

The Impact of Job Design Factors on Job Satisfaction: A Study of Job Rotation, Enlargement and Enrichment in the Malaysian Public Sector

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Abstract: This study investigates the interrelationships among job rotation, job enlargement, job enrichment, and job satisfaction within the Malaysian public sector. Although these job design elements have been explored in various contexts, their specific interactions within the Malaysian public sector remain under-examined. Employing a non-probability convenience sampling method, the study analyzed data from 180 employees drawn from a total population of 389. A quantitative research methodology was utilized, with data subjected to correlation and multiple regression analyses. The findings indicate significant relationships among job rotation, job enlargement, job enrichment, and job satisfaction, with job rotation identified as the most substantial predictor of job satisfaction. These results provide valuable insights for public sector leaders, emphasizing the role of effective job design in enhancing employee satisfaction. Furthermore, the study underscores the importance of these variables in shaping positive work experiences and overall job satisfaction among employees in the public sector.

Keywords: *Job rotation, job enlargement, job enrichment, job satisfaction, Malaysia, public sector*

1. Introduction

The caliber of government representatives is essential for an organization's capacity to fulfill its vision and mission in the context of globalization. Both public and private organizations face intense competition in delivering services to the community, necessitating the need for excellence to meet rapidly changing circumstances. To stay competitive, organizations must rely on government employees who are highly skilled in their respective fields. The importance of a well-defined vision and mission is not limited to private enterprises; research indicates that public sector organizations also benefit significantly from aligning employee efforts with their strategic objectives. Employees' familiarity with an organization's mission and vision can positively impact job satisfaction and commitment (Dobrinić and Fabac, 2021).

Government employees must not be viewed solely as individuals but as members of a collective organizational environment, where attitudes, values, and behaviors vary both at the individual and group levels. This diversity, or human resource heterogeneity, requires effective management to motivate employees to perform their duties efficiently, thereby enhancing job satisfaction. Job satisfaction is a personal experience, influenced by whether employees feel valued in their workplace. Workers tend to view their jobs as opportunities to socialize, use their knowledge, earn money, and gain recognition (Zamiri, Heidari, Askari & Makvandi, 2020). Recent studies have shown that when employees understand the purpose of their organization through a clear mission, they are better able to engage with the strategy, improving both satisfaction and performance (Silva, Moreira & Mota, 2023).

Job satisfaction continues to be a critical area of research in organizational management due to its direct link to performance and efficiency (Imran, Ismail, Hussain & Zeb, 2021). Numerous management studies emphasize the significant correlation between job satisfaction and productivity. A report from the Society for Human Resource Management (SHRM) indicates that in 2015, 88% of employees in the United States expressed satisfaction with their jobs, with 37% categorizing themselves as "very satisfied." This pattern of increasing job satisfaction has been evident since 2013, suggesting a positive trend in employee sentiment toward their work. However, a significant portion of employees reported only moderate satisfaction, suggesting opportunities for further improvement (Gurchiek, 2016).

In Malaysia, efforts such as the reintroduction of the "Hot Job Rotation" system under the National Key Result Areas (NKRA) against corruption aim to address potential unethical behavior within government agencies. The

system encourages regular rotation in key enforcement departments, reducing opportunities for unethical relationships to develop (Nik Mahmud, 2013). Managing government employees, therefore, involves addressing critical factors like job satisfaction and implementing systemic changes to ensure transparency and accountability (Kim, 2023).

Research gap and purpose

Job satisfaction is a critical factor influencing both employees and organizational performance. It is a widely researched topic in various business settings. According to the SHRM, providing employees with diverse opportunities to engage in different activities and develop various skills can significantly enhance job satisfaction (Gurchiek, 2016). Conversely, low job satisfaction often results in high turnover rates, absenteeism, and substandard performance, which increase organizational costs and decrease profitability (Soeprapto, Tawil, Naim, Buamonabot & Thahrim 2024).

In government organizations, low job satisfaction can be a symptom of broader systemic issues such as poor performance, high absenteeism, and employee turnover. The factors leading to job dissatisfaction include low pay, unfavorable working conditions, conflicts with supervisors or colleagues, and unclear organizational policies. Employees with higher levels of job satisfaction tend to perform better and view their roles as engaging and fulfilling, unlike their less satisfied counterparts, who may find their jobs monotonous and exhausting. This disparity affects overall organizational productivity (Putra, Ma'ruf, Yunus, Harmen & Amin, 2023).

