in predictive settings, meaning that additions to scope or requirements should result in adjustments to the schedule, budget, and resources. Adequate planning and adequate risk anticipation can prevent overload of changes and hectic schedules, as well as planning of the activities that are likely to change during the course of the project. Efficient planning, change management, and coordination are considered important success factors.

In particular, agile approaches often closely intertwine with concepts of change management and are fundamentally based on requirements' uncertainty and the technical degree of uncertainty (PMI, 2017). Agile methodologies begin with less-defined requirements and include more iterations of shorter duration, each of which begins with a requirements analysis. In agile projects, even the project scope may be subject to change. During subsequent iterations, changes and details are added.

Predictive approaches to managing projects are based on quite the opposite: a clear definition of project goals, project activities, and, to the greatest degree possible, the elimination of all unknowns. Predictive approaches devote more attention to requirements analysis, detailed planning, and anticipation of risks and changes during the initial phases. This does not mean, however, that the predictive methodology does not foresee the possibility of introducing changes during the project, including "frequent reviews, change control mechanisms, and replanning between development phases" (PMI, 2021), but it does so in a clearly defined setting with a relatively stable scope.

The changes, especially those introduced in later project phases, can drastically increase duration, waste resources, and compromise the scope of any project. Though in some projects, particularly those led predominately based on predictive approaches, it might be impossible or extremely costly to introduce changes after the work has already been performed. However, requirements' documentation can be subject to change even in predominately traditionally led projects. This is particularly true for complex and high-risk projects such as ERP.

Project teams must decide how much time to devote to the requirements engineering process during the early stages of the project. In this regard, agile and iterative practices rely on shorter increments through which partial but continuous improvement of user requirements gradually evolves. The changing nature of work and the rapid pace of technological change stimulate a high demand to change and upgrade more detailed user requirements on a regular basis (Al-Ghamdi and Saleem, 2018). Predictive methodologies, on the other hand, are founded on a clear and precise description of user requirements during the project's early stages. In predictive methodologies, user requirement analysis is typically developed in greater detail and finalised earlier in the initial project phases. More attention is devoted to immutably determining key requirements, coordinating the understanding of key requirements among team members, and defining the specialisation of team roles.

However, even in predominantly traditionally led projects, the user requirements can be subject to change (IPMA, 2016), and on the other hand, even in predominantly agile-led projects, the need for clearer definition, documentation (Theunissen et al., 2022), and communication of user requirements exists.

3 RESEARCH QUESTIONS

We divide research questions into two parts: 1.) the requirements engineering process and 2.) change management.

3.1 The requirements engineering process

User requirements' documentation can be created using a variety of methodologies, best practices, and industry recommendations. We're curious about how the project management methodology influences user requirements' analysis. What are the characteristics of the requirements' gathering and analysis process? The company's internal regulations frequently determine the choice of a particular methodology and modifications to it. We want to inquire if the methodology used to gather and analyse user requirements affects the quality of the requirements' documentation and the final project outcome.

First research question (RQ1): *How does the appropriate combination of adaptive (e.g., agile) and predictive waterfall methodologies affect the quality of requirements' documentation and the final outcome of an ERP system implementation project?*

Second research question (RQ2): *How does the level of awareness in the organisation and project management about the importance of quality user requirements contribute to project success?*

3.2 Change management

We investigate whether the fact that changes to user requirements' documentation are introduced only during the first phases of the project rather than throughout the entire duration of the project affects the project's final outcome. We are particularly interested in whether change requests contribute to project success.

Even experienced teams find it difficult to accurately state all of the requirements prior to the start of the project and to capture all user experiences and user stories in advance. This would necessitate the participation of a large number of users, which is not only difficult to coordinate but mostly time-consuming. As a result, understanding that changes during projects can improve project outcomes, that changes should be seen as enhancements and additions rather than corrections of past errors, and that incorporating change management processes benefits projects is critical for any project, regardless if it is predominately applying predictive or adaptive (e.g., agile) methodologies.

Third research question (RQ3): *Do constant modifications and improvements to user requirements' documentation throughout the project, as opposed to fixed or static requirements, increase the likelihood of meeting project goals?*

When the project's scope, goals, and high-level requirements are lightly defined, it not only impacts the volume of changes to tasks within the project but also the volume of tasks that must be performed after the project's completion or during the post-implementation phase. Especially in an agile environ-

ment, this can lead to an excessive volume of change requests during the project and additional improvements requested after implementation.

