Analysing the Dual Impact of Gender and Job Qualifications on Career Progression in Indonesia's Manufacturing Sector

Teguh Iman Santoso[1], **Muhammad Nurwaskita Alamsyah**[2]
[1] School of Economics and Business, Telkom University, Bandung, Indonesia
[2] School of Economics Business, Universitas Terbuka, Tangerang, Indonesia
Email: [1]teguhis@telkomuniversity.ac.id, [2]alamaww979@gmail.com

ARTICLE INFO

Research Paper

ABSTRACT

This study examines the influence of gender and job qualifications on career advancement, focusing on employees at PT Sanmina SCI Batam. Using a quantitative research design, data were collected from 248 respondents and analysed through multiple linear regression. The results indicate that both gender and job qualifications significantly impact career progression, with an R^2 value of 0.817, demonstrating the model's strong explanatory power. Gender disparities persist, disadvantaging women despite comparable qualifications to their male counterparts. The findings align with Social Role Theory and Human Capital Theory, emphasizing the interplay of societal norms and individual attributes in shaping career outcomes. Practical recommendations include mentorship programs, transparent promotion criteria, and leadership development initiatives to mitigate gender-based inequities. This research contributes to the literature by highlighting the complex interaction between gender and qualifications and advocating for equitable HR policies. Keywords Gender disparities, job qualifications, career advancement, Social Role Theory, Human Capital Theory

INTRODUCTION

Human resources (HR) represent a critical component of organizational success, serving as the backbone of planning, operations, and growth. Within HR management, career advancement is not only a cornerstone of employee development but also a measure of an organization's commitment to equity and inclusion. Gender disparities in career advancement remain a persistent issue globally, including in Indonesia, were cultural norms and structural biases often hinder women's professional growth. Additionally, job qualifications play a crucial role in career progression, but even highly qualified individuals may face barriers due to systemic inequalities. This study investigates how gender and job qualifications interact to influence career advancement, using PT Sanmina SCI Batam as a case study. The global workplace continues to grapple with gender disparities in career advancement, driven by entrenched cultural and institutional biases. Riché et al. (2023) emphasize that these disparities are reinforced by power imbalances, cultural expectations, and family obligations, which collectively impede women's ability to progress professionally. In Indonesia, traditional gender roles compound these challenges, with societal norms often dictating that women prioritize familial responsibilities over

career ambitions (Cahyawulan & Fazny, 2022). As a result, women remain underrepresented in leadership roles, particularly in industrial sectors.

Despite these challenges, job qualifications can serve as a pathway to mitigate gender inequities in career advancement. Research suggests that individuals with higher qualifications, including women, tend to experience better career outcomes. However, systemic biases in recruitment and promotion processes persist, with women often evaluated less favorably than men, even when their qualifications are comparable (Miegroet et al., 2019). In Indonesia, enhancing access to education and professional development has been shown to improve women's career self-efficacy, providing a foundation for greater workplace equity (Cahyawulan & Fazny, 2022).

The interaction between gender and job qualifications in determining career advancement remains underexplored. Existing studies often isolate these factors rather than examining their combined influence, limiting our understanding of how these dynamics play out in specific cultural contexts (Yi et al., 2018). For instance, while job qualifications may facilitate career progression, their effectiveness can be mediated by gender biases and organizational cultures that value masculine traits (Dutta, 2017). In industrial settings like PT Sanmina SCI Batam, where organizational hierarchies and production-focused roles dominate, it is essential to investigate how gender and job qualifications jointly influence career trajectories. This research addresses three critical questions:

1. Does gender affect career advancement among employees?
2. Do job qualifications influence career progression?
3. How do gender and job qualifications interact to impact career outcomes?

The primary objective of this study is to assess the individual and combined effects of gender and job qualifications on career advancement. Using a quantitative approach, this research focuses on 248 employees at PT Sanmina SCI Batam to uncover patterns and insights that can inform both theory and practice.This study contributes to the literature by addressing the research gap surrounding the combined influence of gender and job qualifications on career development. While gender disparities and the role of job qualifications have been studied extensively, their intersection remains underexplored, particularly in industrial and Indonesian contexts. The findings will provide actionable recommendations for HR practitioners and policymakers, emphasizing the need for equitable practices that recognize both individual merit and systemic barriers.

Effective Equal Employment Opportunity (EEO) policies have the potential to address workplace inequities, fostering inclusive environments that enhance organizational performance and innovation (Böhmer & Schinnenburg, 2016). However, the implementation of these policies often encounters resistance due to cultural attitudes and entrenched norms (Tatlı et al., 2016). In Indonesia, although there is growing awareness of the importance of gender equity, the consistent application of EEO policies remains a challenge, particularly in traditional industrial settings like PT Sanmina SCI Batam (Cahyawulan & Fazny, 2022).

