

The Analysis of Human Resource Management Practices to Improve Production Performance in the Manufacturing Industry in Malaysia

M. Sa'at^{1*}, M.R. Salleh² and S.R. Hamid¹

¹Faculty of Technology Management and Technopreneurship Universiti Teknikal Malaysia Melaka, Hang Tuah Jaya, 76100 Durian Tunggal, Melaka, Malaysia, ²Fakulti Teknologi dan Kejuruteraan Industri dan Pembuatan Universiti Teknikal Malaysia Melaka, Hang Tuah Jaya, 76100 Durian Tunggal, Melaka, Malaysia

Corresponding Authors Email: megatbpc@gmail.com

To Link this Article: <http://dx.doi.org/10.6007/IJARBS/v14-i9/22711>

DOI:10.6007/IJARBS/v14-i9/22711

Published Date: 18 September 2024

Abstract

This study aims to examine the impact of human resource management (HRM) practice, employee motivation (moderator), and employee retention (mediator) that could enhance the production performance of the manufacturing industry in Malaysia. This study utilized a deductive, quantitative approach to explore labor sourcing strategies within Malaysia's manufacturing sector, aligning with positivist assumptions. A total of 369 respondents completed the survey, surpassing the requirement for robust analysis. The study reveals the significant impact HRM practice on Malaysia's manufacturing industry production performance. Motivated employees amplify these benefits, as indicated by increased standardized path coefficients, and employee retention partially mediates the relationship between motivation and performance. Managers are advised to implement motivational and retention programs to foster a stable, high-performing workforce, thus enhancing production performance through HRM practice.

Keywords: HRM Practice, Manufacturing Industry, Production Performance

Introduction

The manufacturing industry in Malaysia plays a crucial role in the nation's economic growth, contributing significantly to employment and GDP. However, the sector faces ongoing challenges in maintaining and improving production performance, particularly in an increasingly competitive global market. In this context, effective human resource management (HRM) practices have emerged as a critical factor in optimizing production performance. Beyond the traditional functions of hiring and staffing, HRM practices now encompass a broader range of strategies aimed at maximizing employee engagement, satisfaction, and productivity, which are essential for achieving sustainable operational success (Weiss and Hartle, 2023).

To optimize performance, companies must implement transparent performance management systems that include clear goals and regular feedback, ensuring that employees understand their roles and expectations (Adnan et al., 2023). Competitive compensation and opportunities for development are also crucial in keeping employees committed and motivated, fostering a culture of continuous improvement. Engaging employees through open communication, social events, and recognition schemes further enhances their sense of purpose and belonging, which directly contributes to improved performance (Chanana and Sangeeta, 2021). Providing challenging and meaningful work, acknowledging successes, and creating a positive work environment with supportive relationships and favorable conditions have been shown to significantly increase job satisfaction (Sorn et al., 2023). Moreover, retaining top talent is critical for long-term success, requiring ongoing investment in staff development, offering growth opportunities, and ensuring a healthy work-life balance to prevent burnout (Adnan et al., 2023).

Despite the clear benefits of comprehensive HRM practices, many manufacturing firms in Malaysia continue to struggle with suboptimal production performance. The issue lies not in the lack of HRM implementation, but in the effectiveness and integration of these practices into the core operational strategy of these companies. There is a gap between the adoption of HRM strategies and their actual impact on production performance, suggesting that many firms may not be fully leveraging HRM to its potential. This study aims to analyze the effectiveness of current HRM practices in the Malaysian manufacturing industry with the goal of optimizing production performance.

Literature Review

Building on these insights, the proposed conceptual framework for the current study encompasses variables such as HRM practices, employee motivation, employee retention, and production performance. These variables collectively capture the intricate relationships between HRM practices, employee motivation and retention, and production performance. By examining these interrelations, the study aims to provide valuable insights into the factors influencing organizational competitiveness and success in the labor market landscape. Figure 1 illustrates the conceptual model, which showcases the study's focus on investigating the relationships between HRM practices, employee motivation, employee retention, and firm performance, leading to the formulation of several hypotheses to be discussed in the following section.

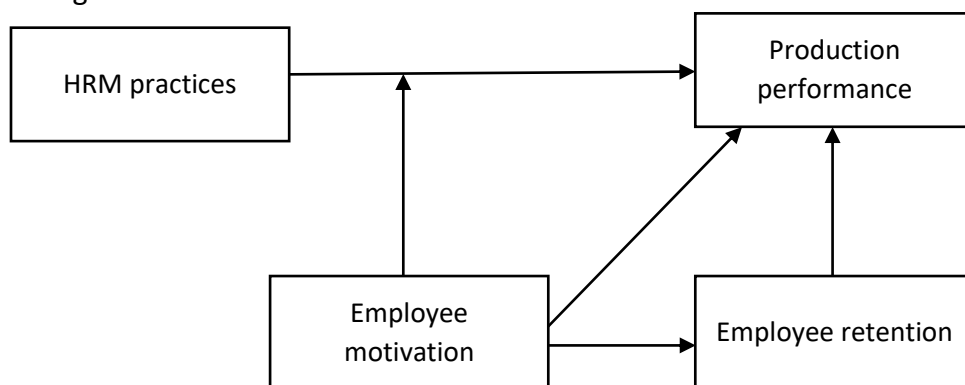


Figure 1: Proposed model of effectiveness of HRM practice for manufacturing industry in Malaysia