Fourth research question (RQ4): *What strategies may a project team employ to address an excessive volume of change requests during the project and additional improvements requested after the completion of an ERP system implementation project?*

4 RESEARCH METHODOLOGY

As is common in IS and software engineering research (Runeson and Höst, 2009), an exploratory case study methodology is applied. The ERP system implementation project was meticulously chosen via judgmental sampling. The main reason for applying judgmental sampling is that the unique insights can be rightfully presented by important project stakeholders with specialised, unique expertise. Since ERP implementation projects are often unique, complex, and risky, information asymmetry is often prevalent, meaning that only decision-makers with direct involvement may be able to provide nuanced insights relevant to the research. Judgmental sampling enables a deeper and more comprehensive understanding of the complexity, the associated risk, and the dynamics of changing requirements in an ERP project. To avoid the possible shortcomings of judgmental sampling, we carefully selected the interviewee, a project manager who has a wide perspective, is a decision-maker, and has an overview of the entire project. A project manager who works for a large, international company and has rich experience in leading projects for the development and improvement of enterprise system solutions was the best suited person to provide us with the insights.

The research questions were derived from the research gaps that were found during the literature review. The measurement instrument was specified in advance. We applied three different types of data collection methods: collecting information through a semi-structured interview based on open questions, collecting further details about the key project characteristics through a short survey, and forming the study itself through an extensive literature review. The primary data are qualitative in nature and were obtained at a particular time. The interviewee and interviewers made an oral agreement outlining the confidentiality requirements. Two researchers conducted a one-hour interview with the project manager. Open-ended questions were used to elicit specific data. To minimise the impact of prior experiences or assumptions of individual researchers, all research participants carefully chose and prepared the questions in advance. After the interview, we prepared and reviewed the transcripts to identify and select the findings, and we organised a discussion about the theoretical and practical ramifications of the research questions. The recommendations (Runeson and Höst, 2009; O'Brien et al., 2014) and examples (Karlström and Runeson, 2006; Andersson and Runeson, 2007) for reporting qualitative research, as well as the recommendations for interview question preparation and qualitative interview strategies (Harvard, n.d.), are followed as closely as possible in the preparation of the qualitative research. Throughout the paper, we support the discussion and conclusions with quotes. With that, we enhance our comprehension of prevalent practices and methodologies applied in ERP projects that facilitate the achievement of higher-quality UR.

When assessing the validity of the study, it is reasonable to consider that this research primarily represents the viewpoints of a customer of an ERP system. We did not interview other project stakeholders, such as the software company, internal and external team members, supervisors, or users. We did not collect archival data like process models or specifications. However, by carefully selecting the interviewee, we partially addressed reactivity, researcher bias, and respondent bias, which, according to the Lincoln and Guba model (Robson, 2002; Karlström and Runeson, 2006), represent possible threats to validity. Since it is challenging to ensure the validity of findings based on judgmental sampling, our research also includes limitations such as limited generalizability, challenging assessment of representativeness, and challenging validation of results.

5 CASE STUDY

In our particular case study, the estimated cost of the upgrade ERP system implementation project ranged from 5 to 10 million euros. After 18 months, the initial solutions went live. Although

the schedule and the use of other resources diverged from the original plan, the system's successful implementation was not in any way jeopardised. Both the project's deadline and budget were met. Different modules, or subsystems, make up ERP systems. As shown in our case study, the modernization, renovation, and reengineering of important business processes in an enterprise system is a complex project requiring a sizable investment and the involvement of numerous stakeholders. The final solution had an impact on more than 1000 business users, and the internal core project team consisted of 20 to 25 individuals. The project involved a large number of external parties, including about five different businesses and additional independent contractors.

The primary objectives of the project were to streamline, modernise, standardise, and improve the intricate process of product release. The decision to release a product must be made after gathering a lot of data and checking a lot of control points. The objective of the project was to make it possible for data to be automatically gathered from various systems and sources and displayed on a dashboard. Decision-making is made easier and more quickly when information is accessible at a glance in one place.

The project was successful in terms of user adoption and satisfaction. The internal staff is very pleased with the software solution. While acknowledging that there is still room for improvement, the project manager is generally pleased with the solution, the collaboration with external contractors, and the collaboration within the internal team, as well as with the professional competence, technical expertise, and process knowledge of the internal staff. The successful implementation of an ERP system allowed us to identify good practices and criteria leading to success, as well as strategies to overcome challenges ERP projects might face. These are the reasons that led us to choose this project as a case study. In the continuation of the study, we provide further insight about the particular project methodology and requirements change management by supporting the discussion around the research questions with quotes.

5.1 The requirements engineering process

The project team, under the leadership of the customer of the ERP system, adjusted project management methodology to the specific character of the project (RQ1). Although it followed the company's general guidelines for project management methodology, it developed specific project methodology for the project. The validation plan specified the specific methodology. The customer, on the one hand, put an emphasis on executing a lot of the planning activities before the project started, which is typical of predictive approaches. The project, on the other hand, was organised in iterations, or rolling waves, which means that activities within work packages were defined in greater detail as the project progressed. The project team combined predictive and adaptive methodologies but did not use ordinary sprints, scrums, or strictly predictive approaches. A clear scope and thorough specification of business requirements defined in the early project phases contributed greatly to the overall successful implementation of the solution.

