



PRIMARY RESEARCH

The impact of performance management systems on employee motivation and turnover: A mixed-methods study in manufacturing companies

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Abstract

This research delves into the impact of Performance Management Systems (PMS) on key employee outcomes, explicitly focusing on Employee Motivation and Turnover within the manufacturing sector. The aim is to unravel the intricate relationships among PMS components, employee motivation, and turnover, with a nuanced examination of the moderating role played by Employee Satisfaction. By scrutinizing performance planning, employee participation, feedback and counseling, procedural justice, distributive justice, and interactional justice, the study aims to provide sector-specific insights that contribute to theoretical advancements and practical strategies for organizational leaders. Employing a mixed-methods approach, the study conducted qualitative interviews with expatriates in Hungary to explore the deep-seated nuances of performance management in manufacturing. Subsequently, a quantitative analysis, utilizing smartPLS for data analysis, involved a questionnaire administered to 207 respondents. The methodological approach allowed for a comprehensive exploration of the subject, combining qualitative depth with quantitative rigor. The findings illuminate the intricate connections between specific PMS components and employee motivation and turnover. Moreover, the study unveils the moderating influence of employee satisfaction on these relationships, providing a holistic understanding of how performance management practices interact within the manufacturing sector. This research stands out for its sector-specific focus, shedding light on the unique challenges and opportunities within the manufacturing industry. The findings present a novel perspective that advances understanding of the complex interplay between PMS, employee motivation, and turnover, emphasizing the significance of tailoring performance management practices to sector-specific demands.

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INTRODUCTION

Current dynamic work settings provide several challenges for organizations seeking to boost employee productivity, motivation, and effectiveness. This effort centers on using performance management systems, which help firms set objectives, analyze performance, and promote employee growth. Performance management systems are essential in manufacturing organizations. This study explores the complex interaction between Performance Management Systems (PMS), employee motivation, and attrition in the manufacturing business, which has distinct organizational

structures, a diverse workforce, and high-performance expectations. PMS performance must be assessed in industrial settings where hierarchical structure and precision are crucial (Hristov, Appolloni, Chirico, & Cheng, 2021). This study can go beyond the theory on personnel retention and motivation, which industrial companies face. This research analyzes PMS to help organizational leaders tailor performance management tactics to the manufacturing industry. PMS methods may boost employee enthusiasm and minimize attrition in manufacturing companies, helping the sector survive and grow (Siraj & Hågen, 2023).

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Empirical evidence shows that manufacturing is a complex fusion of processes, people, and technology. In this context, a comprehensive understanding of production processes and performance standards requires a thorough knowledge of PMS. This study draws conclusions from the personal experiences of employees working in Hungary. This approach provides a plurality of perspectives and allows the collection of complex qualitative data to substantiate the quantitative assessment. The specific requirements of the manufacturing industry, such as precision, quality, and workforce diversity, make it possible to consider the implementation of PMS. The empirical study focuses on the following topics: performance planning, process fairness, distributive fairness, employee participation, feedback and counseling, and interactive fairness in manufacturing. The purpose of the empirical study is to strengthen PMS theory and identify the strengths and weaknesses of the manufacturing sector to propose solutions that will empower manufacturing.

This study analyzes PMS, employee motivation, employee turnover, and worker satisfaction to understand the elements of organizational execution. These variables are vital to understanding the complex relationship between turnover, employee motivation, and performance management. Representative fulfillment accommodates this complex relationship; PMS is imperative for measuring, creating, and fulfilling representatives (Di Vaio, Hasan, Palladino, Profita, & Mejri, 2021). Objective setting, execution examination, and input frameworks are considered. As organizations endeavor for ideal representative execution, understanding PMS is fundamental to creating compelling procedures.

When examining organizational behavior, Employee Motivation is a crucial metric to determine how much enthusiasm, devotion, and effort people put into their jobs (Le, Nguyen, Trinh, & Nguyen, 2021). This study uses motivational theories to examine this variable. They study inner and extrinsic motivating elements to identify why people are engaged in their jobs. This research examines organizational motivational dynamics to find ways to boost employee engagement and performance (Presslee, Richins, Saiy, & Webb, 2023). Employee turnover is a crucial indicator of corporate stability and workforce management, and it is the topic of this research. How often do employees depart a business, needing new hires? Mandated and voluntary employee departures are scrutinized to determine their causes (Yam, Raybould, & Gordon, 2018). Understanding staff attrition and retention statistics is essential for leaders who want to decrease employee turnover. Finally, employee satisfaction encompasses workers' overall

satisfaction with their employment, workspaces, and corporate cultures (Hammouri, Altaher, Rabaa'i, Khataybeh, & Al-Gasawneh, 2022). Standardized surveys or indices measure satisfaction with work-life balance, occupational autonomy, and interpersonal relationships. This study investigates the complex corporate culture and work environment factors that affect employee satisfaction and retention (Al-Ali, Ameen, Isaac, Khalifa, & Shibami, 2019). Regular employee satisfaction monitoring will achieve this.

Numerous studies have examined the relationship between PMS components and key employee outcomes. Lan, Zhao, and Gong (2023) have noted that ambitious goals might boost employee motivation and improve performance through psychological factors. Along with performance reviews, Marsh et al. (2021) argue that feedback and counseling help employees learn, improve skills, and enjoy their jobs. Organizational justice research has shown PMS's complex justice components. Wynendaele, Gemmel, Peeters, Myny, and Trybou (2021) procedural justice emphasizes equity in decision-making and shows how fairness positively affects employee attitudes and actions. Extensive research on distributive justice has been undertaken by equity theory to show how it affects employees' views of fairness and subsequent behavior (Im, Kang, Pahng, & Kang, 2023). The interpersonal aspects of equality are called interactional justice by Wynendaele et al. (2021). Their study shows that respecting employees improves employee well-being and company loyalty.