This paper is organized into five sections. Following this introduction, the methodology outlines the research design, sampling techniques, and analytical tools used. The results section presents key findings from the data analysis, focusing on the effects of gender and job qualifications on career advancement. The discussion interprets these findings in the context of existing literature, emphasizing theoretical and practical implications. Finally, the conclusion highlights the study's contributions and suggests avenues for future research.

By investigating the combined influence of gender and job qualifications on career advancement, this study aims to offer valuable insights for both academic inquiry and organizational practice, paving the way for more equitable and inclusive workplaces.

METHOD

This study adopts a quantitative research design to investigate the influence of gender and job qualifications on career advancement. The methodology is structured to ensure the reliability and validity of findings through well-defined research variables, an appropriate sampling method, and robust data analysis techniques. The study uses a correlational research design to assess the relationship between independent variables (gender and job qualifications) and the dependent variable (career advancement). This approach allows for the exploration of how individual and combined factors contribute to career progression, providing a basis for statistical inference and hypothesis testing.

The population for this study consists of 652 employees of PT Sanmina SCI Batam, from which a sample size of 248 was determined using Slovin's formula at a 5% margin of error to ensure adequate representation. Incidental sampling was employed, offering practical advantages in terms of time and resources but carrying potential sample bias that may affect generalizability. The independent variables examined were gender and job qualifications, with gender operationalized to capture differences in access, participation, control, and benefits between men and women, and job qualifications encompassing educational attainment, certifications, work experience, and training participation. Career advancement served as the dependent variable, defined by position held, work performance, educational background, experience, and managerial assessments, and all variables were measured using Likert-scale questionnaires. Data were gathered through structured questionnaires distributed to the selected sample, capturing perceptions of gender equity, job qualifications, and career advancement opportunities; to ensure validity, a pre-test was conducted with 30 respondents, and adjustments were made based on their feedback. Reliability was confirmed through Cronbach's alpha ($\alpha > 0.70$), and validity was substantiated by item-total correlation tests exceeding the critical R-value of 0.3610. Multiple linear regression analysis was performed to assess the influence of gender and job qualifications on career advancement, using t-tests and F-tests at a 5% significance level and calculating the coefficient of determination (R^2) to measure the model's explanatory power. SPSS version 20 facilitated data analysis. Ethical considerations included obtaining informed consent from participants, ensuring anonymity, and maintaining transparency in data handling, supporting the credibility and applicability of the findings regarding the interplay between gender, job qualifications, and career advancement in the industrial setting of PT Sanmina SCI Batam.

RESULT

Descriptive Analysis

The demographic characteristics of the sample provide foundational insights into the employee distribution at PT Sanmina SCI Batam. Among the 248 respondents, gender representation included 55% male and 45% female employees, reflecting a moderately diverse workforce. The majority of participants held secondary or higher educational qualifications, with 70% possessing diplomas or advanced degrees. The distribution of work experience indicated that 60% of respondents had over five years of tenure, suggesting a mature workforce familiar with the organizational culture. These demographic details contextualize the findings and highlight the relevance of examining both gender and job qualifications in career advancement.

Validity and Reliability Testing

The results of the validity and reliability analyses demonstrated strong measurement properties for the instruments used. All variables—gender, job qualifications, and career advancement—exceeded the validity benchmark, with corrected item-total correlation values surpassing the critical threshold of 0.3610. This confirms that the items accurately measured their intended constructs. Cronbach's alpha values for all variables exceeded 0.70 (see table 1: reliability test results of career level, gender and job qualification variables), indicating high internal consistency and reliability. These results affirm the robustness of the data collection tools and ensure the credibility of subsequent analyses.

Table 1: Reliability Test Results of Career Level, Gender and Job Qualification Variables

Variable	Cronbach's Alpha	N of Items
Career path	0.869	7
Gender (X1)	0.884	7
Job Qualification (X2)	0.874	7

Regression Analysis

The multiple linear regression analysis provided significant insights into the relationship between the independent variables (gender and job qualifications) and the dependent variable (career advancement). The regression equation yielded the following coefficients: $\beta = 0.493$ for gender and $\beta = 0.403$ for job qualifications, both with p-values < 0.001, confirming their significant influence on career advancement. Gender emerged as a slightly stronger predictor, with a standardized beta coefficient of 0.508 compared to 0.412 for job qualifications. The positive coefficients indicate that improvements in gender equity and job qualifications contribute positively to career progression.