Human Resource Management Practice and Production Performance

Human resource management (HRM) practices, encompassing employee engagement, knowledge accessibility, and learning capacity, have been shown to significantly enhance production performance in the manufacturing sector. Research consistently shows that strategic HRM practices, including selective hiring, training, compensation, and employee empowerment, positively influence production performance, particularly in the manufacturing sector. Anwar and Abdullah (2021), emphasize that effective HRM practices significantly impact organizational performance by enhancing employee skills and motivation. Studies on Malaysian SMEs further demonstrate that effective HRM practices lead to improved organizational performance (Zakaria et al., 2021). Aligning HRM practices with organizational innovation strategies is crucial for success in manufacturing, as strategic HRM practices are positively correlated with enhanced innovation outcomes (Gahan et al., 2021). Al-Swidi et al (2021), highlight that HRM practices foster a positive organizational culture, influencing employee attitudes, behaviors, and overall production performance. This is particularly relevant in manufacturing, where a supportive work environment enhances productivity and efficiency. A growing body of evidence supports the positive impact of HRM practices on production performance, with strong HRM practices contributing to increased employee satisfaction, commitment, and productivity (Alsafadi and Altahtat, 2021). Roziq et al (2021), further confirm the correlation between efficient HRM practices and enhanced organizational performance, including increased profitability and competitive advantage. Muisyo et al (2022), note that HRM practices promoting innovation and recruiting skilled individuals significantly contribute to sustainable competitive advantage. Therefore, organizations seeking to maximize production performance and achieve long-term success should invest in effective HRM practices. The cumulative evidence suggests that strategic HRM practices optimize operational efficiency, foster innovation, enhance employee satisfaction, and cultivate a positive organizational culture, ultimately driving organizational success.

Numerous studies have meticulously explored the relationship between employee engagement and production performance, providing compelling evidence of its significant effects. Opolot and Maket (2020), conducted groundbreaking research on workplace well-being, finding that engaged employees experience higher levels of vigour, dedication, and absorption, leading to increased motivation, effort, and superior individual performance. Ghlichlee and Bayat (2021), further supported this connection, revealing a direct and positive relationship between employee engagement and key business goals such as profitability, productivity, and customer satisfaction. Their research indicated that engaged employees not only work harder and produce higher-quality output but also build stronger customer relationships, contributing to organizational success. These findings underscore that employee engagement is a strategic necessity for businesses aiming for peak performance, as fostering engagement leads to numerous benefits, including increased productivity, improved quality, enhanced customer satisfaction, and higher profitability.

The relationship between knowledge accessibility and production performance is also crucial for organizational success (Shahzad et al., 2020). Effective knowledge sharing significantly impacts performance, especially in a knowledge-based economy where the ability to create, transfer, and adopt knowledge influences long-term success (Singh et al., 2021).

Organizational culture plays a vital role in facilitating knowledge sharing and performance through socially constructed practices, routines, and programs (Abu-Rumman, 2021). Implementing knowledge management systems enhances performance by centralizing knowledge, promoting collaboration, retaining critical knowledge, supporting learning, and enabling quicker problem resolution (Meena et al., 2024). These systems contribute to continuous improvement, competitive advantage, and innovation, essential for boosting company performance (Azeem et al., 2021). Recent studies have highlighted the importance of knowledge sharing and management in driving innovation, competitiveness, and sustainability. Li and Ljungwall (2021), demonstrated that knowledge accessibility is a key determinant of regional growth performance in China, emphasizing the role of knowledge creation, transfer, and adoption in shaping long-term firm performance. Jilani et al (2020), found that knowledge sharing significantly influences performance, mediated by organizational culture, trust, and conflict. The necessity for internal mechanisms to encourage intentional knowledge sharing is also emphasized. Overall, these findings underscore the need for robust knowledge management strategies, a culture of knowledge sharing, and technology-enabled solutions to optimize production processes, drive enhanced production performance, and achieve organizational success.

Recent research extensively explores the relationship between learning capacity and production performance. Du et al (2022), found that individuals with higher working memory capacity perform better in collaborative learning, experiencing less resource depletion and achieving superior outcomes on both near and far transfer tests compared to those with lower capacity. This suggests that high-capacity learners are better equipped for collaborative learning and improved performance. Consistent findings from Singh, Mazzucchelli et al. (2021), and Halisah et al (2021), highlight that knowledge sharing effectiveness is influenced by organizational culture, trust, and conflict, emphasizing the need for internal procedures to facilitate intentional knowledge sharing despite uncertain outcomes. Wang and Hu (2020), and Nezafati et al (2023), argue that effective knowledge-sharing systems are crucial for long-term performance and competitiveness, recommending the measurement of knowledge sharing activities and the identification of contextual factors. Overall, the research suggests that both individual learning capacity and organizational factors, such as culture and knowledge-sharing procedures, are vital for enhancing production performance.

Organizations seeking to maximize production performance and achieve long-term success should prioritize investment in effective HRM practices. The cumulative evidence suggests that strategic HRM practices not only optimize operational efficiency but also foster innovation, employee satisfaction, and a positive organizational culture, ultimately driving organizational success. Thus, the study proposes hypothesis 1 to further explore the relationship between HRM practices and production performance in the manufacturing industry.

H1: HRM practices are positively related to the production performance

Moderating Effect of Employee Motivation

In spite of the fact that Human Resource Management (HRM) practices are unquestionably essential for driving production performance, the effectiveness of these practices change over time. The significance of the role that employee motivation plays as a moderating factor,

which influences the strength of the relationship between different HRM practices and productivity outcomes, has been repeatedly highlighted by academic research.

Research conducted by Rasheed et al (2020), demonstrates that performance-based reward systems are most effective in boosting performance when employees are highly motivated to perform their jobs. The results of their study indicate that individuals who are motivated perceive such rewards as being fair and motivating, which ultimately results in increased effort and performance.

