University of Worcester Worcester Research and Publications

The Effect of Job Rotation on Employee Performance: The mediating role of HR strategy and training in the petrochemical industry.

Item Type	Journal Article – Author's Accepted Manuscript
UoW Affiliated Authors	Bell, Robin
Full Citation	Majd, A., Bell, Robin , Ali, S., Davoodi, A. and Nasirifar, A. (2024) The Effect of Job Rotation on Employee Performance: The mediating role of HR strategy and training in the petrochemical industry. Industrial and Commercial Training. (Ahead of Print) ISSN 0019-7858
DOI/ISBN	https://doi.org/10.1108/ICT-10-2023-0074
Journal/Publisher	Industrial and Commercial Training Emerald Publishing
Rights/Publisher Set Statement	This author accepted manuscript is deposited under a Creative Commons Attribution Non-commercial 4.0 International (CC BY-NC) licence. This means that anyone may distribute, adapt, and build upon the work for non-commercial purposes, subject to full attribution. If you wish to use this manuscript for commercial purposes, please contact permissions@emerald.com.
Item License	© Emerald Publishing Limited. CC BY-NC 4.0
Link to item	https://www.emerald.com/insight/content/doi/10.1108/ICT-10-2023-0074/full/html

For more information, please contact wrapteam@worc.ac.uk

The Effect of Job Rotation on Employee Performance: The mediating role of HR strategy and training in the petrochemical industry

Abstract

Purpose - This study investigates the impact of job rotation on employee performance and explores the mediating role of HR strategy and training effectiveness on this relationship, within the petrochemical industry, which represents a highly specialist and hazardous industrial context.

Methodology - Data was collected through a questionnaire which was distributed among the experts working in an Iranian petrochemical organization. Previously validated scales were utilized to measure job rotation, employee performance, HR strategy, and training effectiveness, and partial least squares structural equation modeling was utilized for hypothesis testing.

Findings - The research findings indicated that job rotation had a negative effect on employee performance. Whilst training effectiveness and HR strategy positively mediated the relationship between job rotation and employee performance. This highlights the importance of ensuring effective training and a HR strategy to support job rotation of skilled and specialist employees.

Practical Implications - Managers of employees in specialist and hazardous industries, such as petrochemical workers, interested in job rotation to support employee career development, should be mindful of potential negative implications on employee performance. To support and improve employee performance, job rotation should be considered alongside HR strategy and training.

Originality - Previous research has largely focused on the value of job rotation to develop managers' organizational understanding and to reduce injury within blue collar work, which has led to a paucity of research into job rotation within highly skilled and specialist industrial roles. It is highlighted within the literature that it remains unclear what supports effective job rotation. This study addresses this lacuna by investigating how job rotation affects employee performance in a highly skilled and specialized industry and how strategy and training effectiveness mediate this effect.

Keywords

Job Rotation, Human Resources, Employee Performance, Training, Iran, Petrochemical Industry

Majd, A.A., Bell, R., Ali, S., Davoodi, A. & Nasirifar, A. (2024) The Effect of Job Rotation on Employee Performance: The mediating role of HR strategy and training in the petrochemical industry, *Industrial and Commercial Training.* doi: 10.1108/ICT-10-2023-0074

Introduction

Job rotation has been recognized as a career and talent development practice, which can support organizations to remain competitive (Mujtaba et al., 2022). Job rotation requires workers to switch workstations or jobs at set intervals (Middleworth, 2015). The job rotation practice emerged in the 1980s and 1990s with the aim of increasing the employees' performance and flexibility (Cristini and Pozzoli, 2010). Job rotation has been posited as supporting corporations to adapt to changes, as flexible workers can buffer unpredictable links in production systems (Kher et al., 1999). For employees, workplace rotation can boost workplace satisfaction (Gu et al., 2022) and help people gain new skills (Al-Romeedy, 2019), providing a pathway for career growth (Finlayson, 2021). The effect of job rotation depends on the job role and tasks with higher risk can reduce the efficiency of rotation (Mehdizadeh et al., 2020). While the popularity of job rotation has declined, it remains popular in hazardous and intensive industries to balance challenging and physical demands to reduce repetitive injuries and fatigue (Asawarungsaengkul and Nanthavanij, 2008; Mehdizadeh et al., 2020).

Whilst most of the research into the consequences of job rotation has posited and affirmed positive outcomes in terms of career development, job involvement and organizational commitment (Foroutan et al., 2021), it has been highlighted that the factors which can support positive outcomes and the potential negative consequences of job rotation remain under researched (Foroutan et al., 2021). Lee and Lee (2018) suggest employees who prefer and require specialization in their roles might see job rotations as an obstacle for their development; however, there remains a dearth of research into job rotation in highly specialist, skilled and potentially hazardous industries, since existing research has focused on job rotation within managerial roles to add breadth of understanding of job roles in an organization (Wallo et al., 2022) or blue-collar roles to reduce injury (Middleworth, 2015). This research addresses this gap and furthers understanding of the impact of job rotation within a highly specialist and hazardous industrial context, by researching job rotation within a polyurethane manufacturer. This research investigates the impact of job rotation on employee performance and explores the mediating role of human resource (HR) strategy and the effectiveness of training in the petrochemical industry. This addresses the questions:

How does job rotation impact employee performance in the petrochemical industry?

