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Research Article

The Effect of Hybrid Work System and Multiple Role Conflict on Employee Performance

Simanullang Arly Aprilita 1,*, Ribhan 2

- ¹ Management Department, Universitas Lampung, Indonesia; e-mail: arlyaprlita8@gmail.com
- ² Management Department, Universitas Lampung, Indonesia; e-mail: arlyaprlita8@gmail.com
- * Corresponding Author: Simanullang Arly Aprilita

Abstract: The advancement of technology within organizations supports companies in innovating their work systems more efficiently and effectively. Technological sophistication has transformed the organizational work environment by enabling hybrid models that combine remote and in-office work. This research aims to examine the influence of hybrid work arrangements and dual role conflict on employee performance in Indonesia's pharmaceutical sector. Data were gathered through a questionnaire distributed via Google Forms to 185 employees working in the pharmaceutical industry across Indonesia. The data analysis was conducted using SPSS version 27. The research instruments were tested for validity and reliability; validity was assessed through Confirmatory Factor Analysis (CFA MSA), including Kaiser-Meyer-Olkin (KMO), Anti-Image, and Factor Loadings. Normality was examined using the one-sample Kolmogorov-Smirnov test. Hypothesis testing employed multiple linear regression and t-tests. The findings indicate that both hybrid work systems and dual role conflict have a positive and significant impact on employee performance.

Keywords: Employee Performance; Hybrid Work System; Multiple Role Conflict.

1. Introduction

In recent years, significant technological and digital advancements have driven global modernization and innovation, profoundly influencing various sectors, including Indonesia's pharmaceutical industry. Technology, as an integrated system comprising software, hardware, and human interaction, facilitates digital transformation by enhancing information management and organizational responsiveness [1], [2]. The pharmaceutical industry in Indonesia has experienced substantial growth, supported by increasing healthcare demands and advancements in technology. Recognized as one of the eight priority sectors in the "Making Indonesia 4.0" roadmap by the Ministry of Industry 2023, the industry contributes significantly to national health resilience. This study focuses on pharmaceutical companies that manufacture a wide range of medicines and have implemented digitalization and hybrid work systems, particularly involving employees in administrative, marketing, research and development, and other office-based roles. Given the industry's stringent regulatory and technical standards, employees are required not only to maintain high productivity but also to adhere to strict operational procedures and quality standards, creating a high-pressure work environment that makes the study of hybrid work systems and dual role conflict particularly relevant.

The hybrid work system, which combines on-site and remote work, offers employees the flexibility to perform their tasks either at the office using company-provided facilities or remotely from locations such as home, cafés, or other comfortable environments using personal tools [3]. This model is often considered a form of smart working, emphasizing efficiency and effectiveness through flexibility, collaboration, and the optimal use of technology. Successful implementation of hybrid work requires a supportive and pleasant environment both in the office and at home [4]. Work flexibility, defined as the ability of employees to determine when, where, and how long they work [5], plays a crucial role in this

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system. According to insights gathered from employees at a pharmaceutical company, hybrid work enhances productivity and job satisfaction. However, it can also introduce challenges, particularly concerning work-life balance, as employees must navigate dual roles across professional and personal domains.

Previous studies have found that granting employees autonomy over their work hours and tasks leads to higher job satisfaction, which in turn enhances performance [6]. The hybrid work model has been shown to positively correlate with work-life balance [7], and perceived support in hybrid settings is linked to increased productivity. Satisfaction with collaborative tools and home workstations also serves as a mediating factor in this relationship [4]. However, some research indicates that working from home can negatively affect employee performance due to reduced interaction, which may hinder innovation and collaborative benefits [8]. Additionally, work-life conflict has been shown to impair employee performance by adversely impacting well-being, a relationship that is intensified by personality traits such as extraversion [9]. While some individuals view hybrid work as motivating and cost-efficient, allowing more family time and reducing commuting burdens, challenges remain, as hybrid arrangements can still give rise to work-related issues in both office and home environments.

In every organization, challenges often arise during periods of adjustment related to time and space, particularly as employees navigate their roles. A common issue within organizations is conflict, which may manifest as work-related disputes, interpersonal tensions, or conflicts between professional and personal roles. Role conflict, especially dual role conflict, occurs when individuals face competing demands from both their work and personal lives. Personal life conflicts stem from non-work-related sources such as family or social relationships, while work-related conflicts arise from high workloads, job pressure, and expanding responsibilities, often leading to increased stress. Dual role conflict disrupts personal well-being and depletes resources across both domains, often compelling employees to invest personal resources to maintain work-life balance [9]–[11]. Flexible work arrangements, while beneficial, can also increase workload intensity. These conflicts are not limited to task-related pressures but also include strained interactions among colleagues and supervisors. In Indonesia's pharmaceutical industry, such dual role conflict is particularly evident, as high job demands often lead to task redistribution, requiring employees to work longer hours and reducing their time for family, further intensifying role strain.