After conducting further research on the topic of intrinsic motivation, Farrukh et al (2022), discovered that high-performance work practices (HPWPs) like job autonomy and feedback are most effective in improving employee outcomes like satisfaction and performance when employees are intrinsically motivated. They contend that HPWPs have the ability to support autonomy and competence, both of which are essential components of intrinsic motivation. An additional investigation into the relationship between work-life balance programmed and motivation is carried out by (Ali et al., 2020). According to the findings of their research, the most effective way for such programmed to increase employee engagement is when employees are highly motivated. In light of this, it appears that employees who are motivated are more likely to appreciate and make use of these programmed, which ultimately results in increased engagement and well-being.

Astuti et al (2020), examined the relationship between leadership styles and the performance of teams. They find that the effectiveness of various leadership styles is dependent on the level of motivation that employees have. Based on their findings, it appears that directive leadership styles are more effective for employees who are less motivated, whereas transformational leadership styles are more effective for employees who are highly motivated.

In the context of the relationship between HRM practices and production performance, these academic references collectively shed light on the significant role that employee motivation plays as a moderator. By cultivating a workforce that is highly motivated, organizations are able to maximize the potential of the human resource management practices they have selected, which ultimately results in enhanced performance, increased employee engagement, and increased operational success for the organization. However, it is essential to recognize that the specific moderating effects of employee motivation may vary depending on the HRM practices that are selected as well as the distinctive characteristics of the organization and the workforce that it employs. Hence, as this study intends to investigate the moderating effects of employee motivation towards the relationship of HRM practices and production performance, H2 is developed:

H2: Employee motivation positively moderates the relationship between HRM practices and production performance

Mediating Effect of Employee Retention

While the positive influence of employee motivation on production performance is well-established, recent research sheds light on a crucial mediating factor: employee retention.

This study suggests that employee retention acts as a bridge, connecting motivation to performance through its impact on employee behavior and commitment.

Almerri (2023), investigated the mediating role of employee retention in the relationship between employee engagement and performance. The findings suggest that high levels of engagement lead to increased commitment and job satisfaction, ultimately resulting in lower turnover and higher retention. This, in turn, fosters a positive work environment, enhanced knowledge sharing, and improved performance.

Ahmad et al (2020), explored the mediating effect of employee retention on the relationship between high-performance work practices (HPWPs) and organizational performance. They found that HPWPs, such as training and development programs, lead to increased employee motivation and satisfaction, ultimately reducing turnover and fostering retention. This, in turn, promotes organizational knowledge retention and innovation, leading to improved performance.

Papa et al (2020), investigated the impact of employee retention on innovation, proposing a mediating model. Their research suggests that employee retention leads to higher levels of organizational knowledge and experience, which in turn foster innovation and creativity. Additionally, retention promotes a collaborative and open work environment, further enhancing innovation efforts.

Hassan (2022), examined the mediating role of both employee motivation and retention on the relationship between HRM practices and performance. Their research demonstrates that HRM practices such as performance-based rewards and career development opportunities can lead to increased employee motivation and retention, ultimately resulting in improved performance.

Tian et al (2020), explored the relationship between employee retention, firm performance, and innovation. Their research suggests that employee retention positively impacts organizational performance through increased innovation. This is attributed to the valuable knowledge and experience retained through employee retention, which can be leveraged to generate new ideas and improve processes.

The literature collectively highlights the critical role of employee retention as a mediator in the relationship between employee motivation and production performance. By fostering a highly motivated workforce and implementing strategies to reduce turnover, organizations can create a positive and engaging work environment that fosters knowledge sharing, innovation, and ultimately, superior performance. It is important to note that the specific mediating effects of retention may vary depending on the organizational context and the chosen motivational strategies. Therefore, H3 is developed to study the mediating effects of employee retention on the relationship of employee motivation and production performance:

H3: Employee retention positively mediates the relationship between employee motivation and production performance

Research Methodology

The target population chosen for this study is manufacturing industry in Malaysia. Meanwhile, a sample design is a framework, or road map, that serves as the basis for the selection of a survey sample and affects many other important aspects of a survey as well (Lavrakas, 2008). The sampling frame drawn from the Federation of Malaysian Manufacturers (FMM) directory of 2023. The goal of sampling strategies in survey research is to obtain a sufficient sample that is representative of the population of interest.

The sampling frame for the primary survey was constructed based on the directory information provided by the FMM, encompassing addresses and contact details of Malaysia's manufacturing companies, with a total population of 3,019 entities (Lee et al. 2022). As stipulated by Krejcie & Morgan (1970), a minimum sample size of 341 respondents is required for surveys conducted within populations of 3,019 entities. Firms identified through this random selection process were invited to participate in the survey. Upon administration of the survey, a total of 369 respondents completed the questionnaire. This figure surpasses the minimum sample requirement of 341, thereby fulfilling the study's objective of obtaining a statistically adequate sample size for robust analysis.

Data Analysis and Discussions

A two-stage approach, recommended by Anderson and Gerbing (1988), was employed to perform the SEM analysis. First, an assessment of the measurement model was conducted to specify the causal relationships between the observed variables (items) and to confirm the measurement model fit. To achieve this, confirmatory factor analysis (CFA) was performed. This measurement model consists of nine constructs which is labour sourcing strategies (automation, collaboration with educational institution, and Corporate social responsibility) as exogenous construct, and endogenous construct consists of employee motivation, employee retention, and production performance. The CFA analysis designates that the model understudied satisfied its unidimensionality and accomplished all the required levels of fitness indexes. The measurement model indicated very good fit to almost all goodness of fit (GOF) indices. GOF measures of the measurement model of are as follows: $\chi^2 = 897.033$, $df = 801$, $Chisq/df = 1.104$, $p < .050$, $RMSEA = .017$, $GFI = .903$, $CFI = .992$, $IFI = .992$, $TLI = .992$, $AGFI = .890$. The above values indicate fulfilment of the threshold value on almost all GOF indices (Hair et al. 2019). Explicitly, the study discovered that the factor loadings for this model transcend the minimum threshold values of 0.6. Moreover, this analysis also revealed that the correlation between all constructs is less than 0.85 (Kline, 2023). Figure 2 showed GOF measures of the measurement model.