Recent studies support the notion that government agencies must closely monitor employee satisfaction levels and address factors contributing to dissatisfaction. Failure to bridge the gap between employees' needs and organizational policies can lead to a decline in morale and productivity (Loo, Wider, Lajuma, Jiang, Kenikasahmanworakhun, Tanucan & Ahmad Khadri, 2024). Moreover, research on job satisfaction has shown that compensation is not the sole driver of employee happiness. Naseer, Ahmad, Bano, Mehmood, and Ali (2021) revealed that employees were unhappy due to an unchallenging workload or poor organizational support. Furthermore, respondents reported high satisfaction, driven by treating uncomplicated with full professional sovereignty.

Ultimately, government employers must address working conditions and job satisfaction comprehensively. Poor work environments can lead to a decline in productivity and overall organizational performance (Akinwale, & George, 2020). Public servants who lack job satisfaction are also likely to experience reduced quality of work-life, which further affects organizational outcomes (Ameen, Al-Ali, Isaac & Mohammed, 2020). Therefore, comprehending the factors that affect job satisfaction—namely job rotation, job enlargement, and job enrichment—is crucial for enhancing employee morale and retention.

This study seeks to fill a significant gap in the current literature by exploring the unique relationships between job rotation, job enlargement, job enrichment, and job satisfaction specifically within the context of the Malaysian public sector. These variables were recognized as interdependent constructs, essential for promoting excellence in public sector management. By integrating job rotation, enlargement, and enrichment, the research highlights their impact on employee job satisfaction. This holistic approach can guide management in optimizing employee performance and engagement, offering a clearer understanding of how these factors predict job satisfaction. The study's findings offer practical insights to improve public sector operations and employee well-being, setting the foundation for the research questions.

2. Literature Review

Job Rotation: Job rotation refers to the organized process of shifting employees among various roles or responsibilities within a company (Tarus, 2014; Padula, Comper, Sparer & Dennerlein, 2017). This practice serves as a development tool for both managers and non-managers, promoting the acquisition of diverse skills and knowledge (Mohan & Gomathi, 2015). By rotating employees through various positions, organizations can enhance employee engagement, motivation, and overall job satisfaction among civil service employees (Ramdani, Barokah, Wulandari & Nurfalih, 2024).

Job rotation fosters a stimulating work environment by alleviating boredom and preventing burnout. It encourages multitasking and continuous training, allowing employees to develop a broader understanding of organizational operations. Research indicates that job rotation significantly enhances employee motivation, job performance, and satisfaction (Alaflaq, Aloqab & Al-Dakhli, 2024). Management can identify employees' strengths, optimizing their placement within the organization. However, it also incurs training costs and may require time for employees to adjust to new roles (Idris & Wahyudi, 2021). According to Sebt and Ghasemi (2021), job rotation contributes to learning, critical thinking skills, and ultimately enhancing human capital. They identify key factors to consider for effective job rotation, including system, development strategy, and schedule. The practice is associated with higher job satisfaction, as it enables workers to acquire new skills that keep them competitive in the job market.

Job rotation positively influences organizational commitment and job satisfaction, as supported by various studies showing its role in enhancing employee engagement and performance (Khan, Rasli, Yusoff, Ahmed, Rehman & Khan, 2014; Suleman, Bingab, Boakye & Sam-Mensah, 2022). A well-structured job rotation program can significantly enhance employee satisfaction, thereby strengthening the organization's competitive edge (Majd, Bell, Davoodi & Nasirifar, 2024). Although job rotation offers various advantages, it is not widely implemented across all organizations. A survey revealed that more than half (56%) of companies do not actively encourage job rotation, despite recognizing its benefits. The key advantages cited by respondents included gaining experience in different areas of the business (23%) and obtaining new insights into current roles (23%) (Goretsky, 2024).

In summary, job rotation serves as an effective strategy that can improve employee engagement, satisfaction, and overall organizational success. By promoting skill enhancement and cultivating a learning-oriented environment, companies can attract and keep high-performing talent. While there are challenges associated with its implementation, the advantages of job rotation make it a worthwhile approach for organizations looking to succeed in a competitive market.

Job Enlargement: Job enlargement refers to the process of broadening an employee's responsibilities by incorporating additional tasks into their role. This approach is associated with enhanced job satisfaction, increased motivation, and stronger organizational commitment (Aminu, 2022). Studies show that employees who experience job enlargement benefit from increased opportunities to demonstrate their abilities and gain job satisfaction (Harbani, Hidayat & Fauzi, 2022). Furthermore, job enlargement satisfies employees' lower-order needs, as outlined by Maslow's hierarchy, by providing job security and reducing monotony (Gichuki & Munjuri, 2018). However, excessive workload due to job enlargement can decrease social interaction, resulting in reduced motivation and overall job satisfaction (Yusof, Zainudin, Rawi & Isa, 2023).

Task variety is a crucial component of job enlargement that enhances employee motivation and prevents workplace boredom. Providing diverse responsibilities allows employees to utilize their full skill set, improving their engagement and performance (Linggawati, Harsasi & Maharani, 2023). Management should carefully structure job enlargement so that tasks do not become overwhelming or repetitive, ensuring that employees view them as manageable challenges (Tumi, Hasan & Khalid, 2022).