Employee performance plays a critical role in driving organizational success, influencing product quality, reputation, and overall competitiveness. It reflects the extent to which employees fulfill their responsibilities and contribute to company goals [12]–[14]. Factors such as leadership style, motivation, job satisfaction, work environment, and training significantly affect performance [15]. In the pharmaceutical industry, strict regulations demand high precision and accountability, often leading employees to prioritize work over personal matters and work extended hours to meet deadlines. Since the emergence of hybrid work systems in 2021, many companies, including those in the pharmaceutical and healthcare sectors, have continued to adopt this flexible model to enhance productivity while accommodating changing work dynamics [16]. These changes have reshaped employee interactions and work environments, making it essential to understand how hybrid work systems and dual role conflict jointly influence employee performance within organizations.

2. Preliminaries or Related Work or Literature Review

2.1. Hybrid Work System

The hybrid work system, which integrates on-site and remote work arrangements, offers employees flexibility in determining when and where they complete their tasks. Typically, the workweek is divided between collaborative tasks, such as meetings, training sessions, or mentoring, conducted at the office, and individual tasks, such as writing, reading, or programming, completed remotely [7], [17], [18]. This model provides employees with autonomy over their work schedules and supports operational efficiency through a combination of coordination, collaboration, and adequate digital tools [4], [19]. Many organizations have adopted hybrid work as a smart working strategy, allowing employees to manage professional duties while accommodating personal obligations, thus optimizing both productivity and work-life balance.

The hybrid work system, combining office and remote work, is influenced by factors like individual preferences, work-life balance, commute times, social interaction, and productivity. Its advantages include flexibility in time and location, cost and time savings, improved work-life balance, and increased productivity. However, challenges include reduced

employee interaction, communication difficulties, lack of focus when working from home, and data security risks. Key indicators of hybrid work effectiveness include job satisfaction, flexibility, motivation, and time management. This system allows employees to balance work and personal life while optimizing productivity but requires effective management to address its challenges.

2.2. Multiple Role Conflict

Role conflict is defined as a misunderstanding between the requirements and expectations of a role, influenced by conditions that impact role productivity [20]. It arises from unclear or conflicting expectations, leading to conflict [21]. Role conflict can occur when an executive believes their performance is evaluated differently across roles [20]. Multiple role conflict negatively impacts job performance by harming employee well-being, often weakening it as demands and pressures from work interfere with personal life [9], [10]. This conflict depletes resources in both work and non-work domains, forcing employees to invest personal resources to achieve work-life balance, thus making work-life conflict a stressful event that drains energy and causes distress [11].

The factors influencing role conflict include high job demands, lack of social support, family-friendly workplace policies, and poor mental and physical health. Excessive job demands and pressure from both work and personal life can lead to work stress that negatively impacts personal life. A lack of social support from family or colleagues exacerbates the conflict, while inadequate policies supporting flexible work hours can worsen the issue. Weak mental and physical health also contributes to prolonged stress. Role conflict, which consists of work-related and home-related conflict, can affect employee performance. Work conflict often arises from ineffective communication, while home conflict is caused by friction within the family, which impacts productivity and employee well-being while working from home.

2.3. Employee Performance

Employee performance is a multifaceted concept, with key components such as behavioral involvement and expected outcomes [22]. It is a measure of how valuable an employee's contributions are to an organization, affecting their retention and the overall success of the company [13]. Performance encompasses the fulfillment of tasks aimed at achieving individual, team, or organizational goals [12]. A supportive work environment, both physically and psychologically, enhances employee performance and productivity Employee performance includes the ability to maintain or increase productivity, meet work targets, and adapt to unconventional work conditions. However, challenges arise with the shift to remote work, including limited access to technology and managing conflicts between work and personal responsibilities.

Employee performance is influenced by several factors, including leadership style, motivation, job satisfaction, work environment, and training and development [15]. Effective leadership boosts employee motivation and productivity, while job satisfaction, stemming from a supportive work environment and good relationships, enhances performance. A healthy and conducive work environment, with adequate facilities and support from supervisors, also positively impacts performance. Additionally, training and development improve skills and competence, leading to higher performance. Performance can be measured through task performance, which involves technical knowledge and multitasking ability, and adaptive performance, which reflects the ability to adjust behavior to meet changing work demands [22].

2.4. Hypothesis

The hypotheses in this study are as follows:

H1: The hybrid work system has a positive and significant effect on employee performance in the pharmaceutical industry in Indonesia.

H2: Role conflict has a negative and significant effect on employee performance in the pharmaceutical industry in Indonesia.