> *"The three main project packages, design, build, and testing, were performed more or less in parallel,"* says the project manager. "*The activities were intertwined. This flexible approach was defined in the validation plan from the very beginning.*"

The planning process and requirements analysis included several rolling waves. Additional plans were developed after the first wave. A roadmap of a product release process with steps was an important input.

Some approaches in the very early stages of custom development, for example, included requirements that were then reviewed and signed off on before being handed over to the developers to develop the software. The requirements for the portion of the project that included standard solutions were not signed off on. Instead, they reviewed and signed off on the solution after it had been tested and approved informally. Furthermore, while the project was based on some high-level documents, the team did not wait for all tasks to be completed and compared the API documentation to proceed. Instead, the activities were carried out simultaneously.

Another aspect that we investigated was the level of awareness about the importance of quality user requirements (RQ2). The project manager stressed several times during an interview that the business requirements are a starting point and that it is crucial that IT and other experts understand the needs of the users. It is very important that the IT team members understand the requirements of the business team members, which are the primary drivers. Regardless of the context or type of project, understanding business requirements is a good place to start.

5.2 Change management

Our research supports the notion that managing changes, particularly changes in requirements, is the biggest challenge of ERP projects that strive for a high degree of user adoption and, on average, satisfied users (RQ3).

> In our specific case study, the project manager emphasises that the customer's *"expectation was never that the implemented system would represent the final solution."*

The high number of change requests to further improve the process during the project implementation and after the system implementation was officially completed is a reality that the customer acknowledged from the elaboration of the project onwards. In the future, they want to further improve and develop the product release process. The team gained important experience, which they made good use of during the post-implementation improvement of the processes. The high number of change requests in no way threatened the successful implementation of the system. Nevertheless, the manager acknowledges that the number of change requests could be decreased to some degree sooner. They consider the process to be a living organism that can always be improved.

The general scope of the project and high-level requirements were clearly determined early on, but after the conceptual design phase, an updated version of the user requirements' documentation was prepared. Throughout the entire project, they strived to optimise the requirements, and they continue to do so even during the post-implementation phase. After the detailed design documentation and development, the system demos were performed. During system demos, they sometimes realised that *"the requirements should be rephrased or that some important thing needs to be added."* The collaboration between IT and business team members was very close, and discussions about the updates took place almost throughout the entire project.

"The change requests were quite intense. In certain areas, the solution and the timeline have changed substantially," said the manager. The project changes made during the course of the project had an impact on the scope, the timeline, and the use of resources. However, each change was carefully approved and introduced in a controlled manner. For example, the system integration issue that occurred later in the project automatically triggered the need to add changes to the high-level requirements' documentation. The changes to the documentation were added up until the testing phase. Even after implementation, there are still requests for changes. As a consequence of the changed timeline, the system integration was late, and some projects that were performed in parallel on other systems had to be temporarily stopped. Nevertheless, the successful implementation of the system was in no way compromised.

According to the manager, the IT team may also be the one to initiate changing user requirements, not just the business part of the team. Especially when IT professionals recognise that some solutions may have a negative impact on end users or work better in another way. In that case, the team comes together to discuss how user requirements can be adjusted to improve the impact on the end user. In such a case, the team needs to work together to discuss these changes. Depending on the size of the impact of a change, the business change manager then coordinated the discussion and gathered feedback about the impact of user requirement changes. In the event of a change, users are notified and asked to provide feedback within a week. Communication with end users was also intense during requirements analysis and pilots in partner companies. The business process owners gathered user stories and feedback from the end users. During the pilots, one or two members from each pilot site joined the core team.

A change request was usually first coordinated between the person who started the change and the company's project management. After internal alignment, the project manager started to negotiate the change with the software company. With each request for a change, the agreed-upon project scope could be delayed and/or cost more than originally planned. So, compromises had to be made so that extra requests for changes didn't cause big changes to the agreed-upon project scope but represented small improvements to the quality of the processes. Some change requests were put on hold and added to the backlog for implementation within the next releases of the software since delaying the project was not an option. It was crucial to develop a suitable business solution by the agreed-upon deadline so that businesses could gain benefits as soon as possible and the project would not get cancelled. Because of this, everyone agreed that further software releases would include more process optimisation.

The project manager adds that, of course, the process *"has to be further improved and enhanced based on feedback"* obtained during the post-implementation phase. Furthermore, each product release represents an opportunity to find new ways to improve the process. The fact that the requirements are constantly optimised and gathered is important for future projects as well.

On the other hand, the project managers clearly stated that some change requests during the project as well as additional works requested after project completion could be avoided and addressed earlier on during the project (RQ4). This proves that it is challenging to find the right balance between predictive and adaptive approaches to planning, even in otherwise successful ERP system implementation projects. According to the assessment of the project manager, the project faced too many change requests. The users who are invited to provide feedback on partial solutions were reluctant to speak out or to provide comments on the solutions that were developed. Therefore, the team readily implemented some improvements to avoid as many change requests during the project and the post-implementation phase of this or other projects. It became clear that the testing procedure contributed to the change management project and that the manager realised that improving testing and, in particular, the validation process could yield even more favourable results.