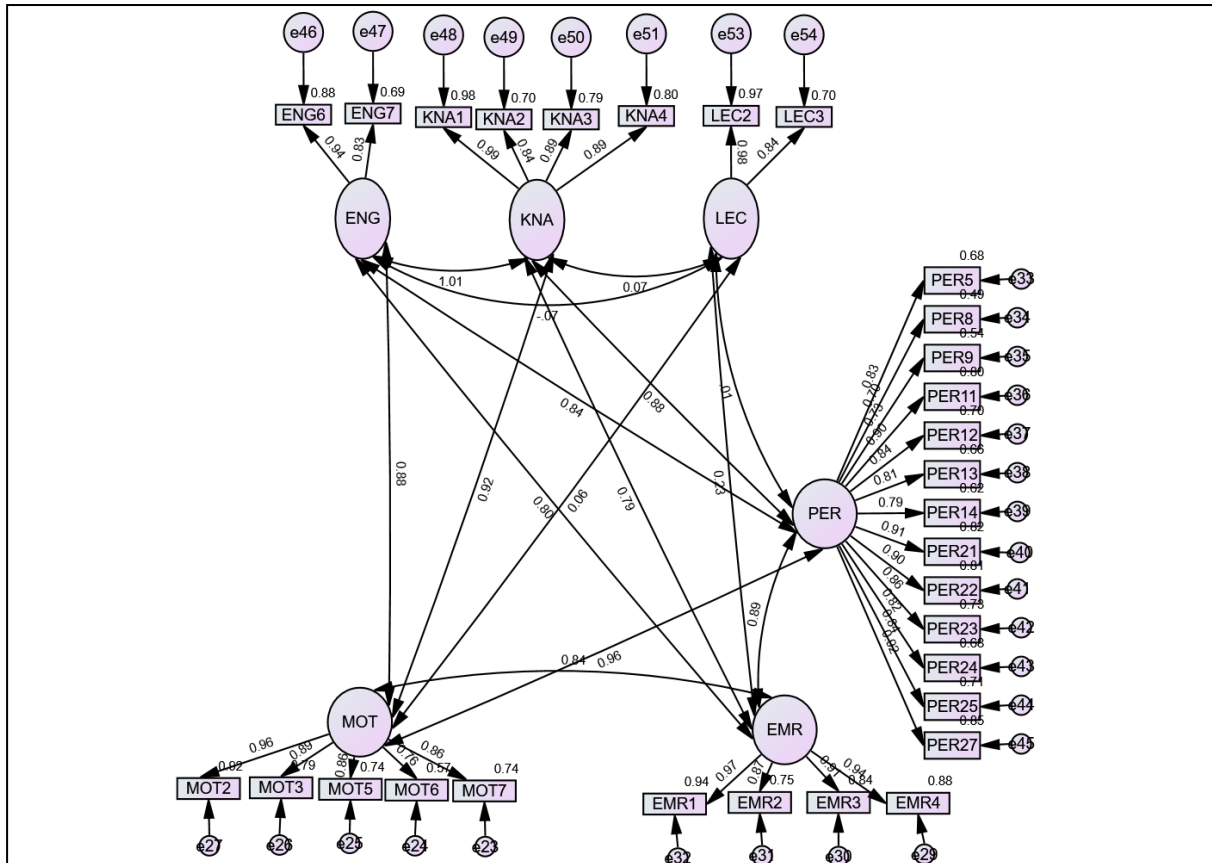


Figure 2: Measurement model

Second, the structural model was tested to see the causal relationships between the underlying exogenous and endogenous constructs. The fitness index assessment for this structural model in figure 3. The value of AGFI (0.903) exceeds the threshold level of 0.80, indicating an acceptable fit. The TLI and CFI are within the recommended value of 0.90, RMSEA which had the value of 0.018 respectively is within the acceptable threshold values, suggesting a reasonable fit (Chau & Hu, 2001). Explicitly, the study discovered that the factor loadings for this model transcend the minimum threshold values of 0.6. Moreover, this analysis also unveiled that the correlation between all constructs is less than 0.85 (Kline, 2023). Based on the structural model in figure 3, the study instructs AMOS to compute the values for the unstandardized estimate (B) for the model, and a summary of the results is shown in table 1.