Does HR strategy and effective training mediate the relationship between job rotation and employee performance in the petrochemical industry?

This paper next reviews the literature on the concepts of job rotation, employee performance, HR strategy, and training effectiveness to develop hypotheses and present a conceptual model. Following this, contextualization of the industry and region being researched is presented along with the methodology adopted within this research. Then the data analysis process is explained along with the results of the hypothesis testing. The results of the research are then unpacked within the discussion, along with the presentation of managerial and training implications and the identification of limitations and potential venues for future research. Finally, the paper ends with a conclusion, which summarizes key findings and contributions of the research.

Literature Review

Job Rotation

Job rotation has been posited as an effective career development method (Kong et al., 2020) and an effective tool for developing employees through exposure to diverse roles and responsibilities within the same organization (Al-Zoubi et al., 2022). It can reduce workload strain and rejuvenate employees with new challenges (Mehdizadeh et al., 2020), leading to increased motivation and output (Jorgensen et al., 2005). Most of the research on the consequences of job rotation in organizations has confirmed the positive outcomes of this occupational development technique, including the increase of job involvement level and organizational commitment, occupational learning, employees' motivation, job satisfaction, skill development, continuous improvement, increase of knowledge, and the development of professional skills (Al-Romeedy, 2019; Foroutan et al., 2021). However, there are some negative consequences of job rotation, as some research has found evidence that new tasks may cause stress and dissatisfaction (Earney and Martins, 2009). In addition, research has found that different tasks and duties due to job rotation can negatively affect effectiveness of occupational development, efficiency, morale, autonomy, job performance, and work and organizational engagement (Lee and Lee, 2018, Rai and Maheshwari, 2021). Moreover, job rotation can lead to disruption of organizational workflow, poor person-job fit, inability to adapt to equipment, overlap of knowledge, increase of errors, increase of training and education

costs, expectations of greater renumeration, work-life conflict, increase of burnout, and increased stress (Rai and Maheshwari, 2021).

Nevertheless, job rotation can increase the problem-solving skills of employees because employees need to understand and deal with a new job, a new department, new employees, and new work processes that can bring many problems (Al-Zoubi et al., 2022). Lack of these skills can adversely affect the organization. In high-risk and potentially hazardous industries and job roles, job rotation could be advantageous for both employees and employers, as it would allow the employee respite from the role and the employer the opportunity to develop other employees' skills and knowledge in an essential role (Schmidt et al., 2021). Whilst job rotation has been posited as having both positive and negative impacts, its potential to develop employees and increase their motivation and output (Jorgensen et al., 2005), could be expected to have a positive impact on their performance. Therefore, the following hypothesis is proposed:

H1: Job rotation positively influences employee performance.

Human Resources Strategy

HR strategy can be seen as a tool which leads to firm level competitive advantage by creating employee-based resources across the organization that are rare and valuable, which can help to improve HR and organizational performance (Collins, 2021). Human resources policies that are the basis of human resources strategy should develop and enhance an employee's sense of empowerment, through creating an atmosphere to develop skills and behaviors (Soleimani et al., 2023). The success of an organization depends on its employees, therefore it is important that HR polices work to achieve the desired HR strategy, by transferring effective messaging between the employer and employees (Collins, 2021). Analyzing employee performance can lead to a HR strategy that is related to HR needs, which should be guided by the needs of the company. Therefore, the strategic HR strategy should be developed to achieve competitive advantage. HR strategy is important because it provides HR direction for other functional areas (Aiko, 2021). The relationship between HR strategy and job rotation has not been studied in previous research, however as job rotation has commonly been posited as effective within HR literature, it is hypothesized that:

H2: Job rotation positively influences HR strategy.

HR practices and strategy need to be carefully considered to support employee performance, as HR strategies which are perceived to support and enhance skills and opportunity, can improve job performance. But conversely, HR practice and strategies which are not perceived to support and enhance skills and opportunity can have a negative effect on wellbeing and job performance (Khoreva and Wechtler, 2018). Therefore, job rotations which offer the opportunity for employees to develop skills and open opportunity, could be seen as offering a positive HR strategy. Job rotations have been posited as having the potential to improve employee performance through increased employee satisfaction (Campion et al., 1994) and enhances employees' learning and human capital accumulation (Al-Romeedy, 2019). Rotation exposes managers to different experiences supporting professional development and can be a mechanism to reduce employees' fatigue and increase engagement in their job. Therefore, it is suggested that job rotation affects employees' performance, and it can help employers to create better relationships and achieve effective outcomes (Al-Zoubi et al., 2022). Therefore, it is proposed that:

H3: Job rotation mediated by HR strategy positively influences employee performance.

Training

Training is a focused and time-framed activity that helps build greater interpersonal and organizational skills and changes behaviors that improve individual, team, and HR and organizational performance. It's involves improving the skills that are necessary to achieve organizational goals (Mehreen and Ali, 2022). Organisations should train employees to develop and promote them to attract and retain a good workforce (Arasanmi and Krishna, 2019). Whilst numerous studies have been conducted on how job rotation and training affect performance (e.g., Chakraborty and Biswas, 2020), there is a paucity of research as to how job rotation influences training effectiveness. As job rotation offers the opportunity for employees to engage and experience other job roles, this has the potential to open employees' horizons and offer a bridge for new knowledge. Therefore, it is hypothesized that:

H4: Job rotation positively affects training effectiveness.