> *"We plan to perform the rollouts at other sites. We have improved and will continue to improve the validation process. We formalised the process of validating the functionalities by introducing checkpoints. They must accept the solution from the start. That way, we can be certain that they are completely satisfied with the solution provided for each functionality. During the post-implementation phase, we began collecting and evaluating their major pain points. That is something we are still working on. We intend to improve the system and add improvements so that users can truly benefit from the new system."*

6 DISCUSSION

The paper addresses the requirements engineering process and change management, which we further discuss considering both the theoretical and practical ramifications. We round off the discussion with limitations and future research.

6.1 Theoretical contributions

The presented case study is an excellent example of high customer involvement in the development of an ERP system. The customer was not only fully involved throughout the project but also took on the leadership and coordinated project partners and activities. In our case study, there was no issue with lack of customer involvement, their inability, or non-alignment that was observed by Ramesh et al. (2010) on some other agile-based software development projects. Having a competent customer who is able to monitor the course of the project proved to be an important success factor. In large part, the customer determined not just the team culture but also the project methodology. The project team established its own unique approach to project methodology that was derived partly from the customer company's project management standards and involved a blend of predictive and adaptive methodologies. This had an effect on the quality of the requirements' documentation and the final

outcome. A unique combination of predictive and adaptive elements was applied to address the needs of the project, the characteristics of the final system, and the characteristics of all involved organisations to the best degree possible (RQ1). This has worked well since it addressed the requirements of the company, an international organisation working on large-scale projects, the characteristics of the particular process and the ERP system itself, as well as the requirements of the pharmaceutical industry and its standards. It is also in line with the challenges that often arise when applying agile methodologies to large software development projects (Alqudah and Razali, 2016). Further, the case study presented is also an excellent example of how two fundamentally different business cultures, the pharmaceutical and IT sectors, can effectively work together, given that a customer takes the lead in how the project should be approached.

The literature shows both theoretical ERP implementation models and standardised ERP implementation steps applied in practice (Lutovac and Manjolov, 2012), as well as examples of how agile methodologies were incorporated into ERP implementations (Nagpal, 2015; Kraljić & Kraljić, 2020; Kraljić et al., 2014) and large software development (Alqudah and Razali, 2016). However, the majority of prior research predominantly focuses on the perspective of software companies, such as SAP, Oracle, or others, with limited consideration given to the viewpoints of customers of ERP systems.

The case study confirms the existing findings regarding the importance of selecting the right blend of predictive and adaptive methodologies for managing projects that is best suited for a particular project. The project teams are constantly choosing between the thoroughness of an initial plan and the additions to the initial plan that they are willing to make later in the project (Rasheed et al., 2021). On the one hand, it is known that it is more difficult, challenging, and time-consuming to introduce changes later during the project. On the other hand, teams under time pressure want to begin developing solutions as soon as possible. Moreover, to further improve and develop the plan, the team would require more information, which can only be obtained once the development phase has already started. As a result, project phases frequently run concurrently. Though the lack of time should not compromise the quality, perfecting and fine-tuning the initial plan in the initial project phases or before the start of the project takes valuable time. Plan additions and details can be added later during projects. The compromise between thoroughly preparing the plan as early as possible and the number of additions to be added later is frequently context-specific. The characteristics of the project and of the project activities can be crucial for determining the best combination of predictive and adaptive approaches in a concrete project. Predictive and adaptive approaches have certain advantages and disadvantages. Even if adaptive approaches regard changes as opportunities, it might be hard, if not impossible, to introduce some major changes to the scope of the project later in the project due to many reasons, such as financial ones. Finally, we can draw the conclusion that both the internal company's project management regulation and the project specifics have an impact on project methodology.

Additionally, we can conclude that it is, regardless of the methodology applied, very important that the high-level requirements are agreed upon in advance, before the start of the project. The presented case study showcases this. A clearly defined scope and high-level business requirements guaranteed the success of the project, which was enhanced by the active involvement and assertiveness of users in activities such as requirements' collection, analysis, testing, and verification. Similarly, even when changes to requirements are allowed in later project phases, as is typical for agile approaches, it is crucial for the project team to be aware of the importance of high-quality business requirements (RQ2), and any miscommunication between members of the IT and business teams should be resolved as soon as possible to ensure that requirements are properly documented.

The rationale behind this may lie in the fact that, in any case, there is a high risk of requirements changing in ERP projects (Sudhakar, 2012). This is due to several reasons, such as the fact that the implementation of enterprise systems typically results in a substantial shift and transformation in the execution of processes, and it in general entails the modernization of processes. Furthermore, since information technology supports processes that behave as living organisms and adhere to the tenet that you lose it if you don't use it, they must constantly adapt and advance.