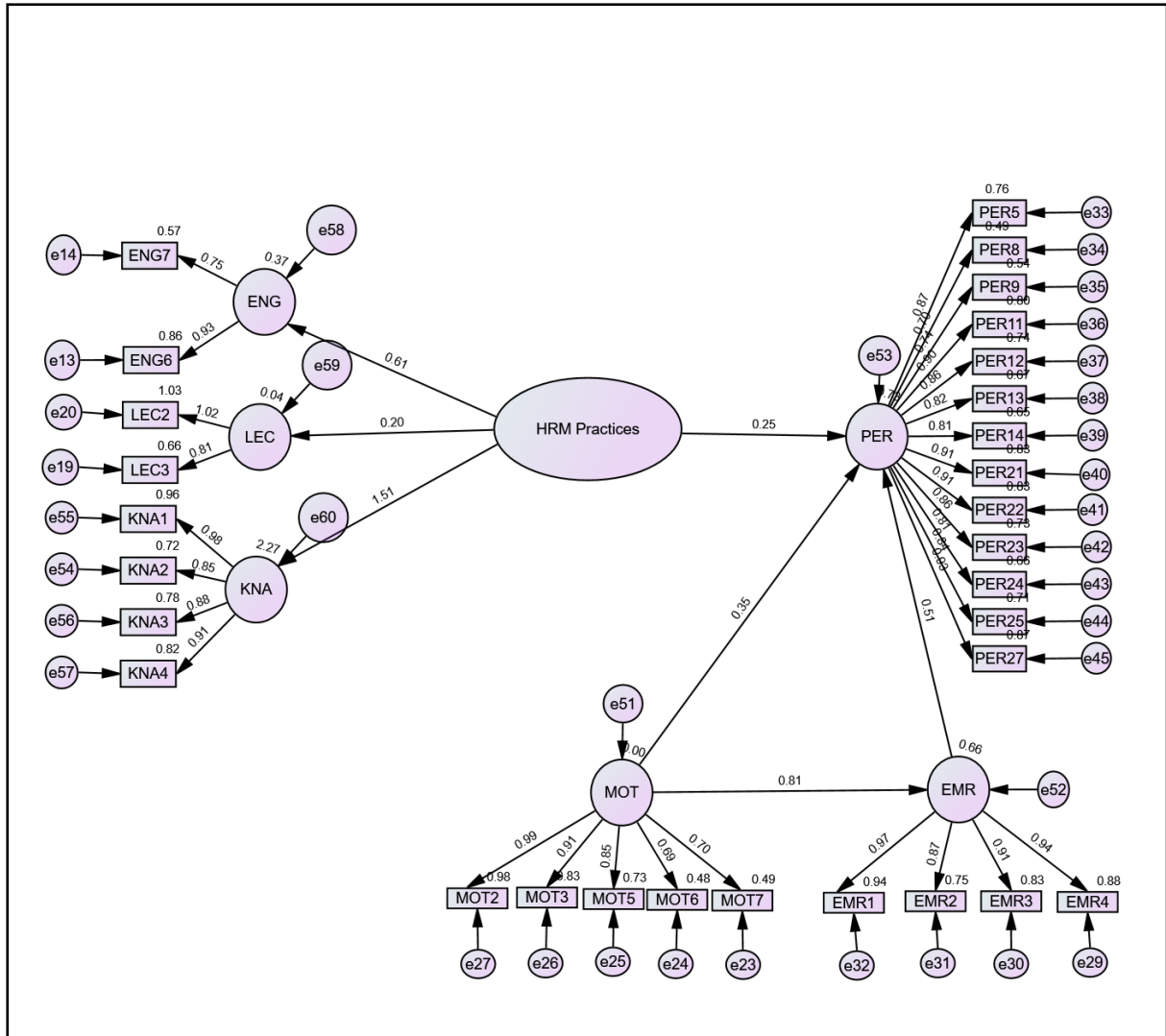


Figure 3: Structural model

Empirical evidence from this study strongly supports Hypothesis 1, which proposed that HRM practices positively influence production performance, with a standardized path coefficient (B) of 0.250, a t-value of 5.983, and a highly significant p-value ($p < 0.001$). This finding indicates a substantial and statistically significant relationship, showing that every unit increase in HRM practices leads to a 25% improvement in production performance. The study's highest factor loading reveals that the availability of job-related information to employees (KNA1, 0.981) significantly enhances production performance by ensuring employees are well-informed and efficient, a result consistent with Duan et al. (2024), who found that access to job-related information boosts employee performance and organizational outcomes. Additionally, balancing workload with work/life (ENG6, 0.916) is critical for employee engagement and better performance, as Žnidaršič and Bernik (2021) demonstrated. The continual evaluation of employee engagement (ENG7, 0.658) is also crucial, as noted by Khusanova et al (2021), for sustaining motivation and long-term performance. Training aligned with organizational goals (LEC2, 0.836) significantly improves production performance, as evidenced by Kozhakhmet (2022), who linked such training to enhanced productivity. Practical career development plans (LEC3, 0.808) are equally

important, with Jehanzeb (2020), emphasizing their role in employee development and performance. Teamwork that enhances knowledge accessibility (KNA2, 0.698) is vital for effective performance, as Memon et al (2020), highlighted, showing that teamwork and knowledge sharing are critical for organizational success. The importance of sharing best practices (KNA4, 0.787) in boosting organizational performance is underscored by Singh et al. (2021). Recent studies, including Fischer and Döring (2022), have reinforced the critical role of job-related information access in enhancing employee and organizational outcomes, while Davidescu et al (2020), emphasized the positive impact of workload balance on engagement and productivity. Continual assessment of engagement remains crucial, as Ma et al (2022), confirmed, highlighting its role in maintaining high performance. The correlation between training aligned with organizational goals and improved performance is further supported by Akdere and Egan (2020). Practical career development plans remain essential, with Bharadwaj et al (2022), linking them to employee satisfaction and retention. The role of teamwork and knowledge sharing in fostering high performance is further validated by Azeem et al. (2020). Overall, the integration of employee engagement, knowledge accessibility, and learning capability is vital for enhancing production performance, with the literature consistently supporting these elements as crucial for improving efficiency, employee satisfaction, and organizational outcomes, which are essential for sustainable production performance improvements in the manufacturing sector.