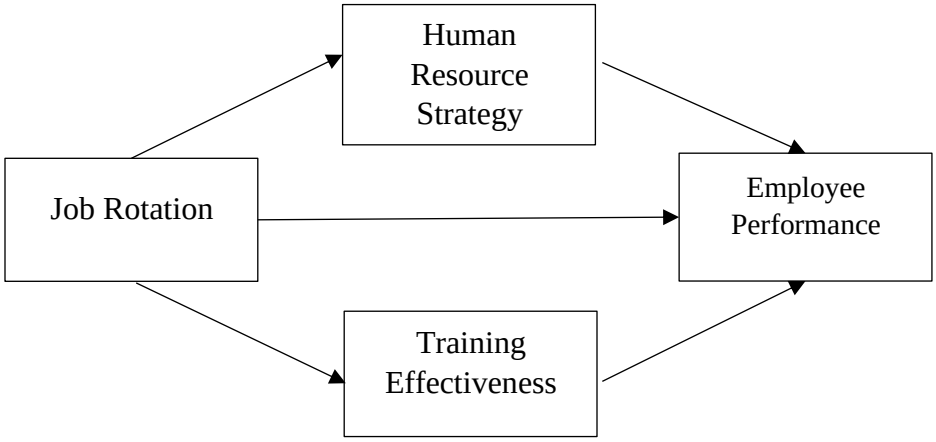
Potnuru et al. (2021) found that employee training programs supported the development of employee competencies, which in turn enhanced performance and organizational effectiveness. Similarly, Chakraborty and Biswas (2020) suggest that training plays a crucial role in job and

company performance. Therefore, it is suggested that job rotation supported by effective training can lead to positive employee performance. This is hypothesized as follows:

H5: Job rotation mediated by training effectiveness positively influences employee performance.

The conceptual model and hypotheses tested in the research are shown in Figure 1.

Figure 1: Conceptual model and hypotheses



Industrial Context

Polyurethane production falls within the petrochemical industry and is highly specialized with limited producers worldwide. It has high environmental and safety risks associated with its production (Dernehl, 1966), and therefore the training, development, and retention of employees is important. This leads to the need for a clear HR strategy, to ensure effective and safe operation production. Understanding job rotation and employee performance in hazardous jobs is crucial to safety and sustainability, and exploring the Middle Eastern petrochemical industry is especially valuable given its large footprint and rapid growth (Verbeek and Mah, 2020). The localization of polyurethane production in the Middle East provides a unique context and backdrop, where informal networks are prevalent and play an important role in society (Horak et al., 2023). It is important to consider the influence of informal connections in Iranian society, often referred to as ‘party bazi’ (Malekzadeh, 2016). The ‘epicenter’ of such informal networks can be HR departments (Alsarhan et al., 2021) and therefore it is useful to consider how such relationships influence HR operations and outcomes (Alsarhan and Al-Twal, 2023).

Methodology

The research population included 247 professionals from a prominent Iranian petrochemical business. This company has rotated 15% of its expert team in the last five years. This study defines expert as a BA degree holder with 10 years of corporate experience. Using stratified random sampling and the Cochrane formula, 150 experts received questionnaires. The respondents included 129 men, 21 women, 57 BAs, and 93 MAs. The age profile of respondents was 25–35 (33), 36–45 (94), 46–55 (18), and 5 over 56. 29 employees had 5–10 years of service, 98 had 11–20 years, and 23 had 21–30 years. The questionnaire consisted of 48 questions; the first part included demographic questions, while the second part included questions on a five-point Likert scale relating to the four concepts of job rotation, employee performance, HR strategy, and training effectiveness. The four concepts were measured using previously validated scales. Job rotation was assessed using Ho et al.'s (2006) 11-item instrument. Human resources performance was assessed by Choi and Rainey's (2010) 8-item instrument, and HR strategy was measured using Chang and Huang's (2005) 14-item instrument. Finally, Choo and Bowley's (2008) 16-item instrument assessed training effectiveness.

Data Analysis and Results

A Kolmogorov-Smirnov test was used to check the normality of the data distribution. This test demonstrated a non-normal distribution of the data, due to significance level of less than 0.05 in all the variables, leading to structural equation modeling and partial least square (PLS) being adopted to test the hypotheses.

The Fit of Research Measurement Models

Although the scales were previously validated, preliminary and validity testing was conducted to confirm the validity of the scales in Iran. The questionnaire data was factor analysed to determine item factor loadings. To support a clean factor structure, elements with factor loadings <0.4 were deleted per literature guidelines (Hulland, 1999). This eliminated 15 items.

Structure reliability and validity were examined to evaluate measurement models. Reliability was assessed through composite reliability and Cronbach's alpha values, presented in table 1. The composite reliability and Cronbach's alpha values for each variable demonstrate strong evidence of internal consistency and reliability of the measures (Bland and Altman, 1997). Validity was

checked using convergent and divergent criteria. Convergent validity was assessed by calculating the average variance extracted (AVE), which provided a score >.5, demonstrating convergent validity (Cool et al., 1989). Divergent validity was assessed by comparing the square root of each variable's AVE with the correlation between the constructs. The square root of each variable was higher than the variable correlation coefficient, which provides acceptable evidence of divergent validity (Fornell and Larcker, 1981).