Job enlargement provides several advantages, such as enhanced productivity, better utilization of employee skills, and diminished monotony. When employees take on a wider variety of tasks, they tend to feel more appreciated and engaged in their work, resulting in increased job satisfaction (Tantua, 2022). Moreover, organizations can experience improvements in employee retention and engagement when job enlargement is effectively implemented. However, if not executed well, job enlargement may lead to employee burnout and a decline in performance due to excessive workloads (Njeri & Mary, 2020).

In summary, job enlargement is an effective tool to enhance employee satisfaction and organizational commitment when balanced correctly. By increasing task variety and leveraging employees' skills, organizations can foster a more engaged and productive workforce. However, careful planning is essential to prevent negative outcomes such as overwork and demotivation.

Job Enrichment: Job enrichment refers to broadening an employee's role by increasing their control, responsibility, and chances for personal development, ultimately boosting job satisfaction. This approach aims to enable employees to utilize their complete range of skills, granting them greater autonomy and authority in their decision-making processes (Davoudi, 2013; Choudhary, 2016). Studies show that organizations can enrich jobs by involving employees in key decision-making processes, offering greater responsibility and giving them the ability to self-evaluate their performance (Adeyemo, Sehoole & Cueno 2015; Ruiz-Palomo, León-Gómez & García-Lopera, 2020). This approach increases engagement and transforms routine tasks into more fulfilling experiences; hence, it increases job satisfaction (Marta, Supartha, Dewi & Wibawa, 2021; Kavya, 2024).

Job enrichment significantly influences employee motivation and performance. Enabling employees to leverage their skills and participate in meaningful activities, enhances their self-satisfaction, self-efficacy, and overall job effectiveness. When employees are trusted with additional responsibility and decision-making, they are more likely to feel motivated and driven towards higher performance goals (Marta, Supartha, Dewi & Wibawa, 2021; Tumi, Hasan & Khalid, 2022). Studies conducted in government sectors have shown that enriched job roles lead to greater job satisfaction and directly contribute to improved organizational performance (Hijazi, 2020; Demircioglu, 2021; Tumi, Hasan & Khalid, 2022).

There is strong evidence linking job enrichment to increased job satisfaction. According to Hijazi (2020), the implementation of good governance principles—including transparency, fairness, equality, accountability, participation, and integrity—resulted in higher job satisfaction levels among employees in Jordan's public sector. Additionally, Demircioglu (2021) emphasizes that job enrichment encourages both innovation and autonomy. This includes top-down innovations, which originate from senior leadership, and bottom-up innovations, which arise from employee teams, both of which positively impact job satisfaction. This increased sense of ownership over tasks provides opportunities for achievement and growth, expands motivation, leads to long-term employee satisfaction, and therefore results in organizational success (Tumi, Hasan & Khalid, 2022).

However, the impact of job enrichment can vary based on job type and employee demographics. Cimini, Lagorio and Gaiardelli (2023) discovered that while job enrichment had a positive effect on both knowledge workers and manufacturing systems, operators, and knowledge workers benefitted more significantly in terms of job satisfaction and performance. Additionally, García, Gonzales-Miranda, Gallo and Roman-Calderon (2019) noted that age and career stage may influence how workers respond to enriched job roles, suggesting that the millennial generation may be more receptive to increased responsibilities, while older employees might prioritize job stability over role enrichment.

In conclusion, job enrichment is an effective strategy for improving job satisfaction, motivation, and performance. When organizations give employees more control and responsibility, they create opportunities for personal growth and fulfillment, ultimately enhancing organizational outcomes. However, organizations must consider contextual factors such as employee demographics and job types to optimize the benefits of job enrichment.

Job Satisfaction: Job satisfaction is a vital issue in the public service sector because of its direct impact on organizational performance and effectiveness (Steijn & Van der Voet, 2019; Ng, Franken, Nguyen & Teo, 2023). It has a strong correlation with individual productivity and overall success (Memon, Khahro, Memon, Memon & Mustafa, 2023). Defined as a positive emotional state arising from job experiences, job satisfaction includes the satisfaction of personal needs and expectations related to job roles and workplace settings (Thompson & Phua, 2012; Niebuhr, Borle, Börner-Zobel & Voelter-Mahlknecht, 2022). It is a multifaceted construct influenced by factors such as rewards, recognition, and the work environment (Akinwale & George, 2020; Basalamah, 2021). Busque-Carrier, Ratelle and Le Corff (2022) emphasize that job satisfaction emerges when employees' basic needs are met, fostering workplace happiness and commitment.