While past research has created a sound foundation for understanding how PMS components affect employee outcomes, this study addresses numerous critical information gaps. Research with sector-specific information might make applying to businesses like manufacturing easier. Industrial PMS should be scrutinized more closely due to hierarchical structures, demanding performance objectives, and various worker demographics. This research addresses a knowledge gap by thoroughly examining these complexities and providing industry-specific perspectives to help organizational executives improve performance management to improve employee efficacy. Most previous studies have centered on distinct PMS components and have yet to comprehend their impact (Ortiz-Barríos, Silvera-Natera, Petrillo, Gul, & Yucesan, 2022). This study employs a thorough technique to refine how PMS aspects interact in industry. Studies highlighting organizational system interconnectedness support the approach (Rehmani, Ahmed, Rafique, & Ishaque, 2023). The study adds to managerial behavior and performance management research by addressing these gaps and aims to comprehend its intricacies

better.

This study seeks to understand the complicated relationships between PMS components and industrial personnel outcomes, including attrition and motivation. This study explores how performance planning, employee participation, feedback, counseling, procedural justice, distributive justice, and interactional justice affect employee motivation and turnover intentions. This study's all-encompassing and sector-specific approach recognizes manufacturing companies' particular challenges and opportunities, surpassing past studies. The research also seeks to improve industrial PMS understanding. Prior research has yielded valuable insights, but manufacturing has yet to study these issues thoroughly. The empirical analysis in this paper applies theories and frameworks to manufacturing to strengthen them. Thus, it enriches scholarly discourse and managerial practitioners' tools for improving factory performance management tactics. Academics, executives, and industry practitioners value this study.

Manufacturing organizations need employee engagement and retention to succeed in a fast-paced workplace. This research helps corporate leaders overcome human management challenges by examining PMS in manufacturing. The study should help improve performance management and make strategic judgments. Manufacturing executives may use the insights to create a more welcoming environment, minimize staff turnover, and boost employee enthusiasm. This research helps CEOs optimize their strategy by identifying sector-specific opportunities and constraints.

Additionally, this research advances PMS literary theory. Focusing on manufacturing helps understand how PMS principles may be applied to specific sectors. The industrial sector allows researchers to test and improve PMS implementation approaches in a practical scenario.

LITERATURE REVIEW

Due to specialized personnel and complicated operational systems, manufacturing organizations need help to inspire and retain the workforce. Effective human resource management is essential in today's fast-paced business world, where fierce global competition and ever-accelerating technology breakthroughs are the norm. One strategic approach to addressing these issues is integrating performance management systems into the organizational structure. Improved employee performance will improve overall operational efficiency (Huang et al., 2021). Employees feel more purposeful when their personal goals match those of the company. To be competitive in manufacturing, where precision, promptness, and perfection are crucial, one must un-

derstand how performance management affects employee behavior. In automated, complex industrial processes, human capital's ability to boost innovation and solve problems is crucial (Bizzi, 2023). Effectively planned and implemented performance management systems may help factory workers learn new skills. This is crucial in a technologically sophisticated culture because existence demands adaptation and learning. These systems include performance reviews, feedback channels, and programs to help employees learn modern manufacturing skills. In the manufacturing business, performance management and employee motivation go beyond rewards to help employees grow emotionally and professionally by aligning their goals with the company's.

Social trends affect every aspect of the modern industrial environment, changing work and employee expectations. Maintaining a pleasant work atmosphere, completing essential tasks, and balancing work and life are leading employee satisfaction and engagement issues (Smudde, 2021). Performance management requires linked employee and corporate goals. Manufacturing companies that incorporate employee satisfaction into their performance management systems may better satisfy the needs of their varied workforce. This harmony creates a workplace where employees feel appreciated and revered, reducing turnover and improving performance management (Ayodele, Chang-Richards, & González, 2020). Performance management systems, employee satisfaction, and socio-cultural drivers of the industrial workforce must be understood to build solutions that boost organizational resilience and sustainability.

Performance management techniques particularly impact industrial company culture. Since employee performance directly affects corporate success, the dynamic industrial sector needs efficient and effective performance management systems. Performance management is characterized in the literature as setting goals, measuring progress, providing feedback, and encouraging or correcting poor performance. The effectiveness of these systems might significantly impact industrial business employee motivation and attrition. He, Zhang, and Morrison (2019) research shows that well-designed performance management systems motivate employees. Performance feedback and well-defined goals boost industrial employee enthusiasm and job satisfaction. Performance management systems and employee turnover have a complicated relationship. A well-managed system that rewards outstanding performance can boost employee retention. However, a poorly planned or implemented system may increase employee dissatisfaction and

turnover. [Le et al. \(2021\)](#) suggest that declining employee motivation and engagement may increase the risk of voluntary departure. Understanding the intermediary components between performance management systems and employee attrition is crucial. The literature has focused on employee satisfaction as a moderator.

Employee satisfaction moderates the complex interactions between performance management systems, employee motivation, and attrition. [Bizzi \(2023\)](#) and [Li, Duan, Chu, and Qiu \(2023\)](#) believe employee satisfaction affects performance management system acceptance. Employee satisfaction with performance management is higher. Performance management that fosters employee loyalty may reduce attrition. If performance management systems fail and employees are dissatisfied, manufacturing companies may see higher projected and actual employee churn.