Table 1: Cronbach's alpha report, composite reliability, and convergent validity of research constructs

Variables	Dimensions	The number of Statements	Cronbach's Alpha	Composite Reliability	AVE
Job rotation	Paying attention to comments and interests	4	0.910	0.943	0.848
	Paying attention to education	4			
	Paying attention to the physical and scientific requirements of the job	3			
HR strategy	HR training and development	2	0.94	0.953	0.773
	Recruit carefully	2			
	Effective communication with employees	2			
	Management development	2			
	Flexible work schedules	2			

	Equal employment opportunities	2			
Employee performance	-	8	0.766	0.827	0.578
Training effectiveness	-	16	0.93	0.942	0.512

Fitting Structural Models

To evaluate the fit of the structural model, R^2 and Q^2 criteria were used, and the values are reported in Table 2. The three values of 0.19, 0.33 and 0.67 for R^2 indicate weak, medium and strong fit of the structural part of the model, respectively and the value of Q^2 should also be positive (Davari and Rezazadeh, 2014) According to Table 2, Q^2 values are positive for all endogenous constructs. R^2 values for employee performance and HR strategy are moderate and it is weak for training effectiveness. The goodness-of-fit (GoF) criterion was used to evaluate model fit. The GoF score for the model produced was 0.4, indicating a strong fit.

Table 2: The values of R^2 and Q^2 of the endogenous structures of the model

Endogenous Structures of the Model	**R^2**	**Q2**	**Communalities**
HR strategy	0.224	0.158	0.597
Training effectiveness	0.174	0.07	0.262
Employee performance	0.614	0.256	0.334
Job rotation	-	-	0.719

Hypotheses Testing

After ensuring the appropriateness of the presented model, research hypotheses were examined and tested. If the values of the significant numbers of t exceed 1.96, the path coefficients were significant, and the hypotheses of the research were confirmed. Figures 2 and 3 respectively show the results related to the path coefficients between the variables and their corresponding significant numbers.

Majd, A.A., Bell, R., Ali, S., Davoodi, A. & Nasirifar, A. (2024) The Effect of Job Rotation on Employee Performance: The mediating role of HR strategy and training in the petrochemical industry, *Industrial and Commercial Training*. doi: 10.1108/ICT-10-2023-0074

Figure 2: Structural equation model with path coefficients

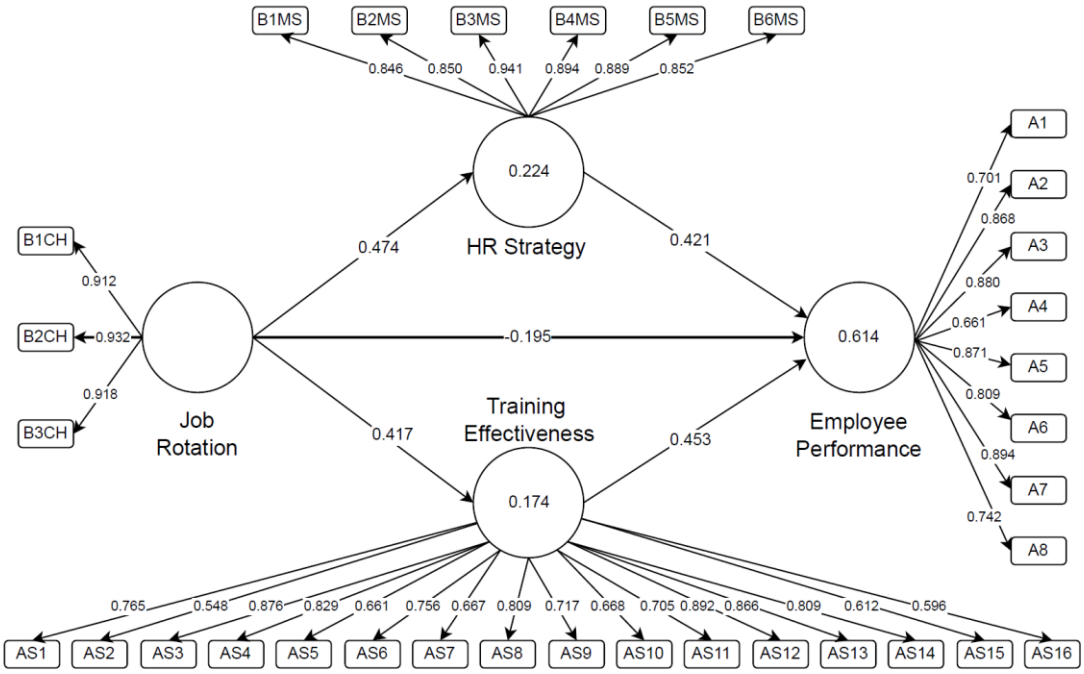
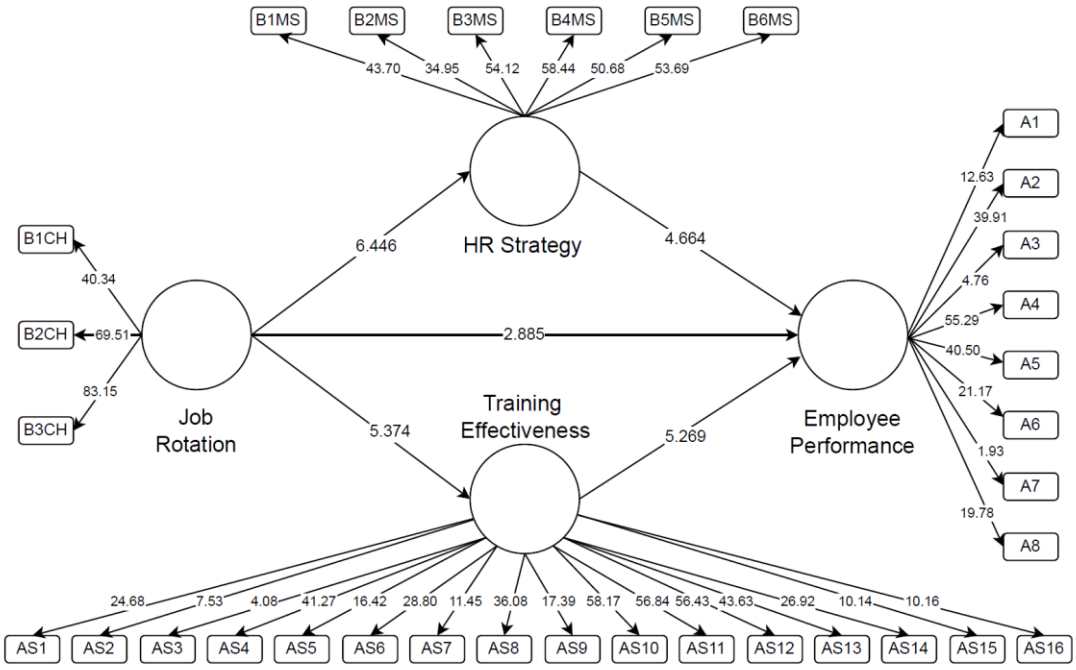