Change management is critical in ERP projects not only during the conceptualization and implementation phases but also after the project has been completed, during the post-implementation phase. Change management on an ERP project is inextricably linked to ongoing requirements analysis. The efficient change management process associated with requirements is critical for improving the system and information quality, especially in complex projects such as ERP projects with a large number of high- and low-level requirements and a large number of stakeholders.

Based on the case study presented, we can conclude that the companies should constantly optimise their requirements analysis based on lessons learned from previous projects and ensure that past lessons are applied company-wide in future projects (Al-Ghamdi and Saleem, 2018). The willingness of a customer to invest in further upgrades can speak about the success of the project, since customers who do not see benefits in the new system would be unwilling to undertake further upgrades (Markus et al., 2000). As a result, we find that modifications and improvements to user requirements' documentation throughout the project can increase the likelihood of meeting project goals (RQ3), prevent possible unnecessary changes, and incorporate some work that would otherwise be performed outside the project either as additional work or within the new project. The testing, and specifically the validation process, was shown to have an important impact on the change management process. Enhancing the testing and its early introduction may further improve the already positive results.

The volume of change requests during the project and post-implementation is not always an indicator of project success, but sometimes quite the contrary. Nonetheless, by actively involving all project participants throughout the project, many unnecessary post-implementation changes can be avoided. Project members, particularly business participants, shall actively participate in the process of defining and reviewing business requirements. Overall, we identified two strategies, which the case study exemplifies and a project team employed to address an excessive volume of change requests during the project and additional improvements requested after the completion of an ERP system implementation project (RQ4): high-quality requirements and, most of all, a formalised testing and verification process. We further expand on these very practically-oriented strategies in terms of their practical implications.

6.2 Practical implications

Before we further elaborate on the aforementioned strategies, let us summarise several further key findings that are of importance with respect to the practical implementation of future ERP systems.

First, customer involvement, monitoring, and possibly leadership of ERP system implementation are highly advised. Then, the specific project methodology that includes a blend of predictive and adaptive methodologies should be determined by the project team, based on the characteristics mainly of the customer's organisation where the ERP system is to be implemented, but also on the characteristics of other project stakeholders, the specific processes, and the ERP system itself.

Frequently, important factors such as project attributes, project tasks, customer and stakeholder organisation, and key team members are insufficiently considered in practice when determining the most suitable project life cycle. However, these factors are crucial in determining the appropriate approach to project management. Not all sizes fit all. As the leadership style should adapt not only to the situation but also to the personal characteristics of the follower and leader (Griffith et al., 2018) and the research methodology to its purpose (Runeson and Höst, 2009), so should the project methodology to its project. Customers of an ERP system should not get caught in a trap by expecting that the software company will take the lead in proposing the methodology best suited to their software solutions.

As observed in our case study, the customer took charge of the implementation process, led the main development initiatives, and controlled the course of events. Unless the customer is active and alerts the software company of the necessary adjustments, the course of events can go in the wrong direction. The role that customers play in the ERP implementation project can be crucial for its success. When the customer is actively resolving the

problems that arise on the project together with the software company, has the majority of the thread in his hands, is the one who has constant control and preview of the implementation, holds a decisive role, and makes key decisions in agreement with the software company, the ERP implementation project is much more likely to be successful.

A well-defined scope and comprehensive high-level requirements, as well as the active participation and assertiveness of users in activities such as requirements' gathering, analysis, testing, and verification, can further improve the project's outcome. In practice, however, the initial requirements and final result may deviate. It may happen that high-level requirements approved initially by the customer do not include the whole scope they should, or that the customer confirms a too-complex solution or an add-on that brings little benefit compared to the additional work it requires and the substantial increase in complexity of the overall model. In such cases, the early inclusion of testing might be particularly beneficial. Early testing, based on a clear list of testing activities derived from the requirements list, might assure prompt alerts about the things that should be included in the requirements but were not or about things that are just redundant since they bring too little benefit.

To address an excessive volume of change requests during the project and additional improvements requested after the completion of an ERP system implementation project (RQ4), project teams should give more attention to the preparation of high-quality requirements and, most of all, to enhancing their formalised testing and verification processes. *High-quality requirements:* Even when agile approaches are applied, it might be challenging to implement changes after the key building blocks of the system have already been determined and the architecture of the enterprise system is set. Therefore, it might be risky to start the development before all key building blocks are determined and included in the initial plan. Further, due to time constraints, the testing of partial solutions against the requirements might be limited. Similarly, the opportunities for fine-tuning and preparing a more user-friendly solution might not be fully realised due to time pressure. Therefore, we advise that at least high-level requirements are clear to all stakeholders in advance and that awareness about high-quality requirements is raised. *Formalised testing and verification processes:* In the absence of formalised testing and verification processes introduced early on, the development might continue too long in the wrong direction, and many opportunities for improvement and fine-tuning during the development phase might be missed. Feedback on partial solutions is crucial since it ensures an appropriate course of development. Therefore, formalising the testing and verification processes could contribute to reducing the number of changes in later stages, after the implementation of the solutions.