In today's diverse workforce, demographic factors like gender, age, and nationality significantly influence job satisfaction (Adamopoulos, 2022). Leaders must recognize these impacts and tailor reward systems to address the varied needs of employees (Akinwale & George, 2020; Basalamah, 2021). Aligning job satisfaction with demographic needs can enhance productivity and employee engagement (García-Rodríguez, Dorta-Afonso &

González-De-la-Rosa, 2020; Adamopoulos, 2022). Effective management of diversity is essential; leaders who embrace best HR practices tend to improve overall job satisfaction (Belias, Rossidis, Papademetriou & Mantas, 2022).

Recent data from Malaysia shows an increase in job satisfaction, with 75% of employees expressing contentment, particularly in the chemical manufacturing sector at 88% (Randstad, 2016). There are notable differences in job satisfaction levels between the public and private sectors. Public sector employees frequently report greater satisfaction linked to their organizational commitment compared to their private sector counterparts (Agarwal & Sajid, 2017). Conversely, private sector employees tend to express higher satisfaction regarding aspects such as management hiring practices, the exchange of opinions and feedback, and rewards, in comparison to those in the public sector (Chaudhary, Vemuri, Cavaliere, Verma, Manoharan & Bharti, 2024).

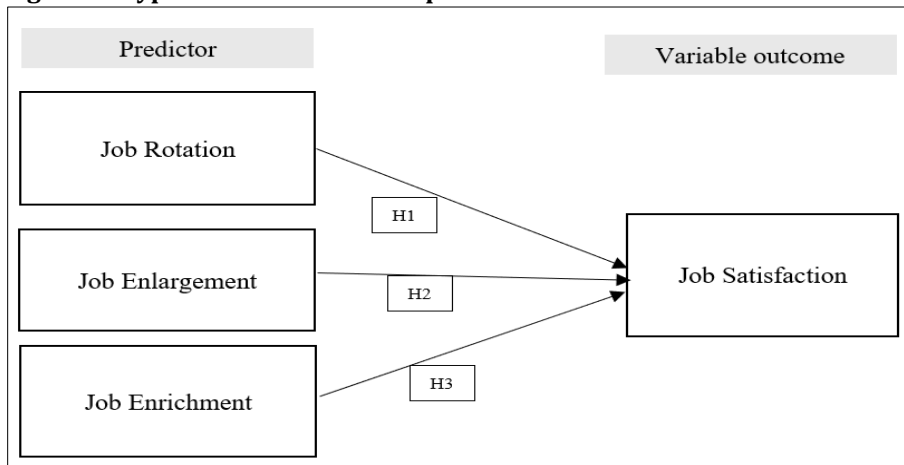
In conclusion, grasping the concept of job satisfaction demands a comprehensive perspective that takes into account differences across sectors and the dynamics of the workforce. Ongoing research is vital for creating effective methods to improve employee job satisfaction and productivity, particularly within the public sector.

Hypotheses development

This study outlines and examines three research hypotheses, with a discussion of their formulation following this introduction.

Job rotation, job enlargement, job enrichment, and job satisfaction are critical elements of organizational dynamics that significantly impact both individual and collective outcomes and behaviors (Harbani et al., 2022). Previous research indicates that increasing opportunities for job rotation, job enlargement, and job enrichment in the workplace can enhance employee motivation and performance. This suggests a strong link between these practices and job satisfaction (Suleman et al., 2022; Tantua, 2022; Tumi et al., 2022). A visual representation of the hypotheses is provided in Figure 1.

Figure 1: Hypothesized relationships



H1: There is a significant relationship between job rotation and job satisfaction.

H2: There is a significant relationship between job enlargement and job satisfaction.

H3: There is a significant relationship between job enrichment and job satisfaction.

3. Method

Research method: In this study, existing questionnaires that assess job rotation, job enlargement, job enrichment, and job satisfaction were adapted to suit the research context. To maximize respondent participation, data collection was carried out using paper-based surveys distributed by fieldworkers to the chosen sample. The collected data was subjected to thorough statistical analysis. Descriptive statistics, including frequency distributions, were used to summarize the data, while inferential statistics such as

correlation and regression analyses were applied to explore the relationships and predictive capabilities among the variables: job rotation, job enlargement, job enrichment, and job satisfaction. These analyses provided insights into the strength and direction of the associations, allowing for robust conclusions to be drawn regarding their interrelationships.

Population: The study included participants who held permanent positions within various public sector departments, meeting the defined inclusion criteria. The departments represented in the sample were: Commissioner of Buildings, One-Stop Centre, Management Services, Internal Audit, Building, Engineering, Health, Corporate Communication and Community, Valuation and Property Services, Town Planning and Landscape, Finance, as well as Laws, Licensing, and Enforcement. A total of 389 public sector employees ($N = 389$) participated in the study, ensuring a broad representation of different functional areas within the public sector.