Figure 3: Structural equation model with significant t values



The coefficient of the path between job rotation and employee performance is -0.195 and the t value related to this path is 2.885. This indicates that whilst there is a direct relationship between job rotation and employee performance, job rotation negatively impacts employee performance. Job rotation explains 19% of the negative change in employee performance. The path coefficient between job rotation on human resources strategy is 0.474 and its corresponding t value, 6.44, has been calculated and it shows a direct and significant positive effect of job rotation on HR strategy. The path coefficient between job rotation on training effectiveness is 0.417 and its corresponding t value, 5.37, has been calculated. This shows a direct and significant positive effect of job rotation on training effectiveness. The summary of the results related to the hypothesis testing can be seen in Table 3.

Table 3: Path coefficients, significance values and direct hypothesis test results

Hypotheses	**Path Coefficient**	**Sig.**	**Hypothesis Outcome**
H1 Job rotation positively influences employee performance	-0.195	2.88	Disproven
H2 Job rotation positively influences HR strategy	0.474	6.44	Proven
H4 Job rotation positively affects training effectiveness	0.417	5.37	Proven

Effect of Mediating Variables

To investigate the effect of the mediating variables, direct, indirect, and total job rotation effects on employee performance and their significance are reported in Table 4. According to Table 4, the direct (t=2.88, -0.195) and total effects of job rotation (t=2.56, 0.294) on human resources performance are significant. Also, considering the significance of the indirect effect of job rotation on employee performance through HR strategy (t = 3.06, 0.206) and the significance of the indirect effect of job rotation on employee performance through training effectiveness (t = 4.27, 0.19), the mediating effect of these two variables is confirmed. In this way, job rotation has a positive and indirect effect on employee performance through HR strategy and training effectiveness. Therefore, the third and fifth hypotheses are proven.

Table 4: Direct, indirect and total job rotation effects on employee performance

Independent Variable	**Dependent Variable**	**Effect**		
Job rotation	Employee performance	Direct	Indirect	Total
		-0.195 t= 2.88	(H3) Mediator: HR strategy t = 3.306 and 0.206 (H5) Mediator: Training effectiveness t = 4.27 and 0.19	0.294 t = 2.56

Discussion

This study explored how job rotation impacts employee performance and the mediating effect of HR strategy and training effectiveness, in an Iranian petrochemical company, representing a dangerous and specialized industry that requires highly competent workers. The first hypothesis referred to the effect of job rotation on employee performance. The research reveals that job rotation reduces employee performance. Demonstrating that job rotation in highly skilled, dangerous industries can adversely impact employee performance. This finding expands on previous research by addressing an understudied industrial context and aligns with the suggestion from Mehdizadeh et al. (2020), that job rotation might not always be appropriate in roles with higher risks. As in such instances job rotation might generate stress and burnout due to the expectation of new tasks (Earney and Martinz, 2009; Lee and Lee, 2018), which might be more problematic in industrial and hazardous contexts. The employees within this research work in a high-risk, potentially dangerous job, and may not welcome job rotation as this could affect their performance and subsequent safety, supporting Lee and Lee's (2018) claim that job rotations may be seen as an obstacle by employees who require specialization in their role. It is also possible in contexts where informal networks play an important role in HR decisions such as in the Middle East (Alsarhan et al., 2021), that those selected for a job rotation might feel out of favor if they are not seeking a new challenge. To ensure future performance, organizations must transfer tacit knowledge (Schmidt et al., 2021), which is particularly important for the petrochemical sector as it relies on knowledge for safe and successful operation, yet job responsibilities are so specialized

that training takes a long time and obtaining trained workers is difficult. This makes for a delicate balance between ensuring employee performance and learning and sharing tacit knowledge. The second hypothesis studied the effect of job rotation on HR strategy, the results indicated that job rotation positively affects HR strategy. The relationship between HR strategy and job rotation has not been studied in previous research, but the relationship between HR strategy and employees' movement has been found to be connected (Aiko, 2021). The fourth hypothesis examined the effect of job rotation on training effectiveness; the results indicate that job rotation positively affects training effectiveness in the organization. This finding suggests that job rotation can lead to effective training by offering employees the potential to open horizons and further knowledge and skills through engaging in new job roles.