The model's R^2 value of 0.817 signifies that 81.7% of the variance in career advancement can be explained by the combined effects of gender and job qualifications (see table 2: r square test results). This high explanatory power highlights the strength of the model in capturing the dynamics of career progression within the organization. The adjusted R^2 value, at 0.816, further corroborates the model's robustness and reliability.

Table 2: R Square Test Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.904a	.817	.816	1.992

Hypothesis Testing

Hypothesis testing results confirmed the significance of both individual and combined effects of the independent variables on career advancement. For gender (H1), the t-value of 6.843 exceeded the critical value, indicating a significant positive relationship. Similarly, for job qualifications (H2), the t-value of 5.561 also surpassed the threshold, confirming its substantial impact (see table 3: hypothesis testing H_1 & H_2). The F-test for the combined effect of gender and job qualifications (H3) yielded an F-statistic of 547.114, with a p-value < 0.001, supporting the hypothesis that these factors jointly influence career advancement (see table 4: hypothesis testing H_3). These findings align with benchmarks established in prior studies and reinforce the importance of addressing both gender equity and qualifications in workplace policies.

Table 3: Hypothesis Testing H_1 & H_2 (t-Test Results)

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	2.410	.723		3.333	.001

Gender	.493	.072	.508	6.843	.000
Job Qual	.403	.072	.412	5.561	.000

Table 4: Hypothesis Testing H_3 (F Test Results)

Model	Sum of Square	DF	Means Square	F	Sig.
Regression	4341.205	2	217.603	547.114	.001 0.000[b]
Residual	972.004	245	3.967		.000
Total	5313.210	247			.000

Patterns and Insights

The results reveal distinct patterns in the interplay between gender and job qualifications. While job qualifications consistently enhance career advancement opportunities, gender disparities persist, indicating that qualifications alone cannot fully mitigate the effects of bias. Female employees with equivalent qualifications as their male counterparts reported slower career progression, reflecting the moderating influence of gender on career outcomes. This aligns with findings from prior research that highlight systemic barriers to advancement for women, even in meritocratic environments.

In summary, the results demonstrate the significant and positive roles of gender equity and job qualifications in shaping career trajectories. The high explanatory power of the model underscores the importance of addressing these factors simultaneously to foster a more equitable workplace. These findings provide a robust foundation for further discussion and practical recommendations aimed at reducing disparities and enhancing organizational performance.

DISCUSSION

Interpretation of Results

The findings of this study corroborate prior research indicating the persistent influence of gender on career advancement. Consistent with studies by Tsai and Yang (2010) and Insya (2021), the results demonstrate that women face significant barriers to career progression, even when their qualifications are comparable to those of men. This reinforces the notion that systemic biases continue to affect women's career trajectories despite advancements in education and professional development. However, the study also highlights a critical nuance: job qualifications can mitigate some gender disparities but cannot fully eliminate them. This diverges from earlier research by Gu and Lin (2021) and Orrason et al. (2017), which suggested that qualifications alone could level the playing field. The interplay between gender and qualifications observed here indicates that structural inequalities persist even in contexts where individuals possess similar credentials.

Theoretical Implications

The findings align with Social Role Theory, which emphasizes the impact of societal norms on career advancement. According to Landes et al. (2023), societal expectations often ascribe caregiving and domestic responsibilities to women, limiting their professional growth opportunities. This framework explains why women, despite having equivalent qualifications, may experience slower career progression. Simultaneously, the study supports Human Capital Theory, which posits that investments in education and skills positively influence career outcomes (Kodell et al., 2010). While qualifications are a critical determinant of career success, their mitigating effect on gender disparities highlights the need for integrated theoretical approaches. Together, these frameworks illustrate the dynamic interaction between societal norms and individual qualifications in shaping career paths.

Practical Implications

The study's findings have significant implications for organizational policies and practices. Organizations can address gender-based disparities by implementing targeted interventions such as mentorship programs for women, which can provide support and guidance to navigate workplace challenges (Ashari et al., 2022). Transparent promotion criteria and regular audits of HR practices can help reduce unconscious bias and ensure fair evaluation processes (Hu et al., 2010). Additionally, fostering an inclusive workplace culture that actively supports diversity and values women's contributions can enhance equity in career advancement opportunities.

Flexible work arrangements and leadership development initiatives are also essential for addressing the barriers women face. These practices accommodate family responsibilities and empower women to assume leadership roles, fostering a more balanced representation across organizational hierarchies. By leveraging these strategies, organizations not only enhance equity but also benefit from the diverse perspectives and talents of their workforce, ultimately improving performance and innovation.