6.3 Limitations and future research

ERP implementation teams should carefully examine what is best suited for the project at hand rather than applying a methodology similar to those adapted by organisations that have previously successfully implemented ERP systems. It needs to be mentioned that, besides the selected project and the project manager, additional relevant projects or project team members were not included in our sample. Even if the exploratory study enables qualitative, in-depth insight into the dynamics of a particular case study, it is possible that parts of the conclusions are only valid for the particular project. As mentioned previously, it is challenging to ensure validity, generalizability, or representativeness based on judgmental sampling.

7 CONCLUSION

This case study-based qualitative research investigates the requirements engineering process and the requirements' change management process in an ERP system implementation project. In relation to the requirements engineering process, we investigate the use of adaptive (e.g., agile) methodologies versus traditional, predictive waterfall methodologies and the importance of user requirements in an ERP project. The project team constantly chooses between the thoroughness of an initial plan and the additions they are willing to make later in the project. Agile methodologies offer both benefits and drawbacks, but even in these projects, it may be challenging to implement substantial changes to the initial project's scope. The characteristics of the project and project activities

can determine the best combination of adaptive (e.g., agile) and predictive approaches for a concrete project. Further, we assert that the level of awareness in the organisation and project management about the importance of quality user requirements contributes to project success.

ERP projects that aim to optimise and modernise business processes are complex and require constant change management to improve system and information quality. We compare constant modifications versus fixed requirements and address the strategies that influence the volume of change requests during and after the system's implementation. Managing changes, particularly those in user requirements, is the biggest challenge for ERP projects that strive for a high degree of user adoption and satisfaction. In the case study, the project manager acknowledges that the customer's expectation was never that the implemented system would represent the final solution. Moreover, a clearly defined scope and well-articulated business requirements ensured the project's success. User participation and outspokenness during requirements gathering, analysis, testing, and verification are important factors that contribute to the effectiveness of the process. The factors that influence the number of change requests during the project and the post-implementation phase include awareness about the importance of high-quality requirements and formalised testing and verification processes. Without formalised testing and verification processes, development may continue in the wrong direction, which causes additional change requests in later stages. Though the number of change requests during post-implementation is not always an indicator of project success, by actively involving all project participants throughout the project, many unnecessary post-implementation changes can be avoided.

EXTENDED SUMMARY/IZVLEČEK

Članek obravnava zbiranje, pripravo in razvoj uporabniških zahtev. Raziskava sloni na študiji primera kompleksnega ERP projekta v mednarodni korporaciji. Izhajamo iz dejstva, da razvoj posamezne ERP rešitve pogosto presega en sam projekt. Pogosto se razvoj ERP rešitev nadaljuje tudi po zaključku posameznega projekta. Osredotočamo se na zahteve uporabnikov in njihovo kakovost predvsem iz vidika procesa inženiringa zahtev in iz vidika managementa sprememb. Razpravljamo o značilnostih adaptivnih (e.g., agilnih) in predikativnih pristopov ter o vplivu teh na kakovost uporabniških zahtev. Poudarjamo, da je pomembno, da se člani tima zavedajo pomembnega vpliva, ki ga imajo dobro opredeljene uporabniške zahteve za uspeh projekta. Čeprav trdimo, da število zahtevkov za spremembe ne bi smeli pojmovati kot kazalnik uspeha projekta, razpravljamo o dejavnikih, ki vplivajo na število sprememb tekom projekta in na dodatno delo po zaključku projekta. Prepoznali smo dve strategiji s katerimi lahko vplivamo na preveliko število zahtevkov za spremembe in dodatna dela. Projektni tim bi moral več pozornosti posvetiti pripravi visokokakovostnih uporabniških zahtev in predvsem izboljšanju formaliziranih procesov testiranja in verifikacije rešitev. Obvladovanje sprememb, zlasti sprememb uporabniških zahtev, je bistveno za uspeh projekta. Podjetja bi morala nenehno optimizirati analize zahtev na podlagi izkušenj, pridobljenih iz prejšnjih projektov, in zagotoviti, da se pretekla spoznanja uporabljajo v celotnem podjetju v nadaljnjih projektih.

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MANAGING PARADOXES IN AND ACROSS ORGANIZATIONS

7th International Conference on Management and Organization:
MANAGING PARADOXES IN AND ACROSS ORGANIZATIONS

Belgrade, Serbia (June 20-21, 2024)

Conference recap

The 7th International Conference on Management and Organization, themed "Managing Paradoxes in and Across Organizations," took place in Belgrade, Serbia, on June 20-21, 2024. This esteemed gathering brought together leading academics, researchers, and professionals from across the globe to explore the intricate and multifaceted nature of organizational paradoxes. The conference opened with a vibrant registration and networking session, setting a dynamic tone as participants mingled over coffee, fostering connections that would enrich discussions throughout the event. The opening ceremony in the historic Professors' Hall saw organizers' representatives, including Žaklina Stojanović, Miha Škerlavaj, Matej Černe, Ana Aleksić Mirić, and Tomislav Hernaus, set the stage for the engaging sessions to come.