Sampling: The research utilized a non-probability convenience sampling method to collect data from participants who were easily accessible to the researcher. The sample comprised only permanent employees from selected public sector departments, excluding temporary and part-time workers. This approach aimed to create a sample representative of the overall population. From a total population of $N = 389$ employees, G*Power software was used to calculate a minimum sample size of $n = 77$. The power analysis for multiple regression, which included three predictors, was carried out with an alpha level (α) of 0.05, statistical power of 0.80, and a medium effect size ($f^2 = 0.15$), following the recommendations of Erdfelder et al. (1996). To mitigate potential non-responses and other logistical challenges related to time and budget, the study adhered to the guidelines proposed by Bartlett et al. (2001) by increasing the minimum sample size by 10% to 30%. Consequently, this adjustment led to a targeted minimum sample size of 100 respondents. Table 1 provides a detailed demographic overview of the respondents.

Table 1: Demographic profiling of respondents

Variables		Frequency (N)	Percentage (%)
Gender	Male	128	71.1
	Female	52	28.9
Age	18 - 29	57	31.7
	30 - 39	55	30.6
	40 - 49	37	20.6
	> 50	31	17.2
	Total	180	100.0
Marital status	Single	66	36.7
	Married	114	63.3
	Divorced	-	-
Academic qualification	Total	180	100.0
	High school qualifications	79	43.9
	Pre-university qualification	42	23.3
	Certificate qualification	29	16.1
	Diploma	27	15.0
	Bachelor's degree	3	1.7
	Others	-	-
Department	Total	180	100.0
	Commissioner of Buildings	4	2.2

	One Stop Centre	3	1.7
	Management Services	12	6.7
	Internal Auditor	2	1.1
	Building	5	2.8
	Engineering	20	11.1
	Health	30	16.7
	Corporate Communication & Community	5	2.8
	Valuation & Property Services	12	6.7
	Town Planning and Landscape	30	16.7
	Finance	32	17.8
	Laws	2	1.1
	Licensing & Enforcement	23	12.8
	Total	180	100.0
Duration of service (years)	<1	19	10.6
	1 - 5	38	21.1
	6 - 10	26	14.4
	11 - 15	24	13.3
	16 - 20	17	9.4
	21 - 25	14	7.8
	26 - 30	2	1.1
	>31	40	22.2
	Total	180	100.0

Research Approach

The research methodology describes the strategy adopted by the researcher to achieve the research objectives, ensuring that the selected methods are suitable for the specific research questions posed (Kothari & Garg, 2019). This investigation utilized a quantitative research design and relied on a structured survey as the main data collection technique. A questionnaire was distributed to gather information from participants for statistical analysis, allowing the collected data to be quantified and generalized. By adopting a survey-based approach, the research aimed to systematically gather and analyze numerical data to explore patterns and relationships within the targeted population. This method is particularly effective for addressing research questions that require empirical data collection and statistical testing (Pathiranage, Jayatilake & Abeysekera, 2020).

Research design: The research design acts as a framework that outlines the methodology of the study, ensuring a systematic approach for the researcher to meet the research objectives (Creswell, 2018). In this study, a non-experimental design was utilized, which is typically applied to evaluate, forecast, and clarify the relationships among variables without direct manipulation (Sekaran & Bougie, 2016). More specifically, a correlational research design was used to explore two primary aims: first, to ascertain if a statistically significant relationship exists among job rotation, job enlargement, job enrichment, and job satisfaction; and second, to evaluate the strength and direction of these relationships within the target population (Saunders, Lewis & Thornhill, 2019).

Research instrument: The research utilized instruments to assess job rotation, job enlargement, job enrichment, and job satisfaction, enabling effective and economic data collection from a diverse group of respondents. This approach facilitated the gathering of information while minimizing any pressure on the

participants (Saunders et al., 2019). Before adopting the questionnaire, a thorough evaluation of the advantages and disadvantages of paper-based data collection was conducted. The benefits of paper-based questionnaires were found to outweigh the drawbacks, particularly in terms of generating higher response rates and enabling the collection of completed responses promptly. Moreover, the use of paper surveys facilitated real-time clarification of any ambiguities during the survey process, thus enhancing data accuracy. This method also provided an opportunity for the researcher to introduce the research topic personally, fostering a trusting environment that encouraged respondents to provide honest and thoughtful responses (Zikmund, Carr, Babin & Griffin, 2013).