Performance management systems, employee motivation, attrition, and satisfaction are best studied in the manufacturing business, which is highly competitive and relies on hardworking workers. Industrial labor is physically and intellectually demanding. Therefore, performance management tactics must be customized to enhance employee retention and motivation ([Page, Bentley, Teo, & Ladkin, 2018](#)). This study examines employee satisfaction as a mediator between performance management, motivation, and turnover in manufacturing. Its goal is to add knowledge. This research analyzes the dynamic manufacturing sector's problems and possibilities to help academics and practitioners improve organizational performance and employee outcomes ([Naseer, Raja, Syed, Donia, & Darr, 2016](#)). The link between employee turnover and performance management systems may be complicated. A well-designed system may help retain employees by rewarding those who surpass expectations. However, a poorly planned or implemented system may lead to employee discontent and attrition. [Ohunakin and Olugbade \(2022\)](#) imply that job discontent may lower employee motivation and engagement. Thus, understanding the performance management system and employee turnover barriers is crucial. Academic literature has extensively examined employee satisfaction as a moderating influence.

Satisfaction moderates the complex relationship between employee motivation, performance management, and attrition. According to [Al-Ali et al. \(2019\)](#), employee satisfaction is the best performance management program success measure. Job-satisfied workers tend to like performance management. Positive employee impressions and dedication may reduce staff turnover. Industrial companies without performance management systems and unhappy work-

ers may have higher employee turnover [Alshahrani, Mohamed, Mukhtar, and Asma'Mokhtar \(2023\)](#). Due to fierce competition and reliance on bright and motivated employees, manufacturing offers a unique chance to analyze performance management systems, employee motivation, job satisfaction, and attrition. Industrial work is fast and demanding; thus, performance management systems are vital ([Le et al., 2021](#)). This study improves our understanding of employee satisfaction by modulating motivation, attrition, and performance management systems in industrial businesses. This research examines manufacturing's problems and possibilities to help researchers and practitioners improve organizational performance and employee outcomes in this ever-changing environment.

Following are the prepositions of the study:

P1: Performance management system has an impact on employee motivation.

P2: Performance management system has an impact on employee turnover.

P3: Employee Satisfaction moderates the relationship between the performance management system and employee turnover.

P4: Employee satisfaction moderates the relationship between performance management system and employee motivation.

METHODOLOGY

This research employed a comprehensive mixed-methods approach to holistically investigate the multifaceted relationship between performance management systems, employee motivation, and turnover in manufacturing companies. The study specifically focused on the expatriate workforce in Hungary, recognizing the unique challenges and dynamics this demographic faces within organizational management and integrating qualitative and quantitative methods, which allowed for a richer and more nuanced understanding of the complex interplay of factors influencing employee outcomes.

Phase 1: Qualitative Exploration

The researchers sought a deep understanding of expatriates' performance management system viewpoints and experiences throughout the qualitative phase. Foreign workers in Hungary were interviewed 10 times in a semi-structured format. The interview was carefully organized to discuss performance management topics such as goal-setting, recognition, feedback systems, and their effects on employee motivation and work satisfaction. Thematic examination of qualitative data from this stage revealed

repeating themes and patterns that would constitute the quantitative phase. Each 60–90-minute interview was recorded, transcribed verbatim, and anonymized with participant approval to maintain confidentiality. Employment status, nationality, years of experience in Hungary, and experience were assessed for a complete representation of manufacturing industry jobs in the expatriate sample.

Phase 2: Quantitative Analysis

In the quantitative step, empirical assessments were used to test the hypotheses and premises using qualitative interview insights. Structured questionnaires were based on qualitative inquiry subjects. A representative sample of 207 Hungarian manufacturers received the questionnaire. Validated survey questions examined staff attrition, performance management, and motivation. Data was analyzed using smartPLS, which uses structural equation modeling. SEM complicated the study approach but allowed a thorough analysis of variable correlations. Validating structural models and measurement procedures was easier using SmartPLS, which manages formative and reflective indicators. The research was ethical throughout. All participants gave informed consent for the qualitative and quantitative phases. The participants' replies were kept anonymous and stored in a secure place. The study strictly followed institutional review board ethical guidelines to protect participants' rights and well-being. Participants were informed that they might leave the study without penalty. The research technique and design fulfilled the highest ethical standards, showing a commitment to ethical research.

FINDINGS

The qualitative analysis step is crucial to understanding how performance management systems affect manufacturing employee motivation and attrition. A comprehensive analysis of interview narratives was used to find repeating themes, patterns, and significant insights in the participants' lives. The stories' theme analysis revealed the manufacturing environment's complex dynamics. This inquiry's narrative-driven technique revealed complex personal experiences and laid the groundwork for appealing theories. Quality insights that created hypotheses underpinned quantitative research. They provided detailed information on the complicated link between employee attrition, performance management systems, and motivation. The qualitative phase was the foundation of the study, offering insights into the processes being researched and helping establish hypotheses that would be empirically tested.