The hypotheses (3 and 5) which investigated the mediating variables (HR strategy and training effectiveness), showed that the mediating variables positively affect the employees' performance. Literature shows, effective training and HR strategy and development are aligned with occupational development and increases personal incentive, and that effective training can increase job satisfaction and reduce turnover (Saira et al., 2021). Potnuru et al. (2021) suggested that good HR practices should lead to employee training that improves employees' skills and therefore improves job performance and organizational effectiveness. Our work builds on these previous findings which explore outcomes of HR and training, by demonstrating that job rotation mediated by training effectiveness and HR strategy leads to positive employee performance. These findings highlight the need to ensure that training effectiveness and HR strategy are supported in the job rotation process because these act as mediating variables in ensuring job rotation leads to positive employee performance. Effective job rotation and training can be enhanced by ensuring that those being rotated work within experienced and supportive units and that job rotation should be emphasized as a development tool, alongside effective training (Núñez-Cacho Utrilla et al., 2022). Such support and training can help improve knowledge sharing and develop role clarity, which can improve employee performance (Templer et al., 2020).

Managerial and Training Implications

Managers who line manage high-risk technical workers, such as those in the petrochemical industry, who are exploring job rotation strategies should do carefully to avoid detrimental performance effects. Managers should carefully monitor employee performance and

incorporate performance evaluation into the job rotation process. Job rotation should be linked to effective HR strategy and training to ensure that those rotating jobs can perform in their new role. Managers and previous role holders should support staff both before and during the rotation (handover phase) to avoid overburdening them and support them to learn the job. Job rotation can be a valuable leadership development tool (Kubátová and Kročil, 2022), but it must be carefully planned in specialized and hazardous industries to align with HR strategy and training, preventing employee performance decline and potential danger. Employees who are forced into job rotations which they are not interested in, may achieve limited development and learning, as emotions play an important role in learning and cognitive skill development (Loon and Bell, 2018).

Limitations and Future Research

Job rotation may affect employee performance in similar, specialist, hazardous, and intense industries. Future research may determine the generalizability of these findings. As this research was conducted in Iran, which has a relatively unique context given the economic situation and the imposition of sanctions (Saadat et al., 2021), future research could also test the geographical and contextual generalizability of the findings, as job rotations may affect employee performance and be viewed differently in other contexts with different power-distance dynamics. The findings might be more generalizable to contexts where informal networks play an important part within HR departments (Alsarhan et al., 2021). This study only examined one organization, but future research could generalize the findings across the sector into similar industries. Rather than examining long-term causes, this study took a snapshot. Researching the emergence and development longitudinally of factors which influence job rotation and considering the mediating influence of factors such as burnout, work-family conflict and individual-organization fit, could extend our knowledge. It should be noted that whilst validity testing was conducted to confirm the validity of the scales used in this research, the scales adopted were not originally developed for the industrial or geographic context of this research. Future research could explore how concepts such as employee performance, HR strategy, training and job rotation are potentially different and can be effectively measured in hazardous industries and the Middle East. Finally, whilst the sample was representative of professionals within the Iranian petrochemical industry, it might not be indicative of the demographics in other specialist and hazardous industries and geographical

regions. Therefore, future research could explore other specialist and hazardous industries and geographical regions where the demographics within that industry might be different.

Conclusion

This research addresses the dearth of research into factors which influence the outcomes of job rotation and the potential negative consequences and the 'dark side' of job rotation (Foroutan et al., 2021), and how job rotation influences outcomes in high-risk and potentially hazardous industries where employees are required to undertake highly defined and specialist roles (Lee and Lee, 2018). It is crucial to understand the impact of job rotation and what drives employee performance in such hazardous job roles to ensure safety and sustainability. The results of this research indicate that job rotation affects employee performance, but the effect was negative and adverse. The research found this could be overcome with the use of effective training and positive HR strategy, acting as mediating variables, positively affecting employee performance. This highlights the importance of job qualification standards being satisfied, psychological evaluations being properly reviewed, and personnel and positions being a good fit for those undertaking a rotation.

Job rotation offers benefits that can include helping to create career trajectories, improving knowledge management, succession, and specialization. However, this research suggests that it should be carefully managed, particularly in hazardous industries like the petrochemical industry, where human capital is crucial to production efficiency.

References

Aiko, A.H. (2021), "Relationship between human resource strategies and strategic fit realization: A review of conceptual and empirical literature perspective from Japan," *Journal of Strategic Management,* Vol. 5 No. 2, pp.8-16.

Alsarhan, F., Ali, S., Weir, D. and Valax, M. (2021), "Impact of gender on use of wasta among human resources management practitioners", *Thunderbird International Business Review*, Vol. 63 No. 2, pp. 131–143.