The research used four adapted questionnaires initially designed by Tsuma and Omondi (2015) to investigate how job design influences job satisfaction among university staff. These questionnaires included 24 items that focused on job rotation, job enlargement, job enrichment, and job satisfaction. A five-point Likert scale was utilized to gauge participants' views and attitudes, ranging from 1 (strongly disagree) to 5 (strongly agree). To validate the instrument, a pilot test was carried out with 20 permanently employed public sector workers to evaluate face validity. For content validity, the questionnaires were reviewed by a public service practitioner and academic experts with doctoral qualifications in statistics and business management. This rigorous validation process ensured the robustness and accuracy of the data collection instrument, enhancing its methodological rigor and reliability (Saunders et al., 2019).

Data collection procedure: To streamline data collection, the study adopted a survey research approach, using a structured questionnaire as the primary instrument to collect standardized data from all participants. The questionnaire was administered to a representative group of employees in the Malaysian public sector. With 180 participants, the study secured a diverse and adequate sample size, improving the reliability and generalizability of the findings.

Data analysis: The survey data were first organized and visualized using Microsoft Excel. For a more detailed statistical analysis, SPSS version 28 was utilized. Correlation analysis was performed to explore the relationships between job rotation, job enlargement, job enrichment, and job satisfaction, with Pearson's correlation coefficient used to measure the strength and direction of these connections. Additionally, multiple regression analysis was applied to assess how job rotation, job enlargement, and job enrichment predict job satisfaction, offering a deeper insight into how these factors affect employee satisfaction levels.

4. Results

In this study, Cohen's guidelines for interpreting Pearson's correlation coefficient (r) were applied to assess the effect sizes of relationships between the variables. Specifically, a correlation of 0.1 was considered to represent a small effect, 0.3 indicated a moderate effect, and 0.5 or higher suggested a large effect, in line with the interpretations by Schober, Boer and Schwarte (2018). The Pearson correlation coefficients were calculated at a significance level of 0.01 (two-tailed) to measure the strength and direction of the relationships among the key variables: job rotation, job enlargement, job enrichment, and job satisfaction. These statistical measures provided a rigorous assessment of the degree to which the independent variables predicted variations in job satisfaction.

Descriptive statistics: Descriptive statistics were employed to display the data in table format, showing the frequencies and percentages of various demographic characteristics. A total of 180 participants ($N = 180$) took part in the study, as summarized in Table 1. The demographic information covered factors such as gender, age range, marital status, educational background, department, and length of service with the organization.

The results indicated that most respondents in the public sector were aged between 18 and 39, with 71.1% being male and 28.9% female participants. The respondents were asked to specify their departmental affiliations, which indicated that the largest representation came from the finance department (17.8%), followed closely by the health department and the town planning and landscape (16.7%), with licensing and enforcement (12.8%) and engineering (11.1%) also represented.

Moreover, a large proportion of the respondents (71%) indicated that they had been employed in the government sector for a period ranging from 5 to over 31 years. This extensive experience suggests that the participants had a thorough grasp of the research objectives and the significance of the questionnaire. This insight suggests that the public sector is prioritizing effective job design practices, particularly among its more experienced employees.

Reliability analysis: The Cronbach's alpha coefficients for sections B, C, D, and E of the questionnaire were computed to assess internal consistency and reliability. The results demonstrated excellent internal consistency, with all coefficients exceeding the acceptable threshold of $\alpha = 0.60$ (Hair, Celsi, Ortinau & Bush, 2010). Specifically, the reliability coefficients were as follows: job rotation scale ($\alpha = 0.656$), job enlargement scale ($\alpha = 0.796$), job enrichment scale ($\alpha = 0.728$), and job satisfaction scale ($\alpha = 0.776$). The results suggest that the scales applied in the questionnaire effectively and consistently measure the constructs under evaluation.

Correlation analysis: The analysis of correlations between job rotation, job enlargement, job enrichment, and job satisfaction showed coefficient values ranging from 0.225 to 0.816. Table 2 highlights that the correlation between job rotation and job satisfaction was particularly strong, with a coefficient of 0.816, indicating a strong positive relationship. In contrast, job enlargement had a much lower correlation of 0.225 with job satisfaction, pointing to a weak association. Additionally, a moderate correlation of 0.385 was found between job enrichment and job satisfaction. These results indicate varying degrees of relationships among the constructs, with correlations categorized as small (0.225), moderate (0.385), and large (0.816).