Day one featured insightful keynote presentations, each addressing key aspects of paradoxes in the organizational context. Alexander D. Stajković captivated the audience with his exploration of paradoxes as drivers of social change and their potential to empower women leaders, particularly during crises. Arnold Bakker followed with an engaging discussion on job demands-resources theory, examining the delicate balance between organizational pressures and the resources available to employees. Rounding out the morning session, Jelena Zikic delved into the evolution of career structures, highlighting the shift from traditional hierarchical careers to more fluid, nomadic trajectories, prompting reflection on the implications of these changes for organizational and individual identity.

After a lively lunch and a spirited football match between Slovenia and Serbia, which concluded in a 1:1 draw, participants reconvened for the afternoon sessions. Methodological workshops led by Ivana Milošević and Ivan Zupic offered attendees hands-on experience with qualitative research methodologies and computational text analysis. These sessions provided valuable insights into the tools and techniques that can enhance research in the field of management and organizational studies. The first day wrapped up with a delightful dinner, allowing attendees to continue their discussions in a more relaxed setting, while further building relationships and exchanging ideas.

Day two began on a refreshing note with a morning exercise session led by Tamara Stankovic, which incorporated positive affirmations to inspire participants for the day ahead. The plenary sessions

featured esteemed speakers who examined paradoxes through diverse lenses. Miguel Pina e Cunha's keynote, titled "Organizational Paradox: An Emotions View," explored how emotions intersect with organizational paradoxes, emphasizing the nuanced role of emotional dynamics in shaping organizational behavior. Medhanie Gaim offered another compelling session with "Exploring the Transcendent and the Dark Side of Organizational Paradoxes," which illuminated the often-overlooked challenges and opportunities within paradoxical organizational dynamics.

A special Academy of Management Community Session added an extra dimension to the conference, as AOM President Sharon A. Alvarez, CFO Marko Vukosavovic, and Ambassador Milorad Novicevic led a discussion on future directions within the management community. This session provided an invaluable opportunity for attendees to engage directly with leaders in the field, gaining insights into the evolving landscape of management and organizational research.

The conference concluded with an awards ceremony led by Nicola Cangialosi from the student awards committee, alongside Predrag Bjelić, Chairman of the Doctoral Studies Committee at the University of Belgrade, and SAM President Metka Tekavčič. Recognizing the achievements of emerging scholars, the Best Student Paper Award was presented to Sara Melkić for her outstanding research. Additionally, Lorena Pikl received the award for Best Scholarly Impact, Maša Košak for Best Conceptual Relevance, and Jure Andolšek for Best Empirical Execution. These awards celebrated the innovative contributions of young researchers, underscoring the conference's commitment to fostering new talent within the management field.

Reflecting on two days filled with rigorous academic discourse, collaborative networking, and an enthusiastic exchange of ideas, the conference succeeded in deepening participants' understanding of the complexities of organizational paradoxes. Attendees departed with a renewed sense of purpose, inspired to further explore the dynamic interplay between paradoxes and organizational life. The organizers expressed heartfelt gratitude to all speakers, participants, and volunteers, whose dedication and energy brought the conference to life. The event concluded on a hopeful note, as participants looked forward to future gatherings and continued collaboration in the quest to unravel the mysteries of managing paradoxes within and across organizations.

AUTHOR GUIDELINES

1. GENERAL INFORMATION

All articles submitted to the Dynamic Relationships Management Journal are double-blind reviewed. The manuscript should submitted via e-mail to the editor (matej.cerne@ef.uni-lj.si). Send two files: one that contains author contact information along with the text, references, tables, figures, and exhibits; and one where author contact information will be deleted. Authors should keep an exact, extra copy of the manuscript for future reference.

Manuscripts are reviewed with the understanding that they are original, not under consideration by any other publisher, have not been previously published in whole or in part, have not been previously accepted for publication, and will not be submitted elsewhere until a decision is reached regarding their publication in the Dynamic Relationships Management Journal.

Manuscripts must be written in English. Authors are responsible for the quality of written English and proof reading of the text is required.

Manuscripts should be double-spaced (including references) in 12 point font, with pages numbered consecutively throughout the entire paper. (The title page is page one.) Text alignment should be justified. Margins should be one inch (2.5 cm) at the top, bottom and sides of the page. Manuscripts inclusive of all text, references, tables, figures, appendices etc. should be no longer than 30 pages and should not exceed 60.000 characters including spaces. Authors should provide a summary, which will be published in Slovene (for foreign authors, translation will be provided by editors).

Manuscripts that report quantitative analyses of data should typically include descriptive statistics, correlation matrices, the results of statistical tests and so forth. If these items are not included in the manuscript, they should be reported in a separate technical appendix. Authors of manuscripts that report data dependent results also must make available, upon request, exact information regarding their procedures and stimuli (excluding data).