Table 1

Structural model test results

Hypothesized relationship	B	t-value	p-value	Results
H1 HRM → PER	0.250	5.983	***	Supported
Squared multiple correlation (R²):				
PER	0.904			
Model fit statistics:				
$\chi^2 = 897.033$, $df = 801$, $Chisq/df = 1.120$, $p < .050$, $RMSEA = .018$, $GFI = .901$, $CFI = .991$, $IFI = .991$, $TLI = .990$, $AGFI = .889$				

For Hypothesis H2, the direct relationship between HRM practices and Production Performance is significant ($B = 0.088$, $t = 2.528$, $p = 0.000$), demonstrating that well-implemented HRM practices positively contribute to production performance. Furthermore, the interaction effect between HRM and employee motivation (MOT) is also significant ($B = 0.219$, $t = 6.102$, $p = 0.000$), reinforcing the idea that employee motivation enhances the effectiveness of HRM practices in improving production performance. As a result, Hypothesis H2 is supported, underscoring the crucial role of employee motivation in amplifying the impact of HRM practices on production outcomes. The study's support for Hypothesis H2, which examined the impact of HRM practices on production performance, is evident with a standardized path coefficient of $B = 0.088$, a t-value of 2.528, and a p-value of 0.000. This indicates that well-implemented HRM practices, such as comprehensive training aligned with organizational goals (LEC2, 0.836) and providing accessible job-related information (KNA1, 0.981), are critical for enhancing production performance. Additionally, factors like maintaining a balance between workload and work/life (ENG6, 0.916) and continual evaluation of employee engagement (ENG7, 0.658) are also pivotal. The study further found that the interaction effect between HRM and MOT is significant ($B = 0.219$, $t = 6.102$, $p =$

0.000), indicating that motivated employees make HRM practices significantly more effective in improving production performance. The interaction term increased the B value by 0.131 (from 0.088 to 0.219), representing a 13.1% improvement. Key motivational factors, such as expressing gratitude for a job well done (MOT2, 0.938) and regular employee recognition (MOT7, 0.726), play a critical role. These findings are consistent with recent studies by Salas-Vallina et al. (2021) and Khuong et al. (2020), which highlight that HRM practices, when combined with high levels of employee motivation, lead to improved operational efficiency and productivity. The significant increase in the B value when considering the interaction effect underscores that integrating HRM practices with high employee motivation has a substantially greater impact on production performance than HRM practices alone. This reinforces the importance of combining HRM strategies with initiatives to boost employee motivation for sustainable improvements in production performance within the manufacturing sector.

Table 2

Moderation test

Relationships	B	t-value	p-value	Results
H2 HRM → PER	0.088	2.528	0.000	Supported
HRM X MOT → PER	0.219	6.102	0.000	

The mediation analysis was conducted using a bootstrap method with a sample size of 5,000 and a 95% confidence interval, as detailed in Table 3. The analysis tested Hypothesis 3 (H3), which posited that employee retention mediates the relationship between employee motivation and production performance. The results provided significant support for this hypothesis. The direct effect of MOT on PER was 0.465 (unstandardized coefficient), with a p-value of 0.007, indicating statistical significance. The indirect effect of MOT on PER through EMR was found to be 0.755, with a 95% confidence interval ranging from 0.015 to 0.101. This indirect effect was also significant, as indicated by the p-value of 0.007. The significant indirect effect, combined with the persistence of the direct effect, suggests partial mediation. This suggests that employee retention partially mediates the relationship between employee motivation and production performance, highlighting the importance of retaining motivated employees to sustain and enhance production outcomes. Recent literature supports this finding; for instance, Salas-Vallina et al. (2021) argue that motivated employees who feel valued and engaged are more likely to stay with the company, thereby maintaining a high level of production performance. Furthermore, the significant indirect effect, coupled with the persistence of the direct effect, underscores the dual pathways through which employee motivation influences production performance—both directly and indirectly through retention.

Table 3

Test for mediation using a bootstrap analysis with a 95% confidence interval

Relationships	Direct effect	Indirect	Confidence interval		p-value	Results	Conclusion
			Low	High			
H3 MOT → EMR → PER	0.350	0.755	0.015	0.101	0.007	Supported	Partial mediation

Note: unstandardized coefficient reported. Bootstrap sample = 5,000 with replacement

Conclusion and Contributions

This study successfully met its research objectives, providing substantial evidence that human resource management (HRM) practices significantly enhance production performance in Malaysia's manufacturing industry. The findings strongly support Hypothesis 1, demonstrating that effective HRM practices contribute to a 25% improvement in production performance, with key elements such as job-related information access, workload balance, and continual employee engagement evaluation playing critical roles. The analysis also highlighted the importance of training aligned with organizational goals and practical career development plans, which are essential for improving productivity and employee satisfaction. Furthermore, the study found that employee motivation significantly amplifies the impact of HRM practices on production performance, as supported by the 13.1% increase in the B value when considering the interaction effect between HRM and motivation. This underscores the crucial role of motivation in making HRM practices more effective, reinforcing the need for HRM strategies to be combined with initiatives that boost employee motivation for sustainable production performance improvements.

Additionally, the mediation analysis provided strong support for Hypothesis 3, confirming that employee retention partially mediates the relationship between employee motivation and production performance. This finding emphasizes the importance of retaining motivated employees to sustain and enhance production outcomes, with the dual pathways of direct and indirect effects highlighting the complex interplay between motivation, retention, and performance. The integration of HRM practices with motivation and retention strategies is essential for achieving long-term operational efficiency and productivity in the manufacturing sector, as evidenced by recent studies and the results of this research. Overall, the study reinforces the critical role of well-implemented HRM practices, combined with employee motivation and retention, in driving significant improvements in production performance within the Malaysian manufacturing industry.

This research offers significant theoretical and contextual contributions to the existing body of knowledge in the field of human resource management and production performance, particularly within the manufacturing sector in Malaysia. Theoretically, this study enriches the literature by demonstrating the critical role of HRM practices, such as job-related information access, employee engagement, and learning capabilities, in improving production performance. It expands upon existing theories like the Resource-Based View (RBV) and Human Capital Theory by providing empirical evidence on how HRM practices, when integrated with employee motivation and retention strategies, contribute to sustained operational efficiency. The study also advances our understanding of the moderating and

mediating factors—specifically, employee motivation and retention—that amplify the impact of HRM on production outcomes, offering a more nuanced view of HRM’s influence on organizational success.