Table 2: Correlation analysis of job rotation, job enlargement, job enrichment and job satisfaction

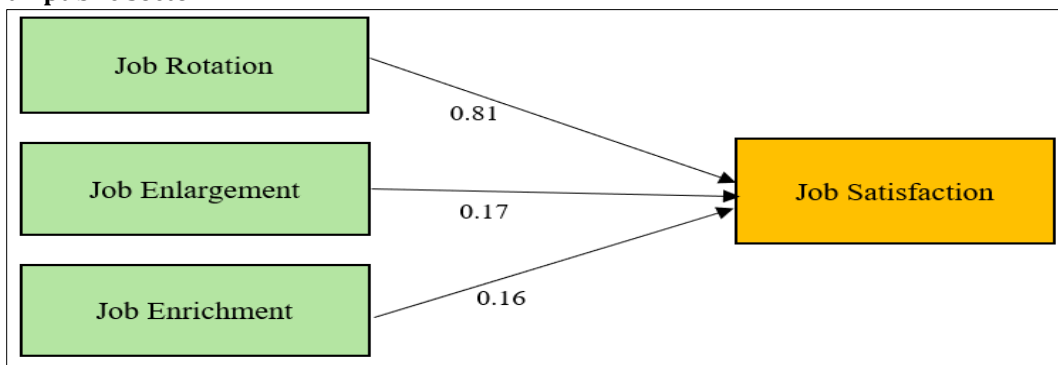
Variable		Job Satisfaction	Job Rotation	Job Enlargement	Job Enrichment
Job Satisfaction	Pearson Correlation	1	0.816**	0.225**	0.385**
	Sig. (2-tailed)		0.000	0.002	0.000
	N	180	180	180	180

**Correlation is significant at the 0.01 level (two-tailed).

Multiple regression analysis: In quantitative research, regression analysis is used to estimate the value of a dependent variable by analyzing one or more independent variables. This study utilizes multiple regression analysis to investigate how job rotation, job enlargement, and job enrichment, as independent variables, predict job satisfaction as the dependent variable (Hair et al., 2010).

The multiple linear regression results show that the independent variables explain 68% of the variation in job satisfaction, indicating a substantial effect size. The overall model is statistically significant, with an F-statistic of 83.02 ($p < 0.001$). Figure 2 highlights the notable relationships between job rotation, job enlargement, job enrichment, and job satisfaction. Additionally, the regression analysis confirms that job rotation ($B = 0.806$; $p = 0.000$), job enlargement ($B = 0.171$; $p = 0.007$), and job enrichment ($B = 0.159$; $p = 0.017$) are all significant predictors of job satisfaction.

Figure 2: Framework for job rotation, job enlargement, job enrichment and job satisfaction in the Malaysian public sector



The analysis of the relationships between job rotation, job enlargement, job enrichment, and job satisfaction confirms the hypotheses presented in Table 3. These results indicate that all the proposed hypotheses were accepted, suggesting a robust connection between the various dimensions of job design and employee satisfaction.

Table 3: Hypotheses accepted/rejected.

No.	Hypothesis	Result
H1	There is a significant relationship between job rotation and job satisfaction.	Accepted
H2	There is a significant relationship between job enlargement and job satisfaction.	Accepted
H3	There is a significant relationship between job enrichment and job satisfaction.	Accepted

Discussion of findings

A considerable amount of research has been carried out globally on job rotation, job enlargement, job enrichment, and job satisfaction. However, few studies have explored the interconnections between these four key constructs and how they influence one another (Suleman et al., 2022; Tantua, 2022; Tumi et al., 2022). Furthermore, the majority of existing literature pertains to various sectors outside of the public domain, leaving a noticeable gap in the exploration of these constructs within the public sector context. In particular, the Malaysian public sector has not been the focus of such investigations, resulting in a lack of benchmarks for this research (Alias, Othman, Hamid, Salwey, Romaiha, Samad & Masdek, 2018; Yusof, Zainudin, Rawi & Isa, 2023; Loo et al., 2024).

This study aims to achieve three main objectives: first, to determine if there is a relationship among job rotation, job enlargement, job enrichment, and job satisfaction; second, to analyze how well job rotation, job enlargement, and job enrichment predict job satisfaction in the Malaysian public sector; and third, to establish which of these factors—job rotation, job enlargement, or job enrichment—acts as the most significant predictor of job satisfaction in this context.

Determine if there are significant relationships between job rotation, job enlargement, job enrichment and job satisfaction.

The findings reveal a spectrum of relationships ranging from small to large, suggesting that each of these job design practices contributes to overall employee satisfaction. These results align with previous research, which has similarly identified connections among job rotation, job enlargement, job enrichment, and job satisfaction (Suleman et al., 2022; Tantua, 2022; Tumi et al., 2022).

The acceptance of the hypotheses posited in this study underscores the vital role that job design practices play in shaping employee perceptions of job satisfaction. This research emphasizes the necessity for organizations to integrate these job design strategies into their human resource management (HRM) frameworks. By doing so, organizations can enhance employee satisfaction and engagement, ultimately leading to improved performance and retention. The findings suggest that a comprehensive approach to job design is essential for fostering a productive work environment and achieving organizational goals.

Determine which job rotation, job enlargement, or job enrichment is the strongest predictor of job satisfaction in the Malaysian public sector.