Qualitative Findings

Empirical research has shown the complex link between performance management tactics and employee motivation. These systems' efficacy depends on their ability to include crucial traits. By formulating clear and challenging goals for staff, performance planning boosts employee motivation. According to [Jaouadi \(2022\)](#), employee involvement fosters devotion and ownership. [Zeal et al. \(2022\)](#) argue that system feedback and counseling methods are crucial to recognizing successes and meeting developmental needs. Interactional, distributive, and procedural justice help employees perceive equity and motivation. Performance management system components affect employee motivation, as research participants' interviews show. Participant 5, an experienced team leader, stressed the importance of performance planning. Participant 5 remarked that these seminars match individual ambitions with company goals, creating a motivational strategic plan. Participant 2, a quality assurance specialist, stressed counseling and feedback. Participant 2 believes continuous and constructive feedback creates an ideal environment for excellent performance, immediately boosting motivation. [Siraj and Hågen \(2023\)](#) say challenging, well-defined goals motivate. Performance planning gives employees clear goals, which strengthens this method in the context of performance management ([Park & Kim, 2023](#)). Justice theory emphasizes procedural, distributive, and interactional justice. Performance management systems require procedural justice, interactional justice, and distributive justice. All of these theoretical frameworks explain how performance management methods affect employee motivation.

Organizational research has examined the complex link between performance management and employee attrition. An analysis by [Cachón-Rodríguez, Blanco-González, Prado-Román, and Del-Castillo-Feito \(2022\)](#) found that performance planning, employee participation, feedback and counseling, procedural justice, distributive justice, and interactional justice affect employee attrition. These aspects shape employee engagement, work satisfaction, and attitudes, which affect turnover, ([Aman, Rafiq, & Dastane, 2023](#)). Performance planning that aligns with company goals sets standards and fosters employee progress. Uncertain work assignments and results might increase employee turnover due to poor performance planning. Employee participation in performance management is a predictor of organizational commitment, ([Tensay & Singh, 2020](#)). Active employee participation in decision-making reduces attrition and enhances inclusion. Effective coaching and feedback boost work satisfaction, employee growth, and reten-

tion. Unfair resource allocation or performance ratings can cause employee dissatisfaction and turnover. The premise that performance management system components significantly affect employee turnover is supported by empirical research.

Supply chain analyst participant 8 stressed the importance of performance planning in attrition choices and professional goals throughout the interviews. Participant 8 says that poor performance planning caused stagnation and made him consider other options. Director of Operations Participant 3 stressed procedural justice's role in attrition prevention. When procedural fairness was compromised, employee morale and loyalty suffered, leading to more likely turnover. Participant 6, a logistics coordinator, stressed counseling and feedback regarding attrition. Poor positive feedback made employees more likely to look for other jobs. The interview replies support the empirical discourse, showing that performance management system components affect employee attrition. Concepts of organizational fairness and social exchange underpin proposition P1. Equity theory states that people seek justice from institutions (Im et al., 2023). Lack of distributive justice in incentive distribution or procedural injustice in decision-making may convince employees to quit. Social exchange theory states that employees and companies have a social exchange; attrition occurs when this equilibrium is broken (Engelsberger, Bartram, Cavanagh, Halvorsen, & Bogers, 2023). The three-component Model of organizational Justice emphasizes how procedural, distributive, and interactional justice affect employee attitudes and behaviors. Negative impressions of these factors may cause employee turnover. The theoretical underpinning supports the claim that performance management system components significantly affect employee attrition.

Ho and Kuvaas (2020) revealed that employee satisfaction moderates performance management system turnover. Performance management methods impact attrition based on employee satisfaction, a study shows. High employee satisfaction reduces turnover despite poor performance management. Low employee satisfaction may increase turnover owing to poor performance management (Lin & Huang, 2021). Process engineer participant 4 said employee satisfaction affects performance and turnover. Participant 4 said a fair and helpful performance management system boosts work satisfaction and lowers turnover. Participant 9, a Maintenance Supervisor, said performance management discontent made him want to look for other work, emphasizing the importance of employee satisfaction in turnover decisions. Participant 7 noted that work

satisfaction moderates performance management system turnover. Excellent and appropriate job experience helps mitigate performance management challenges, stated Participant 7. These interviews show that employee satisfaction moderates performance management system turnover. Social exchange theory supports employee satisfaction's moderating influence (Bukhatir, Al-Hawari, Aderibigbe, Omar, & Alotaibi, 2023). This viewpoint says workers serve bosses for rewards. Since satisfied employees appreciate their work, performance management worries might decrease. Job attitudes range from great pleasure to severe misery. Despite poor performance management, positive performers are more resilient and less likely to leave.

Presslee et al. (2023) support proposition P4, which states that performance management and staff motivation depend on employee satisfaction. Le et al. (2021) discovered that performance management motivates employees in firms. When employees were unhappy, performance management methods were less motivating. Employee satisfaction moderates the performance management system-motivation relationship. Production Manager Participant 1 highlighted employee pleasure in performance management throughout interviews. Participant 1 felt that the fair and rewarding performance management system motivates happy workers. Logistics coordinator participant 6 expressed performance management dissatisfaction as demotivated. System defects affected employee satisfaction and motivation. Participant 3, an Operations Director, underlined that performance management was not the sole factor affecting employee motivation. A happy workforce increases the performance management system's motivational effects, claimed participant 3. Performance management methods drive employees via satisfaction, according to these interviews.

Quantitative Findings

Table 1 presents cronbach's alpha coefficients, which indicate the evaluation instruments' internal consistency reliability. Instrument reliability includes internal consistency reliability, which measures how well items in a construct measure the same variable. All constructs in this framework have high internal consistency, boosting the study's credibility. First, the Employee Motivation construct's cronbach's alpha coefficient of 0.913 indicates internal solid consistency. This implies that the employee motivation scale's questions effectively represent the required features, bolstering the tool's validity for assessing employee motivation in connection to performance management systems. Employee satisfaction (0.865) and feedback and counseling (0.910) also show internal consistency. High cronbach's

alpha values imply that satisfaction, treatment, and feedback items correctly represent their intended attributes. The findings confirm the accuracy and reliability of performance management assessment methods used to analyze these crucial work experience factors. Distributive justice (0.845), Interactional justice (0.843), and procedural justice (0.824) variables have high internal consistency,

proving the scales' dependability. The high internal consistency of employee participation and performance planning in performance management process indicators (0.762 and 0.775, respectively) demonstrates the validity of the instruments used to assess staff members' proactive engagement and the effectiveness of performance planning in performance management systems.