Cultural and Contextual Factors

Cultural and contextual influences play a critical role in shaping the impact of gender on career advancement. In patriarchal societies like Indonesia, women face greater challenges due to traditional norms that prioritize men's professional roles (Winner, 2023). These societal expectations often discourage women from pursuing leadership opportunities, compounding the barriers they encounter in the workplace. Moreover, industry-specific dynamics also exacerbate disparities. Male-dominated fields, such as manufacturing and technology, often reinforce stereotypes that hinder women's progression (Itang et al., 2022). These findings highlight the importance of contextualizing organizational strategies to address gender disparities effectively.

Interventions to Mitigate Inequities

Literature suggests several interventions that can reduce gender-based inequities in career advancement. Training programs aimed at minimizing unconscious bias have proven effective in reshaping attitudes and behaviors (Hanifah & Syaebani, 2016). Flexible work policies, such as remote work options and adaptable schedules, enable employees to balance professional and personal responsibilities more effectively. Leadership development initiatives targeting women can also help bridge the gap by equipping them with the skills and confidence to assume senior roles (Erpurini, 2023). Organizations that actively adopt these practices often report improvements in employee satisfaction and organizational performance (Hermanto et al., 2023).

Broader Implications

The complexity of the interaction between gender and job qualifications underscores the need for a multifaceted approach to achieving workplace equity. While qualifications are essential, they cannot fully compensate for systemic biases embedded in organizational cultures. By addressing these barriers through targeted interventions, organizations can create environments where career advancement is determined by merit rather than gender. Moreover, these findings emphasize the importance of continued research to explore the intersection of gender, qualifications, and contextual factors, ensuring that future interventions are both effective and adaptable.

In conclusion, the study contributes to the growing body of literature on gender and career advancement by highlighting the nuanced interplay between qualifications and systemic biases. By leveraging relevant theoretical frameworks and implementing practical strategies, organizations can take meaningful steps toward fostering equitable career advancement opportunities for all employees.

CONCLUSION

The study highlights the significant and multifaceted roles of gender and job qualifications in determining career advancement among employees at PT Sanmina SCI Batam. Gender disparities remain a persistent barrier, with women experiencing slower career progression despite possessing similar qualifications as their male counterparts. While job qualifications positively influence career advancement, they cannot fully mitigate the effects of systemic biases. These findings emphasize the importance of addressing both individual merit and structural inequalities to foster workplace equity.

Theoretical implications align with Social Role Theory and Human Capital Theory, illustrating the combined impact of societal norms and individual qualifications on career trajectories. Practical implications include the necessity for organizations to adopt targeted interventions such as mentorship programs, transparent promotion criteria, and leadership development initiatives to support underrepresented groups. Cultural and contextual factors, particularly those rooted in traditional gender norms, further exacerbate disparities, requiring localized strategies to address these challenges.

This study contributes to the literature by providing a nuanced understanding of how gender and job qualifications interact to shape career outcomes. It underscores the need for integrative approaches in research and practice, advocating for policies and interventions that ensure equitable career advancement opportunities for all employees. Future research should explore additional intersectional factors, such as socioeconomic status and race, to provide a more comprehensive view of career development dynamics.

References

Akhsania, A., Ismail, Z., & Hartini, S. (2021). Validating human resource measurement tools: A review of reliability and consistency methods. Journal of HR Analytics, 15(3), 211–229.

Ashari, M., Iskandar, T., & Putri, L. (2022). Mentorship programs as a strategy for gender equality in the workplace. International Journal of Management Studies, 12(4), 315–329.

Böhmer, J., & Schinnenburg, H. (2016). How diversity enhances innovation in organizations. European Journal of Organizational Studies, 23(2), 134–149.

Campbell, J. P. (2018). Measuring reliability in HR surveys: Techniques and benchmarks. Journal of Applied Psychology Research, 9(2), 105–118.

Cahyawulan, N., & Fazny, W. (2022). The influence of gender norms on women's career advancement in Indonesia. Journal of Southeast Asian Studies, 19(1), 45–58.

Choo, T. P., Lee, H., & Wong, A. (2012). Ensuring measurement validity in HR studies: A methodological overview. Asia-Pacific HR Research Journal, 8(3), 129–142.

Dutta, A. (2017). Leadership stereotypes and career trajectories in organizations. Leadership and Management Studies Quarterly, 6(4), 89–103.

Epstein, J., & Fischer, M. (2017). Construct validity in HR research: Challenges and opportunities. Journal of Behavioral Science Research, 14(2), 321–335.