Alsarhan, F. and Al-Twal, A. (2023), "Towards understanding the relationships between economics, tribalism and the use of the wasta informal network in the workplace", *Employee Relations: The International Journal,* Vol. 45 No. 4, pp. 925–943.

Al-Romeedy, B.S. (2019), "The role of job rotation in enhancing employee performance in the Egyptian travel agents: the mediating role of organizational behavior", *Tourism Review*, Vol. 74 No. 4, pp.1003-1020.

Al-Zoubi, M.O., Masa'deh, R. and Twaissi, N.M. (2022), "Exploring the relationship among structured-on-the job training, mentoring, job rotation, work environment factors and tacit knowledge transfer", *VINE Journal of Information and Knowledge Management Systems*, doi:10.1108/VJIKMS-06-2022-0199.

Arasanmi, C.N. and Krishna, A. (2019), "Employer branding: Perceived organisational support and employee retention – the mediating role of organisational commitment", *Industrial and Commercial Training*, Vol. 51 No. 3, pp.174-183.

Asawarungsaengkul, K. and Nanthavanij, S. (2008), "Optimization approach to hazard prevention budgeting problem", *International Journal of Industrial Engineering: Theory, Applications and Practice*, Vol. 15 No. 4, pp.330-340.

Bland, J.M. and Altman, D.G. (1997), "Statistics notes: Cronbach's Alpha", *British Medical Journal*, Vol. 314, pp.572.

Campion, M.A., Cheraskin, L. and Stevens, M.J. (1994), "Career-related antecedents and outcomes of job rotation", *Academy of Management Journal*, Vol. 37 No. 6, pp.1518-1542.

Chakraborty, D. and Biswas, W. (2020), "Articulating the value of human resource planning (HRP) activities in augmenting organizational performance toward a sustained competitive firm", *Journal of Asia Business Studies*, Vol. 14 No. 1, pp.62-90.

Chang, W.J.A. and Huang, T.C. (2005), "Relationship between strategic human resource management and firm performance a contingency perspective", *International Journal of Manpower*, Vol. 26. No. 5, pp.434-449.

Choi, S. and Rainey, H.G. (2010), "Managing diversity in US federal agencies: Effects of diversity and diversity management on employee perceptions of organizational performance", *Public Administration Review*, Vol. 70 No. 1, pp.109-121

Choo, S. and Bowley, C. (2007), "Using training and development to affect job satisfaction within franchising", *Journal of Small Business and Enterprise Development*, Vol. 14 No. 2, pp.339-352.

Collins, C.J. (2021), "Expanding the resource-based view model of strategic human resource management", *The International Journal of Human Resource Management*, Vol. 32 No. 2, pp.331-358.

Cool, K., Dierickx, I. and Jemison, D. (1989), "Business strategy, market structure and risk–return relationships: A structural approach", *Strategic Management Journal*, Vol. 10 No. 6, pp.507-522.

Cristini, A. and Pozzoli, D. (2010), "Workplace practices and firm performance in manufacturing: A comparative study of Italy and Britain", *International Journal of Manpower*, Vol. 31 No. 7, pp.818-842.

Davari, A. and Rezazadeh, A. (2014), *Structural Equation Modeling*, Jahad Academic Publishing Organization, Tehran.

Dernehl, C.U. (1966), "Health hazards associated with polyurethane foams", *Journal of Occupational Medicine*, Vol. 8 No. 2, pp. 59–62.

Earney, S. and Martins, A. (2009), "Job rotation at Cardiff University library service: A pilot study", *Journal of Librarianship and Information Science*, Vol. 41 No. 4, pp.213-226.

Finlayson, D.L. (2021), "A case for increasing exemplary followership in organizations", *Industrial and Commercial Training*, Vol. 53 No. 2, pp.175-188.

Fornell, C. and Larcker, D.F. (1981), "Structural equation models with unobservable variables and measurement error: Algebra and statistics", *Journal of Marketing Research*, Vol. 18 No. 3, pp.382-388.

Foroutan, T., Pasha Safavi, H. and Bouzari, M. (2021), "The ugly side of job rotation", *International Journal of Hospitality Management*, Vol. 95, pp.102929.

Gu, M., Li Tan, J.H., Amin, M., Mostafiz, M.I. and Yeoh, K.K. (2022), "Revisiting the moderating role of culture between job characteristics and job satisfaction: a multilevel analysis of 33 countries", *Employee Relations*, Vol. 44 No. 1, pp.70-93.

Ho, W.H, Chang.C.S., Shih, Y., and Liang, R.D. (2006), "Effects of job rotation and role stress among nurses on job satisfaction and organizational commitment", *BMC Health Services Research*, Vol. 9, pp.8.

Horak, S., Abosag, I., Hutchings, K., Alsarhan, F., Ali, S., Al-Twal, A., Weir, D., et al. (2023), "Questioning the appropriateness of examining guanxi in a wasta environment: Why context should be front and center in informal network research – A commentary on 'de-linking from Western epistemologies: Using guanxi-type relationships to attract and retain hotel guests in the Middle East'", *Management and Organization Review*, Vol. 19 No. 5, pp. 1040–1045.

Hulland, J. (1999), "Use of partial least squares (PLS) in strategic management research: A review of four recent studies", *Strategic Management Journal*, Vol. 20 No. 2, pp.195-204.