3. Proposed Method

3.1. Research Design

This study uses a quantitative research design, focusing on the collection and analysis of numerical data through a survey approach [23]. Data is collected via a questionnaire distributed to employees working in the hybrid work system in the pharmaceutical and healthcare industries in Indonesia. The data is primary, obtained directly from respondents, and includes 28 statements measured on a Likert scale [24]. The population consists of employees in these sectors, while the sample is taken using a nonprobability sampling method, specifically Convenience Sampling [24]. The sample size, calculated using the formula of 5 to 10 times the number of indicators, is 185 employees, which is deemed sufficient for the study [23]. Additionally, the researcher employs observational methods to analyze the development of the pharmaceutical and healthcare industries [24].

3.2. Operational Definition of Variables

Operationalization of variables involves creating specific and clear operational definitions for the concepts to be measured [25].

No.	Variable	Operational Definition	Indicator	Scale
1	Hybrid Work System	A hybrid work system is a work system that is based on working remotely (from home) 2-3 days per week and the rest at the workplace (in the office). (Yosunkaya, 2023)	Job Satisfaction Work Flexibility Motivation Time Management	Likert
2	Multiple Role Conflict	Dual role conflict is defined as the congruence/incongruence or compatibility/incompatibility between an executive's standards or values and the behaviors prescribed for a role. (Netermeyer, 1996 in Majekodunmi, 2017)	1. Work-Home Conflict 2. Home-Work Conflict	Likert
3	Employee Performanc e	Performance is a concept that has many components and fundamentally one can distinguish elements of the performance process, namely behavioral involvement from expected results. (Roe, 1999 in Pradhan & Jena, 2017)	1. Task Performance 2. Adaptive Performance 3. Contextual Performance	Likert

Table 1. Operational Definition of Variables.

3.3. Research Instrument Test

Instrument testing ensures that the tools used for data collection are reliable and valid [26]. Validity testing measures the extent to which an instrument accurately captures the intended variables [27], and in this study, validity was assessed through Confirmatory Factor Analysis (CFA) using KMO, Anti-Image, and Factor Loading values (>0.50), confirming that the questionnaire is valid. Reliability testing evaluates the consistency of responses using Cronbach's Alpha, where a value of \geq 0.70 (or \geq 0.60 for exploratory models) indicates acceptable reliability [23]. If an item's removal increases reliability, it may be excluded to improve the instrument's internal consistency.

3.4. Research Hypothesis Test

Hypothesis testing is a systematic process used to examine assumptions or proposed relationships between variables using empirical data [24]. This study employs multiple linear regression to analyze the influence of more than one independent variable on employee performance, particularly focusing on how increased workloads in hybrid systems can intensify employee conflict, which significantly affects performance. SPSS Statistics 27 is utilized as the analytical tool due to its high accuracy in processing and interpreting data [26]. Multiple linear regression allows researchers to evaluate the relative impact of each independent variable on the dependent variable [28], while the T-test is used to determine whether individual variables have a significant effect by comparing the calculated t-value with the critical t-table value [24].

4. Results and Discussion

4.1. Instrument Test Result

4.1.1 Validity Test Result

Validity testing assesses the accuracy of research data. In this study, validity was tested using SPSS version 27 through factor analysis, which is considered appropriate if the Kaiser-Meyer-Olkin (KMO) value exceeds 0.50 and Bartlett's Test is significant, indicated by a value less than 0.05.

Table 2. Validity Test Result.

Variable	Item	KMO- MSA	Barttlet's Test	Anti-Image Correlation	Loading Factor	Result
	X1.1	0,862	0,000	0,863	0,580	Valid
	X1.2			0,879	0,662	
	X1.3			0,859	0,595	
Hybrid	X1.4			0,868	0,623	
Work	X1.5			0,886	0,675	
System	X1.6			0,802	0,688	
	X1.7			0,732	0,676	
	X1.8			0,868	0,667	
	X1.9			0,872	0,540	
	X2.1		0,000	0,901	0,697	Valid
	X2.2			0,889	0,690	
	X2.3	0,860		0,846	0,670	
Multiple Role	X2.4			0,858	0,689	
Conflict	X2.5			0,843	0,774	
	X2.6			0,857	0,734	
	X2.7			0,814	0,791	
	X2.8			0,878	0,772	
	Y.1	0,785	0,000	0,800	0,727	Valid
	Y.2			0,801	0,623	
	Y.3			0,713	0,781	
	Y.4			0,779	0,718	
	Y.5			0,693	0,713	
	Y.6			0,617	0,795	
Employee Performance	Y.7			0,794	0,543	
1 crioimance	Y.8			0,802	0,576	
	Y.9			0,754	0,557	
	Y.10			0,825	0,702	
	Y.11			0,852	0,590	
	Y.12			0,848	0,528	
	Y.13			0,778	0,658	