TABLE 1. Cronbach's alpha

	Cronbach's Alpha
Distributive Justice	0.845
Employee Motivation	0.913
Employee Participation in the Performance Management Process	0.775
Employee Satisfaction	0.865
Employee Turnover	0.712
Feedback and Counselling	0.910
Interactional Justice	0.843
Procedural Justice	0.824
Performance Planning	0.862

Table 2 summarizes the research's measuring constructs, including AVE and composite reliability statistics. Composite reliability measures item convergence inside a concept, whereas AVE measures construct internal consistency. Employee motivation shines out owing to its high composite dependability of 0.929, demonstrating good internal consistency. This study reveals that the components of the employee motivation construct consistently capture the latent variable, making the measuring scale more reliable for performance management system employee motivation assessments. The AVE of 0.622 is good but may indicate convergent validity issues. Counseling and feedback also had high composite reliability (0.937) and AVE (0.787). These

high values improve the input and counseling construct's internal consistency and explain a large portion of the variation, validating the measuring scale's dependability and convergent validity. Employee satisfaction's composite reliability of 0.907 and convergent validity of 0.710 suggest internal solid consistency. This study found that the employee satisfaction measurement scale is dependable and accurately measures performance management satisfaction. A composite reliability of 0.906 and an average variance recovered of 0.707 shows that performance planning has adequate convergent validity and high internal consistency. This shows that the performance planning evaluation questions cover the essentials, boosting the scale's validity.

TABLE 2. Validity and reliability confirmation

	Composite Reliability	AVE
Distributive Justice	0.896	0.683
Employee Motivation	0.929	0.622
Employee Participation in the Performance Management Process	0.870	0.692
Employee Satisfaction	0.907	0.710
Employee Turnover	0.839	0.636
Feedback and Counselling	0.937	0.787
Interactional Justice	0.895	0.680
Procedural Justice	0.895	0.740
Performance Planning	0.906	0.707

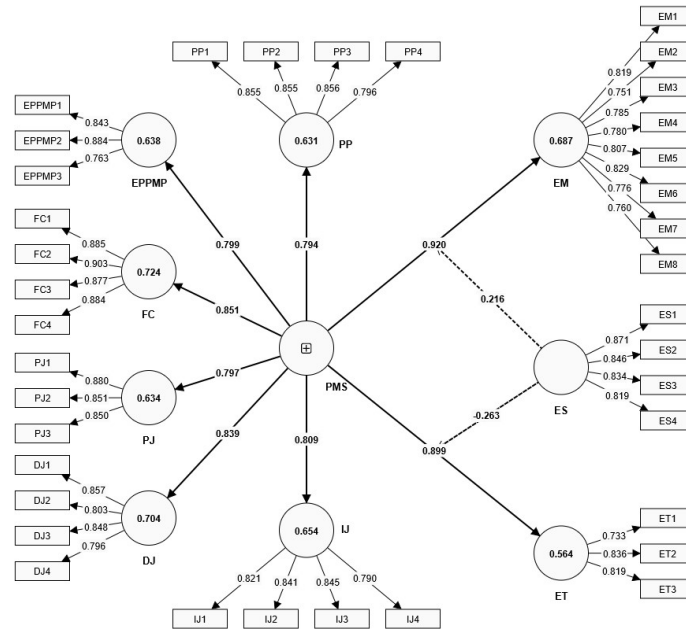


FIGURE 1. Measurement model

Table 3 and Figure 1 show each measurement construction item's exterior loadings. These loadings show how strongly observable variables are linked to latent conceptions that support them. Higher outer loading values indicate a more significant relationship between items and constructs. Higher values range from 0.733 to 0.903. The distributive justice components show significant outer loadings (DJ1: 0.857, DJ2: 0.803, DJ3: 0.848, DJ4: 0.796), indicating a strong link between the examined variables and the distributive justice concept. Employee motivation also shows high peripheral loadings (EM1-EM8), ranging from 0.751 to 0.829. This validation confirms the items' ability to reflect employee motivation. The items' strong outer loadings (EPPMP1: 0.843, EPPMP2: 0.884, EPPMP3: 0.763) support their usage in performance management engagement evaluation. Employee satisfaction's strong external

loadings (ES1: 0.871, ES2: 0.846, ES3: 0.834, ES4: 0.819) show the items' consistency in communicating complexity. The outer loadings for employee turnover (ET1: 0.733, ET2: 0.836, ET3: 0.819) reveal a substantial link between observable factors and turnover. In performance management, Feedback and Counselling's high outer loadings (FC1: 0.885, FC2: 0.903, FC3: 0.877, FC4: 0.884) show its dependability. Procedural Justice (PJ1-PJ3) and Interactional Justice (IJ1-IJ4) have outer loadings of 0.790–0.880 and 0.850–0.880, respectively. The results show that the items capture interactional and procedural justice well. Finally, the performance planning items have substantial outside loadings (PP1: 0.855, PP2: 0.855, PP3: 0.856, PP4: 0.796), showing that they measure performance management system planning aspects well.