If we receive files that do not conform to the above requirements, we will inform the author(s) and we will not begin the review process until we receive the corrected files.

The author(s) submitting the manuscript for review should clearly indicate to the editor the relation of the manuscript under review to any other manuscripts currently under review, in press or recently published by the authors. The editor may ask the authors to submit copies of such related papers to the Editorial Board.

2. GENERAL INSTRUCTIONS

1. First page: Name of author(s) and title; author(s) footnote, including present positions, complete address, telephone number, fax number, email address, and any acknowledgment of financial or technical assistance.
2. Second page: Title of paper (without author's name) and an abstract of no more than 250 words substantively summarizing the article. Also include up to six keywords that describe your paper for indexing and for web searches in your manuscript.

3. Next: Text alignment justified with major headings and subheadings flush with the left margin. The introduction should state clearly the objective of the paper as well as the motivation and the context of the research. The literature review should be limited to the articles, books and other items that have a direct bearing on the topic being addressed. In empirical papers, details of the empirical section tests should not be included in the paper itself. The conclusion should summarize key findings and state their importance to the field. Footnotes should be kept to an absolute minimum and must be placed at the foot of the page to which they refer. They should not be used for citing references.
4. Then: Tables, numbered consecutively, each on a separate page. If tables appear in an appendix, they should be numbered separately and consecutively, as in Table A-1, A-2, and so on.
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6. After conclusion: Longer summary (1-2 pp, depending on length of article) in Slovenian language (for foreign authors, translation will be provided by editors).
7. Last: References, typed in alphabetical order by author's last name and in APA style.

3. TABLES

1. The table number and title should be centered and placed above the table.
2. Source(s) should also be provided and centered below the table: i.e. Mabey & Gooderham, The impact of management development on perceptions of organizational performance in European firms, 2005: 136.
3. Designate units (e.g., %, $) in column headings.
4. Align all decimals.
5. Refer to tables in the text by number only. Do not refer to tables by "above," "below," and "preceding."
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7. Clearly indicate positions of tables within the text on the page where they are introduced: e.g. Table 1 about here.
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4. FIGURES, PHOTOGRAPHS AND CAMERA-READY ARTWORK

1. For graphs, label both vertical and horizontal axes. The ordinate label should be centered above the ordinate axis; the abscissa label should be placed beneath the abscissa.
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6. Once a manuscript has been accepted for publication, complex tables and all figures must be submitted both electronically and as camera-ready (hard) copy. Do not embed figures in the Word file; instead, submit them separately in the program in which they were created (i.e., PDF, PowerPoint, Excel).
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5. MATHEMATICAL NOTATION

1. Mathematical notation must be clear and understandable. Since not all journal readers are mathematically proficient, the authors should ensure that the text (i.e., words) also conveys the meaning expressed by the mathematical notation. We recommend that extensive mathematical notation (e.g., proofs) should be provided in a separate technical appendix.
2. Equations should be centered on the page. Equations should be numbered; type the number in parentheses flush with the left margin. If equations are too wide to fit in a single column, indicate appropriate breaks.

   Unusual symbols and Greek letters should be identified by a note.

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Cite all references at the appropriate point in the text by the surname of the author(s), year of publication, and pagination where necessary. Pagination (without 'p.' or 'pp.') to give the source of a quotation or to indicate a passage of special relevance, follows the year of publication and is preceded by a colon, i.e. Parsons (1974: 238). Page numbers should be given full out, i.e. 212-230 not 212-30. When providing quotes, these should be in italics. In general, references to published works must be cited in text according to the guidelines for APA style (for more information see the DRMJ website).

7. REFERENCE LIST STYLE

1. **Single Author:** Last name first, followed by author initials.

   Berndt, T. J. (2002). Friendship quality and social development. *Current Directions in Psychological Science, 11*, 7-10.
2. **Two Authors:** List by their last names and initials. Use the ampersand instead of “and.”

   Wegener, D. T., & Petty, R. E. (1994). Mood management across affective states: The hedonic contingency hypothesis. *Journal of Personality & Social Psychology, 66*, 1034-1048.
3. **Three to Six Authors:** List by last names and initials; commas separate author names, while the last author name is preceded again by ampersand.

   Kernis, M. H., Cornell, D. P., Sun, C. R., Berry, A., & Harlow, T. (1993). There’s more to self-esteem than whether it is high or low: The importance of stability of self-esteem. *Journal of Personality and Social Psychology, 65*, 1190-1204.

4. **Organization as Author**

   American Psychological Association. (2003).

5. **Unknown Author**

   Merriam-Webster's collegiate dictionary (10th ed.).(1993). Springfield, MA: Merriam-Webster.

6. **Two or More Works by the Same Author:** Use the author's name for all entries and list the entries by the year (earliest comes first).

   Berndt, T. J. (1981).
   Berndt, T. J. (1999).

   References that have the same first author and different second and/or third authors are arranged alphabetically by the last name of the second author, or the last name of the third if the first and second authors are the same.

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