The analysis conducted through multiple regression revealed that job rotation, job enlargement, and job enrichment collectively predicted job satisfaction within the Malaysian public sector. Notably, prior research has established that these three constructs are significant predictors of job satisfaction (Suleman et al., 2022; Tantua, 2022; Tumi et al., 2022; Alias, Othman, Hamid, Salwey, Romaiha, Samad & Masdek, 2018; Yusof, Zainudin, Rawi & Isa, 2023; Loo et al., 2024).

Job rotation has been identified as the most influential factor affecting job satisfaction among the predictors studied. This highlights the importance for organizations to focus on incorporating job rotation into their job design approaches. Meanwhile, it is essential to further investigate the effects of job enlargement and job enrichment on employee satisfaction. Overall, these findings emphasize the vital role that job design elements play in enhancing employee satisfaction, suggesting that organizations should consider these practices in their HRM strategies. Future studies should delve into the specific effects of job enlargement and job enrichment on

job satisfaction to gain a deeper understanding of how these elements interact within the organizational context.

Determine if job rotation, job enlargement, and job enrichment predict job satisfaction in the Malaysian public sector.

The results of this study, based on a multiple regression analysis, reveal that job rotation is the most significant predictor of job satisfaction for employees in the Malaysian public sector. This finding is consistent with earlier studies that have shown that job rotation, job enlargement, and job enrichment individually influence job satisfaction. However, it is important to note that there is a lack of literature that simultaneously investigates the important relationships between job rotation, job enlargement, job enrichment, and job satisfaction within the public sector context (Alias et al., 2018).

This study contributes uniquely to the existing body of knowledge by addressing this gap, highlighting the importance of job design elements in enhancing employee satisfaction. By focusing on these three constructs, the research underscores the need for public sector organizations to strategically implement job rotation, enlargement, and enrichment as part of their HRM practices to foster higher levels of job satisfaction among their employees. Future studies should further explore these dynamics to refine understanding and practical applications within the organizational framework.

Practical implications: The results of this study emphasize the important impact of job rotation on job satisfaction, as well as the predictive potential of job enlargement and job enrichment. These findings are vital for management and leadership in the public sector, as they point to the need for collaborative policies that enable employees to take an active role in designing their job roles and responsibilities. By reducing monotony and repetitive tasks, organizations can enhance employee engagement and satisfaction, which are essential for optimal performance.

Furthermore, the findings of this research go beyond just job design; they offer important insights for employees involved in strategic planning and forecasting. Considering the diverse challenges related to employee and customer behaviors in the public sector, it is essential to create a more engaging and fulfilling work environment. This strategy not only enhances individual job satisfaction but also improves overall organizational performance, effectively meeting the intricate demands of public sector stakeholders. Future studies should further investigate these aspects to deepen our comprehension of job design and its effects on employee outcomes (Suleman et al., 2022; Tantua, 2022; Tumi et al., 2022; Alias et al., 2018; Yusof, Zainudin, Rawi & Isa, 2023; Loo et al., 2024).

5. Conclusion and Recommendations

Limitations of the study: This research has an exploratory focus, and readers need to understand that the findings stem from a specific sample within the Malaysian public sector. As a result, these outcomes may not apply to other sectors, such as private businesses or nonprofit organizations in Malaysia. This limitation underscores the importance of being cautious when applying these conclusions to broader contexts or different organizational frameworks.

Recommendations: The insights gained from this study can guide strategic efforts to improve job rotation, job enlargement, job enrichment, and overall job satisfaction in the public sector. Organizations should look into implementing focused initiatives that resonate with these findings to cultivate a more engaged and satisfied workforce.

Future research: To expand on the current findings, future studies should conduct comparative analyses of effective management strategies for job design across various administrative contexts. Such investigations could deepen the understanding of best practices among public sector employees in Malaysia, ultimately enhancing job design frameworks aimed at boosting employee satisfaction and organizational effectiveness.

Conclusion: This study aimed to investigate the relationships between job rotation, job enlargement, job enrichment, and job satisfaction within the Malaysian public sector. Specifically, the study sought to determine

whether these job design elements not only correlate with job satisfaction but also predict it. Furthermore, the research aimed to identify which of these factors serves as the strongest predictor of job satisfaction. The research identified a notable gap in the existing literature regarding the relationships among job rotation, job enlargement, job enrichment, and job satisfaction within the public sector. This study helps fill that gap by providing robust evidence of how these factors interact. Importantly, the findings indicated that job rotation is the most significant predictor of job satisfaction among the variables analyzed. As a result, public sector organizations face the essential task of strengthening the links between job rotation, job enlargement, job enrichment, and job satisfaction. It is crucial for management to cultivate an environment that supports effective job design practices, allowing employees to rotate, enlarge, and enrich their roles and responsibilities. Implementing such strategies will not only improve job satisfaction but also enhance overall organizational performance and employee engagement.

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