Jorgensen, M., Davis, K., Kotowski, S., Aedla, P. and Dunning, K. (2005), "Characteristics of job rotation in the Midwest US manufacturing sector", *Ergonomics*, Vol. 48 No. 15, pp.1721-1733.

Kher, H.V., Malhotra, M.K., Philipoom, P.R. and Fry, T.D. (1999), "Modelling simultaneous worker learning and forgetting in dual resource constrained systems", *European Journal of Operational Research*, Vol. 115 No. 1, pp.158-172.

Khoreva, V. and Wechtler, H. (2018), "HR practices and employee performance: The mediating role of well-being", *Employee Relations,* Vol. 40 No. 2, pp.227-243.

Kong, H., Okumus, F. and Bu, N. (2020), "Linking organizational career management with Generation Y employees' organizational identity: The mediating effect of meeting career expectations", *Journal of Hospitality Marketing & Management,* Vol. 29 No. 2, pp.164-181.

Kubátová, J. and Kročil, O. (2022), "A conscious leadership competency framework for leadership training", *Industrial and Commercial Training,* Vol. 54 No. 2, pp. 279-292.

Lee, Y. and Lee, J.Y. (2018), "A multilevel analysis of individual and organizational factors that influence the relationship between career development and job-performance improvement", *European Journal of Training and Development,* Vol. 42 No. 5, pp.286-304.

Loon, M. and Bell, R. (2018), "The moderating effects of emotions on cognitive skills", *Journal of Further and Higher Education,* Vol. 42 No. 5, pp. 694–707.

Malekzadeh, S. (2016), "Paranoia and perspective, or how I learned to stop worrying and start loving research in the Islamic Republic of Iran", *Social Science Quarterly,* Vol. 97 No. 4, pp. 862–875.

Mehdizadeh, A., Vinel, A., Hu, Q., Schall, M.C., Gallagher, S. and Sesek, R.F. (2020), "Job rotation and work-related musculoskeletal disorders: A fatigue-failure perspective", *Ergonomics,* Vol. 63 No. 4, pp.461-476.

Mehreen, A. and Ali, Z. (2022), "The interplay between employee development factors and succession planning in predicting employee performance: evidence from retail banks", *Industrial and Commercial Training,* Vol. 54 No. 3, pp. 528-543.

Middleworth, M. (2015), Is Job Rotation the Answer to Reducing Injury Risk?, Society for Human Resource Management. Available from: https://www.shrm.org/resourcesandtools/hr-topics/risk-management/pages/job-rotation-reducing-injury-risk.aspx.

Mujtaba, M., Mubarik, M.S. and Soomro, K.A. (2022), "Measuring talent management: A proposed construct", *Employee Relations,* Vol. 44 No. 5, pp.1192-1215.

Núñez-Cacho Utrilla, P.V., Grande-Torraleja, F.A., Moreno Albarracín, A.L. and Ortega-Rodríguez, C. (2022), "Advance employee development to increase performance of the family business", *Employee Relations*, Vol. 45 No. 7, pp.27-45.

Potnuru, R.K.G., Sahoo, C.K. and Parle, K.C. (2021), "HRD practices, employee competencies and organizational effectiveness: role of organizational learning culture", *Journal of Asia Business Studies*, Vol. 15 No. 3, pp.401-419.

Rai, A. and Maheshwari, S. (2020), "Exploring the mediating role of work engagement between the linkages of job characteristics with organizational engagement and job satisfaction", *Management Research Review*, Vol. 44 No. 1, pp.133-157.

Saadat, S., Aliakbari, A., Alizadeh Majd, A. and Bell, R. (2021), "The effect of entrepreneurship education on graduate students' entrepreneurial alertness and the mediating role of entrepreneurial mindset", *Education + Training*, Vol. 64 No. 7, pp. 892-909.

Saira, S., Mansoor, S., Ishaque, S., Ehtisham, S. and Ali, M. (2020), "Training effectiveness and employee outcomes: a study of an Australian manufacturing organization", *European Journal of Training and Development*, Vol. 45 No. 4/5, pp. 301-319.

Schmidt, R., Bell, R. and Warren, V. (2021), "Keeping the wheels of the automotive industry turning: the use of tacit knowledge by product development workers in a multinational automotive manufacturer", *Journal of Intellectual Capital*, Vol. 22 No. 6, pp.1106-112.

Soleimani, M., Dana, L.P., Salamzadeh, A., Bouzari, P. and Ebrahimi, P. (2023), "The effect of internal branding on organisational financial performance and brand loyalty: Mediating role of psychological empowerment", *Journal of Asian Business and Economic Studies*, Vol. 30 No. 2, pp.143-163.

Templer, K.J., Kennedy, J.C. and Phang, R. (2020), "Customer orientation: The interactive effect of role clarity and learning goal orientation", *Journal of Asian Business and Economic Studies*, Vol. 27 No. 3, pp.303-314.

Verbeek, T. and Mah, A. (2020), "Integration and Isolation in the Global Petrochemical Industry: A Multiscalar Corporate Network Analysis", *Economic Geography*, Vol. 96 No. 4, pp.363-387.

Wallo, A., Kock, H., Reineholm, C. and Ellström, P.-E. (2022), "How do managers promote workplace learning? Learning-oriented leadership in daily work", *Journal of Workplace Learning*, Vol. 34 No. 1, pp.58-73.