TABLE 3. Outer loading

Variables	Items	Outer Loading
Distributive Justice	DJ1	0.857
	DJ2	0.803
	DJ3	0.848
	DJ4	0.796
Employee Motivation	EM1	0.819
	EM2	0.751
	EM3	0.785
	EM4	0.780
	EM5	0.807
	EM6	0.829

Conti.....

Variables	Items	Outer Loading
	EM7	0.776
	EM8	0.760
Employee Participation in the Performance Management Process	EPPMP1	0.843
	EPPMP2	0.884
	EPPMP3	0.763
Employee Satisfaction	ES1	0.871
	ES2	0.846
	ES3	0.834
	ES4	0.819
Employee Turnover	ET1	0.733
	ET2	0.836
	ET3	0.819
Feedback and Counselling	FC1	0.885
	FC2	0.903
	FC3	0.877
	FC4	0.884
Interactional Justice	IJ1	0.821
	IJ2	0.841
	IJ3	0.845
	IJ4	0.790
Procedural Justice	PJ1	0.880
	PJ2	0.851
	PJ3	0.850
Performance Planning	PP1	0.855
	PP2	0.855
	PP3	0.856
	PP4	0.796

Table 4 shows how Heterotrait-Monotrait (HTMT) ratios affect concept discriminant validity. The HTMT range is 0.534 to 1.046, with a standard discriminant validity threshold of

1. Since no HTMT ratio exceeds one, all constructs meet the discriminant validity criteria.

TABLE 4. Discriminant validity (HTMT)

	DJ	EM	EPPMP	ES	ET	FC	IJ	PJ	PP
Distributive Justice									
Employee Motivation	0.907								
Employee Participation in the Performance Management Process	0.652	0.632							
Employee Satisfaction	0.556	0.632	0.884						
Employee Turnover	0.935	1.046	0.631	0.596					
Feedback and Counselling	0.678	0.751	0.873	0.744	0.741				
Interactional Justice	0.896	0.826	0.534	0.525	0.930	0.663			
Procedural Justice	0.838	0.838	0.644	0.670	0.779	0.622	0.791		
Performance Planning	0.568	0.593	0.962	0.987	0.591	0.740	0.551	0.633	

The study's measurement constructs are diverse, implying that each latent variable analyzes a different aspect of the performance management system. Discriminant validity results demonstrate the dimensions' independence, confirming that each component of the employee and organizational experience is separate. HTMT ratings for notions like distributive justice and employee turnover (0.935) strongly distinguish these variables. This supports the concept that they analyze different aspects. These results strengthen the measuring model by assuring that the evaluated constructs

are independent enough to evaluate their associations in future research.

Performance management models effectively capture organizational factors that motivate employees due to their high explanatory capacity. The high R-square values for employee turnover and employee motivation indicate that the model, which covers many performance management factors, can explain changes in these crucial employee outcomes. These results support the study's findings that performance management systems impact employee behavior and organizational outcomes.

TABLE 5. Model fit

	R-Square
Employee Turnover	0.564
Employee Motivation	0.687

Table 6 shows model fit statistics. Particular emphasis is paid to the saturated model's Standardized Root Mean Square Residual (SRMR). Its SRMR value of 0.077 indicates how well the suggested model fits the observed data. Lower mean absolute standardized deviation values between anticipated and actual correlations imply a more accurate ap-

proximation. This structural equation model's SRMR value of 0.077 is within the acceptable range, indicating a good match. Since the model, which incorporates a performance management system and employee outcomes components, matches the data, the suggested framework is valid and reliable.

TABLE 6. R-square

	Saturated Model
SRMR	0.077

The direct path analysis of the structural equation model shows how the PMS affects employee motivation and turnover. Table 7 and Figure 2 show these path associations. Path analysis shows a strong positive connection (0.539) between employee motivation and performance management. This suggests that a well-functioning performance management system boosts employee motivation—*t*-value 7.722 and *p*-value 0.000 increase this positive connection's statistical significance and reliability. In contrast, employee turnover negatively correlates 0.496 with performance management. This study finds that effective and well-trained performance management systems reduce employee turnover. The *t*-value of 6.335 and *p*-value of

0.000 shows that the negative connection is statistically significant and robust. These data suggest that a sound performance management system can significantly minimize employee turnover. This direct route analysis study found that performance management techniques significantly impact crucial employee outcomes, which is consistent with prior studies. The empirical evidence supporting the statistical significance of these associations improves our conceptual understanding of performance management. It gives organizational leaders practical guidance on implementing strategic performance management initiatives that boost employee motivation and reduce turnover.

TABLE 7. Direct path analysis

	Original Sample	STDEV	<i>t</i> - Values	<i>p</i> - Values
Performance Management System -> Employee Motivation	0.539	0.070	7.722	0.000
Performance Management System -> Employee Turnover	-0.496	0.078	6.335	0.000