Table 2. shows that the KMO values for the hybrid work system (0.862), dual role conflict (0.860), and employee performance (0.785) variables all exceed 0.50, while Bartlett's Test values are 0.000 (<0.05), indicating that factor analysis is appropriate. Additionally, Anti-Image Correlation values for all items across the three variables are >0.50, supporting further analysis. In the first test of the hybrid work system, items X1.1 to X1.9 were valid (factor loadings >0.50), but X1.10 and X1.11 were invalid and removed. The second test confirmed all remaining items as valid. For the dual role conflict variable, all nine items were valid with

factor loadings >0.50. In the employee performance variable, five out of 18 items (Y.1, Y.2, Y.7, Y.10, Y.14) were invalid and removed; the second test showed that the remaining 13 items were valid.

4.1.2 Reliability Test Result

Reliability testing measures how consistently an instrument assesses the intended concept [24], by evaluating respondent consistency across questionnaire items.

Table 3. Reliability Test Result.

Variable	Cronbach's Alpha	Result
Hybrid Work System	0,799	Reliable
Multiple Role Conflict	0,852	Reliable
Employee Performance	0,750	Reliable

Based on Table 3, the reliability test results for the variables of hybrid work system, dual role conflict, and employee performance show Cronbach's Alpha values greater than 0.70, indicating that the instruments are reliable, trustworthy, and consistent.

4.2. Results of Quantitative Analysis and Hypothesis Testing

Table 4. Multiple Linear Regression Test Results and Hypothesis Testing.

Coefficients						
		Unstandardized Coefficients		Standardized Coefficients		
Model		В	Std. Error	Beta	t	Sig.
1	(Constant)	36,102	2,984		12.099	0,000
	Hybrid Work System	0,340	0,079	0,302	4,292	0,000
	Multiple Role Conflict	0,184	0,057	0,227	3,224	0,001
a. Dependent: Employee Performance						

The multiple linear regression analysis shows that the hybrid work system has a regression coefficient of 0.302 (sig. 0.000) and dual role conflict has a coefficient of 0.227 (sig. 0.005), both indicating a positive and significant effect on employee performance. This means that increases in either the hybrid work system or dual role conflict are associated with increased employee performance, although the absence of these variables would imply no employee performance outcome, as no constant is included in the regression model.

4.3. Discussion

4.3.1 The Impact of Hybrid Work Systems on Employee Performance

The hybrid work system has a significant partial effect on employee performance, as shown by the t-test result (t = 4.292 > 1.163). This finding aligns with [29], who reported that hybrid work positively influences employee performance by enabling flexibility, fostering strong work relationships, and supporting high job engagement. According to Saritha, hybrid work enhances productivity, facilitates better collaboration, builds trust between supervisors and employees through autonomy, and promotes workplace efficiency by allowing tasks to be completed from flexible locations.

Descriptive analysis of responses from 185 participants supports this, indicating positive impacts of hybrid work on employee performance. The highest mean score (4.48) was for the statement that hybrid work allows employees to spend more time with family while working from home. The second highest (4.44) showed employees appreciate cost savings from reduced commuting and dining out. However, some reservations remain, as shown by a lower mean (4.07) on satisfaction with hybrid work implementation, indicating that not all respondents were fully content with this system.

4.3.2 The Influence of Multiple Role Conflict on Employee Performance

Multiple role conflict has a positive and significant partial effect on employee performance, as indicated by a t-test where the calculated t-value exceeds the critical value and the significance level is below 0.05. Although theory often suggests a negative impact, with studies like [9] highlighting how dual role conflict can harm performance and well-being, this study found otherwise in the pharmaceutical industry. Here, even when employees experience high role conflict, their performance remains strong as they prioritize job responsibilities over personal disruptions, suggesting conflict can also serve as a motivator for professional focus.

Descriptive analysis of 185 respondents supports this, with the highest mean (4.02) on the item indicating employees often reschedule family plans to fulfill work duties, reflecting increased professionalism under pressure. However, the lowest mean (3.37) reveals that some respondents feel family issues can interfere with work responsibilities, causing delays or reduced task completion. This suggests that while dual role conflict may boost performance in some cases, unresolved home-related issues can still hinder productivity.

5. Conclusions

This study concludes that both hybrid work systems and dual role conflict have a positive and significant impact on employee performance in Indonesia's pharmaceutical industry. Hybrid work arrangements enable employees to spend more time with family while maintaining productivity, and dual role conflicts, rather than reducing performance, appear to motivate employees to prioritize work responsibilities over personal matters, enhancing overall performance. However, the study is limited by its focus on a single industry and geographic region, which may not fully represent other sectors or cultural contexts. Future research should explore other industries, include broader demographic samples, and consider additional moderating variables such as employee well-being or organizational support to provide deeper insight into the relationship between work systems, role conflict, and performance.

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