Contextually, this research fills a gap in the Malaysian manufacturing industry, where comprehensive studies on the impact of HRM practices on production performance have been limited. The findings provide localized insights, demonstrating the effectiveness of HRM strategies within the unique socio-economic and industrial landscape of Malaysia. By highlighting the importance of combining HRM practices with motivation and retention initiatives, this study provides actionable strategies for managers to improve productivity, efficiency, and employee satisfaction in the Malaysian context. This research is particularly relevant in addressing the challenges faced by manufacturers in developing countries, offering a practical framework for optimizing production performance through enhanced HRM practices.

References

- Abu-Rumman, A. (2021). Effective knowledge sharing: A guide to the key enablers and inhibitors. In *Handbook of Research on Organizational Culture Strategies for Effective Knowledge Management and Performance* (pp. 133-156). IGI Global.
- Adnan, Q., Kaidi, H. M., Masrom, M., & Hamzah, H. S. (2023). IoT Implementation Framework to Support Industry 4.0 in the Malaysian Manufacturing Industries: A Systematic Review. *International Journal of Computing and Digital Systems*, 14(1), 1-xx.
- Ahmad, M., Raziq, M. M., Rehman, W. U., & Allen, M. M. (2020). High-performance work practices and organizational performance in Pakistan. *International Journal of Manpower*, 41(3), 318-338.
- Akdere, M., & Egan, T. (2020). Transformational leadership and human resource development: Linking employee learning, job satisfaction, and organizational performance. *Human Resource Development Quarterly*, 31(4), 393-421.
- Ali, A. A. A. M., Kee, D. M. H., Singh, A., Pandey, R., Alhamlan, H., Ahmad, K. M., ... & Narayanan, Y. (2020). Does motivation improve employees job performance? A case of absolute hotel services. *International journal of Tourism and hospitality in Asia Pasific (IJTHAP)*, 3(3), 9-21.
- Almerri, H. S. H. (2023). Investigating the impact of organizational culture on employee retention: Moderating role of employee engagement. *Journal of System and Management Sciences*, 13(4), 488-507.
- Alsafadi, Y., & Altahat, S. (2021). Human resource management practices and employee performance: the role of job satisfaction. *The Journal of Asian Finance, Economics and Business*, 8(1), 519-529.
- Al-Swidi, A. K., Gelaidan, H. M., & Saleh, R. M. (2021). The joint impact of green human resource management, leadership and organizational culture on employees’ green behaviour and organisational environmental performance. *Journal of cleaner production*, 316, 128112.
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological bulletin*, 103(3), 411.

- Anwar, G., & Abdullah, N. N. (2021). The impact of Human resource management practice on Organizational performance. *International journal of Engineering, Business and Management (IJEEM)*, 5, 35-47.
- Astuti, R. W., Fitria, H., & Rohana, R. (2020). The influence of leadership styles and work motivation on teacher's performance. *Journal of Social Work and Science Education*, 1(2), 105-114.
- Azeem, M., Ahmed, M., Haider, S., & Sajjad, M. (2021). Expanding competitive advantage through organizational culture, knowledge sharing and organizational innovation. *Technology in Society*, 66, 101635.
- Bharadwaj, S., Khan, N. A., & Yameen, M. (2022). Unbundling employer branding, job satisfaction, organizational identification and employee retention: a sequential mediation analysis. *Asia-Pacific Journal of Business Administration*, 14(3), 309-334.
- Chanana, N., & Sangeeta. (2021). Employee engagement practices during COVID-19 lockdown. *Journal of public affairs*, 21(4), 1-8.
- Chau, P. Y., & Hu, P. J. H. (2001). Information technology acceptance by individual professionals: A model comparison approach. *Decision sciences*, 32(4), 699-719.
- Davidescu, A. A., Apostu, S. A., Paul, A., & Casuneanu, I. (2020). Work flexibility, job satisfaction, and job performance among Romanian employees—Implications for sustainable human resource management. *Sustainability*, 12(15), 6086.
- Du, X., Chen, C., & Lin, H. (2022). The impact of working memory capacity on collaborative learning in elementary school students. *Frontiers in Psychology*, 13, 1027523.
- Duan, S. X., Deng, H., & Wibowo, S. (2024). Technology affordances for enhancing job performance in digital work. *Journal of Computer Information Systems*, 64(2), 232-244.
- Farrukh, M., Ansari, N. Y., Raza, A., Meng, F., & Wang, H. (2022). High-performance work practices do much, but HERO does more: an empirical investigation of employees' innovative behavior from the hospitality industry. *European Journal of Innovation Management*, 25(3), 791-812.
- Fischer, C., & Döring, M. (2022). Thank you for sharing! How knowledge sharing and information availability affect public employees' job satisfaction. *International Journal of Public Sector Management*, 35(1), 76-93.
- Gahan, P., Theilacker, M., Adamovic, M., Choi, D., Harley, B., Healy, J., & Olsen, J. E. (2021). Between fit and flexibility? The benefits of high-performance work practices and leadership capability for innovation outcomes. *Human Resource Management Journal*, 31(2), 414-437.
- Ghlichlee, B., & Bayat, F. (2021). Frontline employees' engagement and business performance: the mediating role of customer-oriented behaviors. *Management Research Review*, 44(2), 290-317.
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European business review*, 31(1), 2-24.
- Halisah, A., Jayasingam, S., Ramayah, T., & Popa, S. (2021). Social dilemmas in knowledge sharing: an examination of the interplay between knowledge sharing culture and performance climate. *Journal of Knowledge Management*, 25(7), 1708-1725.
- Hassan, Z. (2022). Employee retention through effective human resource management practices in Maldives: Mediation effects of compensation and rewards system. *Journal of Entrepreneurship, Management and Innovation*, 18(2), 137-174.