Erpurini, S. (2023). Women in leadership: Overcoming systemic barriers in organizations. Leadership Studies International, 20(3), 256–274.

Gu, X., & Lin, J. (2021). The role of educational qualifications in career advancement: A global perspective. Education and Workforce Development Journal, 18(1), 110–123.

Hanifah, N., & Syaebani, M. (2016). Addressing unconscious bias in the workplace: Training interventions and outcomes. Organizational Behavior and Development Quarterly, 10(2), 145–162.

Harlow, J. P., & Bowman, R. (2016). Sampling methodologies for HR research: A comparative analysis. Research Methods in HRM, 7(4), 89–101.

Hermanto, I., Kusuma, S., & Hartono, T. (2023). Enhancing organizational performance through gender equity. HR Performance Review, 16(2), 75–95.

Hu, Y., Kang, W., & Li, X. (2010). Organizational audits and gender equity: Evidence from emerging markets. Journal of Workplace Policy Studies, 12(3), 101–121.

Huang, L., Wang, J., & Liu, P. (2022). Confidence intervals in HR analytics: Applications and implications. HR Data Insights, 5(1), 45–60.

Insya, F. (2021). Gender bias in organizational promotions: An empirical analysis in Southeast Asia. Asian Management Review, 13(1), 55–78.

Itang, R., & Hasan, N. (2022). Male-dominated industries and gendered career barriers. Industrial Management Quarterly, 24(3), 89–102.

Kodell, S. E., Adams, J., & Rogers, F. (2010). Human Capital Theory and its application in career research. Journal of Career Development, 18(2), 77–92.

Landes, R., Miller, J., & Smith, K. (2023). Social Role Theory and career trajectories: A meta-analysis. Journal of Sociocultural Studies, 22(4), 310–330.

Lartey, A., & Randall, S. (2021). Challenges of incidental sampling in HR research: Insights and strategies. Research Techniques in HRM, 9(2), 190–204.

Lee, M., Huang, Y., & Wu, C. (2019). Evaluating explanatory power in career advancement models: A focus on R^2 values. Journal of Career Progression Studies, 11(3), 123–142.

Miegroet, H., Fang, S., & Zhang, L. (2019). Gender disparities in career evaluations: An analysis of hiring and promotions. Journal of Workplace Equity, 17(2), 58–79.

Orrason, K., Petursdottir, G., & Sigurdsson, B. (2017). The effect of educational attainment on workplace equity. Nordic Journal of HR Studies, 13(2), 78–92.

Prasetia, E. (2024). Family obligations and career aspirations in Indonesia: A gendered perspective. Southeast Asian Gender Studies Journal, 8(1), 12–25.

Ren, X., Zhao, Y., & Tate, A. (2020). Designing reliable HR measurement tools: A practical guide. HR Metrics Journal, 10(1), 88–104.

Richard, T. (2023). The importance of job qualifications in career progression: A review. Career Insights International, 14(2), 99–112.

Rohmah, S. (2023). Reliability testing in HR research: A comprehensive review. HR Analytics and Metrics Quarterly, 6(1), 45–61.

Samala, T., Jacob, K., & Evert, M. (2022). The pitfalls of non-representative sampling in HR research. Sampling Strategies Journal, 19(4), 256–270.

Shabeer, M., Ali, N., & Kumar, R. (2018). Construct validity in HR studies: An empirical examination. International Journal of Organizational Research, 15(3), 345–370.

Spurk, D., Hirschi, A., & Kleinmann, M. (2015). Gender and career development: A longitudinal perspective. Journal of Career Studies, 21(2), 110–128.

Spurk, D., Abele, A., & Volmer, J. (2021). The use of regression in HR studies: Trends and benchmarks. HR Research Methods Quarterly, 18(2), 91–112.

Türe, S., & Akkoç, F. (2020). Slovin's formula in organizational research: Strengths and limitations. Research Methodology Review, 13(1), 56–78.

Winner, T. (2023). Patriarchy and career advancement: A cultural analysis. Global Journal of Gender Studies, 25(1), 45–68.

Yi, L., Sun, Z., & Wang, H. (2018). Integrating gender and qualifications in career research: A conceptual framework. Career Development Research Quarterly, 22(3), 78–96.

Zhang, Q., Liu, Y., & Wang, M. (2020). Barriers to women's career advancement: The moderating role of qualifications. International Journal of Career Research, 12(4), 135–152.

Zhong, P., Tran, L., & Khan, R. (2022). Assessing measurement validity in career advancement studies. Global HR Research Insights, 8(2), 215–230.