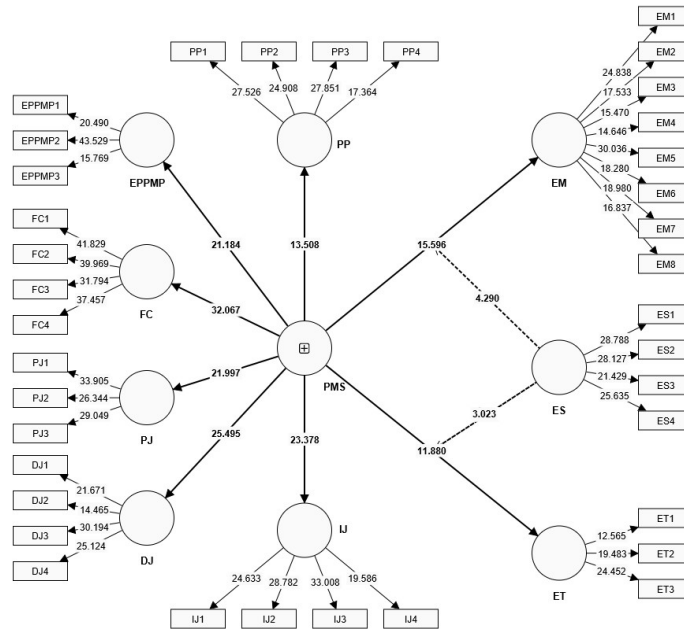


FIGURE 2. Structural model

Table 8 shows the moderation analysis results on employee motivation, attrition, satisfaction, and the PMS. The results show employee satisfaction and performance management system interaction affect employee motivation ($\beta = 0.216$, $STDEV = 0.032$, $t = 4.290$, $p = 0.000$). Staff satisfaction affects the performance management system's impact on motivation. The large t -value and low p -value show that employee motivation, performance management system, and employee contentment do not correlate across satisfaction levels, highlighting this interaction effect's statistical significance and strength. The above data provide detailed insights into performance management and employee motivation. The interaction between employee turnover and the

performance management system shows a significant coefficient of -0.263 ($STDEV = 0.048$, $t = 3.023$, $p < 0.001$). Therefore, employee satisfaction affects how the performance management system affects turnover. The t -value and p -value show that performance management system, employee attrition, and employee satisfaction vary with employee satisfaction, confirming the statistical significance of this interaction effect. The results of this study help us understand the complex interaction between employee attrition, performance management, and satisfaction. Organizational leaders may use these findings to create strategies that fit their workforce's specific characteristics.

TABLE 8. Moderation analysis

	Original Sample	STDEV	t - Values	p - Values
ES x PMS -> EM	0.216	0.032	4.290	0.000
ES x PMS -> ET	-0.263	0.048	3.023	0.001

DISCUSSION

This study found complex links between PMS and employee attrition and motivation in industrial organizations. The discussion chapter examines these links. Research of relevant scholarly publications found that a well-designed PMS affects employee outcomes, supporting our qualitative findings. Qualitative data from expat interviews in Hungary illuminated PMS performance planning, procedural justice, distributive justice, and interactional justice. Previous qualitative investigations have improved our understanding of industrial expatriates' subjective experiences. Real-world

qualitative insights give organizational leaders sophisticated considerations. Thus, they encourage a broader performance management strategy. Quantitative analyses, fortified by substantial sample size, reaffirm the pivotal role of PMS in shaping employee motivation and turnover. Performance management systems significantly influence employee motivation in the workplace (Presslee et al., 2023). The study concluded that employee motivation inside a company is positively correlated with the efficacy and implementation of a performance management system. The results show that performance management systems signif-

icantly affect employee motivation, which aligns with previous research. Well-defined targets, constructive criticism, and public recognition of employees' accomplishments are three essential elements of a successful performance management system that all work together to boost employee motivation (Nienaber & Martins, 2020). When combined, these elements improve workplace morale and productivity. It has been demonstrated that critical components of the performance management system significantly affect employee motivation. Employee perceptions of fairness in assessments, efficient goal-setting procedures, and frequent, high-quality performance reviews are all significant determinants of employee motivation (Vellanki, Mond, Khan, & Nair, 2022). Employees were consistently more motivated when they had a favorable experience with different aspects of the performance management system.

The findings indicate that a performance management system significantly impacts employee turnover. The study discovered a significant correlation between employee turnover rates within a business and the existence and efficacy of a performance management system. This study is supported by the findings of prior studies, which show that performance management systems significantly affect employees (Somarathna, 2020). Reduced turnover rates are associated with fair evaluations, open communication, chances for professional development, and a well-organized performance management system. If workers are pleased with the performance management system, they will be more dedicated and less likely to resign. Professional growth opportunities, clear performance objectives, and fair assessments are performance management system components that emerge as significant factors influencing employee turnover (Kim, 2022). Organizations that prioritize these performance management facets typically have lower employee turnover rates than those that do not.

Data supports the hypothesis that employee satisfaction moderates performance management system-employee turnover. This research gives unique viewpoints on employee satisfaction, performance management system efficacy, and attrition. The relationship between performance management and employee turnover could be impacted by staff satisfaction (Sainju, Hartwell, & Edwards, 2021; Rashid, 2020). Employee turnover is reduced by favorable employee perceptions and increased component satisfaction with the performance management system. Put otherwise, employee satisfaction is a barrier that keeps higher attrition at bay and ineffective performance management systems apart (Abbas & Iqbal, 2020; Maderazo, 2016). In many respects, employee satisfaction is critical to man-

aging this connection. Employees are less likely to consider quitting the company if they are more satisfied with goal-setting processes, performance feedback, and overall evaluation fairness (Hammouri et al., 2022). Because they are better prepared to address any issues that may develop due to the performance management system, these contented employees talk less about employee satisfaction.

H4, which examines how employee satisfaction moderates the relationship between employee motivation and the performance management system, shows surprising patterns. Results indicate a strong association between employee satisfaction, performance management system efficacy, and employee motivation (Aung, San Santoso, & Dodanwala, 2023). The results show that employee motivation moderates the performance management system-satisfaction connection. The performance management method boosts employee motivation by increasing employee satisfaction. When employees are satisfied, the performance management system boosts motivation. This suggests that contented and comfortable employees may be more susceptible to performance management system incentives (Le et al., 2021; Jam, Akhtar, Haq, Ahmad-U-Rehman, & Hijazi, 2010). Several performance management system aspects were influential. Employees who are satisfied with performance criteria, feedback, and evaluations are more likely to be motivated. Contented employees absorb the performance management system's benefits, which boosts motivation and engagement.