- Jehanzeb, K. (2020). Does perceived organizational support and employee development influence organizational citizenship behavior? Person–organization fit as moderator. *European Journal of Training and Development, 44*(6/7), 637-657.
- Jilani, M. M. A. K., Fan, L., Islam, M. T., & Uddin, M. A. (2020). The influence of knowledge sharing on sustainable performance: A moderated mediation study. *Sustainability, 12*(3), 908.
- Khuong, M., Mai, T., & Phuong, N. (2020). The impacts of human resource management practices on employees' motivation and loyalty. *Management Science Letters, 10*(11), 2673-2682.
- Khusanova, R., Kang, S. W., & Choi, S. B. (2021). Work engagement among public employees: Antecedents and consequences. *Frontiers in psychology, 12*, 1-15.
- Kline, R. B. (2023). *Principles and practice of structural equation modeling*. Guilford publications.
- Kozhakhmet, S., Moldashev, K., Yenikeyeva, A., & Nurgabdeshev, A. (2022). How training and development practices contribute to research productivity: A moderated mediation model. *Studies in Higher Education, 47*(2), 437-449.
- Lavrakas, P. J. (2008). *Encyclopedia of survey research methods*. Sage publications.
- Lee, K., Azmi, N., Hanaysha, J., Alzoubi, H., & Alshurideh, M. (2022). The effect of digital supply chain on organizational performance: An empirical study in Malaysia manufacturing industry. *Uncertain Supply Chain Management, 10*(2), 495-510.
- Li, S., & Ljungwall, C. (2021). Access to knowledge and knowledge production: the case of China. *Journal of Chinese Economic and Business Studies, 19*(2), 163-172.
- Ma, X., Mao, C., & Liu, G. (2022). Can robots replace human beings?—Assessment on the developmental potential of construction robot. *Journal of Building Engineering, 56*, 104727.
- Meena, A., Dhir, S., & Sushil, S. (2024). Coopetition, strategy, and business performance in the era of digital transformation using a multi-method approach: Some research implications for strategy and operations management. *International Journal of Production Economics, 270*, 109068.
- Muisyo, P. K., Qin, S., Ho, T. H., & Julius, M. M. (2022). The effect of green HRM practices on green competitive advantage of manufacturing firms. *Journal of Manufacturing Technology Management, 33*(1), 22-40.
- Nezafati, N., Razaghi, S., Moradi, H., Shokouhyar, S., & Jafari, S. (2023). Promoting knowledge sharing performance in a knowledge management system: do knowledge workers' behavior patterns matter?. *VINE Journal of Information and Knowledge Management Systems, 53*(4), 637-662.
- Opolot, J. S., & Maket, L. (2020). Psychological contract, employee engagement and employee performance. *International Journal of Academic Research in Business and Social Sciences, 10*(11), 886-903.
- Papa, A., Dezi, L., Gregori, G. L., Mueller, J., & Miglietta, N. (2020). Improving innovation performance through knowledge acquisition: the moderating role of employee retention and human resource management practices. *Journal of Knowledge Management, 24*(3), 589-605.
- Rasheed, M. I., Jamad, W. N., Pitafi, A. H., & Iqbal, S. M. J. (2020). Perceived compensation fairness, job design, and employee motivation: The mediating role of working environment. *South Asian Journal of Management, 14*(2), 229-246.

- Roziq, M., Reawaroe, H. P., & Rosyidi, A. I. (2021). Investment perspectives in human resources management and its contribution on organizational performance and competitive advantages. *Journal of Management and Leadership*, 4(1), 1-13.
- Salas-Vallina, Andrés, Joaquín Alegre, and Álvaro López-Cabrales. "The challenge of increasing employees' well-being and performance: How human resource management practices and engaging leadership work together toward reaching this goal." *Human Resource Management* 60.3 (2021): 333-347.
- Shahzad, M., Qu, Y., Zafar, A. U., Rehman, S. U., & Islam, T. (2020). Exploring the influence of knowledge management process on corporate sustainable performance through green innovation. *Journal of knowledge management*, 24(9), 2079-2106.
- Singh, S. K., Gupta, S., Busso, D., & Kamboj, S. (2021). Top management knowledge value, knowledge sharing practices, open innovation and organizational performance. *Journal of business research*, 128, 788-798.
- Singh, S. K., Mazzucchelli, A., Vessal, S. R., & Solidoro, A. (2021). Knowledge-based HRM practices and innovation performance: Role of social capital and knowledge sharing. *Journal of International Management*, 27(1), 100830.
- Sorn, M. K., Fienena, A. R., Ali, Y., Rafay, M., & Fu, G. (2023). The effectiveness of compensation in maintaining employee retention. *Open Access Library Journal*, 10(7), 1-14.
- Tian, H., Iqbal, S., Akhtar, S., Qalati, S. A., Anwar, F., & Khan, M. A. S. (2020). The impact of transformational leadership on employee retention: mediation and moderation through organizational citizenship behavior and communication. *Frontiers in psychology*, 11, 314.
- Wang, C., & Hu, Q. (2020). Knowledge sharing in supply chain networks: Effects of collaborative innovation activities and capability on innovation performance. *Technovation*, 94, 102010.
- Weiss, T., & Hartle, F. (2023). *Reengineering performance management breakthroughs in achieving strategy through people*. CRC Press.
- Zakaria, N., Wei, F., Abdullah, N., & Yusoff, R. (2021). Unravelling the HRM practices and performance link in Malaysian SMEs: The role of organizational innovation. *Management Science Letters*, 11(4), 1111-1120.