CONCLUSION

In conclusion, this study examined the complexity of Performance Management Systems (PMS) in manufacturing and their primary effects on staff turnover and motivation. The quantitative studies and qualitative insights from in-depth interviews with expatriates in Hungary show PMS's varying impact on organizational performance. The study concluded that an effective performance management system (PMS), including feedback systems, procedural and distributive justice, interactional justice, and performance planning, boosts employee engagement and reduces attrition. This study clarifies the aspects that affect industrial employee experiences. Thus, organizational executives may learn how to foster a healthy work environment and prevent turnover. The moderation study also shows that employee satisfaction and Performance Management Systems (PMS) are mutually reinforcing, underlining the cumulative advantages of a happy work environment and an effective PMS. This study adds practical and actionable insights into industrial project management system (PMS) complexity to

the increasing body of knowledge. Thus, corporate leaders may make better strategic decisions to boost employee engagement and retention. In industrial firms, qualitative and quantitative data improve performance management conceptually and practically by increasing employee outcomes.

Implications

PMS qualities such as procedural justice, feedback and counseling, performance planning, distributive justice, and interactional justice enhance organizational leaders' practical instructions with qualitative insights. Understanding these components helps construct PMS programs for industrial staff needs and talents. Companies may choose personalized management training to enhance constructive criticism, counseling, interpersonal skills, and procedural and distributive justice. A targeted approach can boost industrial PMS performance. Executives utilize quantifiable data about PMS's influence on employee engagement and turnover. A sound Performance Management System (PMS) boosts employee motivation, which may boost morale and loyalty. Continuous feedback, goal-oriented activities, and production-specific recognition are conceivable. Effective Performance Management Systems (PMS) minimize employee turnover since they are negatively connected. This data may be used to create retention and performance management programs that boost employee satisfaction and loyalty. The moderation research shows how employee satisfaction and PMS boost employee success, offering a realistic performance management option. Successful PMS, great workplace, and employee satisfaction may create cascade advantages. This suggests that firms should manage personnel holistically, including motivation and attrition. Improved employee satisfaction, work-life balance, and job health may strengthen a PMS, creating a more positive workplace culture.

This study enhances industrial performance management theory. Identifying and confirming PMS components that substantially affect employee motivation and attrition improves theoretical frameworks. To explain organizational justice notions, PMS's justice components were thoroughly examined utilizing qualitative and quantitative methods. PMS justice issues affect sector-specific employee outcomes, contributing to scholarly discourse. This study improves technique using qualitative and quantitative methods. The qualitative phase fed the quantitative instrument with manufacturing expatriates' subjective experiences. Mixture-methods organizational studies are becoming increasingly popular for their ability to grasp complex systems fully. This method aids organizational behavior and

performance management academics in understanding organizational dynamics. In moderation research, ES-PMS interactions confuse motivation and turnover theories. Positive work environments may lower turnover intentions and enhance employee engagement by utilizing Performance Management Systems (PMS), adding to theories on how numerous factors impact employee outcomes. This increases the understanding of industrial incentive and attrition dynamics, providing theoretical options for future research.

Limitations and Future Direction

This study has several limitations despite its benefits. This acknowledgment opens up prospects for additional research into industrial PMS. First, the study only included expatriates in Hungary, which may limit its application. Even though this approach was designed to capture a variety of viewpoints in a given situation, future research should use a more prominent and representative sample to improve external validity. Local employees' experiences compared to expats may reveal cultural differences that impact PMS perception and efficacy. The research also depends on cross-sectional data, which makes causal correlations challenging to prove. Future research using a longitudinal methodology might examine PMS, employee motivation, and attrition over time. This longitudinal method allows for a more thorough analysis of these connections' temporal dimensions, revealing how PMS practices affect employee outcomes over time. It would also enable researchers to study delayed effects and reciprocal interactions between motivation, turnover, and PMS, improving their knowledge of causative pathways. The research's bias toward manufacturing raises concerns about its applicability to other businesses. PMS may affect employee outcomes differently across industries. Thus, further study is needed. Understanding the contextual aspects that affect performance management system success across sectors can help create sector-specific and specialized methods. Comparative cross-sector studies help understand PMS in different organizational environments. Another issue is self-reported data, which may be subject to method bias and social desirability. Future studies include objective performance measurements and supervisor assessments to verify and improve employee self-reports. By including executive and management viewpoints, qualitative data better portray PMS implementation and its effects on the firm.

Despite these limits, this study suggests additional research. Qualitative research can examine PMS components and employee outcomes' complicated dynamics and organizational causes. A detailed analysis may reveal contextual factors

that affect PMS efficacy, clarifying procedures. Individual traits may affect employee PMS reactions in future research. Culture, personality, PMS, and work values may alter employee reactions. Understanding PMS effectiveness limits may help firms manage performance for varied workforces. Academics may use structural equation modeling using latent variables to reflect complex connections. Using con-

temporary analytical methods, this strategy may help evaluate PMS's multiple effects on employee results. With changing technologies and organizational structures, PMS efficacy in distant and virtual work may be studied. Adjusting PMS to contemporary work arrangements might help firms adapt to a more dynamic workplace.

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