
The Role of Moderate Transformational Leadership and Flexible Role Orientation in Mediating Effect of Work Engagement on The Influence of Role Conflict and Role Ambiguity on Innovative Work Behavior

Riza Dwi Agni¹, Hunik Sri Runing Sawitri²

¹Sebelas Maret University, Economic and Bussines Faculty,
Surakarta, Indonesia

²Sebelas Maret University, Economic and Bussines Faculty,
Surakarta, Indonesia

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Abstract

In such a dynamic environment, the emphasis on innovation has become paramount for achieving success. The innovative behavior displayed by employees is a crucial attribute, and extensive research has underscored the favorable impact of innovation. However, the public sector in Indonesia is undergoing a significant period of transition due to bureaucratic reforms. As a result of increased job demands that are not met with sufficient resources, role conflict, and role ambiguity emerge. This study focuses on how role conflict and role ambiguity can influence innovative work behavior through the mediation of work engagement. The study also comprehensively aims to examine how flexible role orientation and transformational leadership moderate the effects of role conflict and role ambiguity on innovative work behavior through the mediation of work engagement. The research was conducted among employees in the public sector within the environment of the Central Bureau of Statistics (BPS) in North Sumatra Province. A total of 520 respondents were selected as the sample from a population of 899, using proportional stratified random sampling. PLS-SEM using Smart PLS 3.0 was employed for data analysis. The findings indicate that role conflict and role ambiguity influence innovative work behavior, while transformational leadership and flexible role orientation were unable to moderate the relationship between role conflict and role ambiguity with innovative work behavior through the mediation of work engagement. The implication is that management can cautiously enhance role conflict to improve innovative work behavior, as role conflict can enhance innovative work behavior but may reduce work engagement.

Keywords: role conflict, role ambiguity, innovative work behavior, transformational leadership, work engagement, flexible role orientation

1. Introduction

In today's fast-changing economic landscape, innovation plays a crucial role in enabling businesses to adapt and has advantage of it (Afsar et al., 2020). In such a dynamic environment, the emphasis on innovation has become paramount for achieving success (Wang, 2021). The ongoing pursuit of innovation is a fundamental driver of sustained organizational success. Jong and Hartog (2010) find that the innovative behavior displayed by employees is a crucial attribute, and extensive research has underscored the favorable impact of innovation. Recognizing the challenges posed by a highly competitive organization, innovative work behavior, which includes activities such as generating, adopting, new ideas implementation, and methods of work, has been acknowledged as a crucial factor. However, to achieve this priority, novel ways of service delivery must be deliberately engaged. Organizations utilize innovative work behavior to stay relevant, maintain a competitive advantage, and achieve long-term growth and survival (Janssen et al., 2004). Consistently foster and effectively introduce innovations, organizations must focus on promoting innovative work behavior across the entire workforce, rather than solely relying on employees in positions specifically dedicated to innovation.

The presence of innovative work behavior serves as a valuable asset for companies aiming to achieve successful innovation within a dynamic business environment (Kanter; Yuan & Woodman, 2010). Creating innovative work behavior often requires operating within a challenging or demanding work environment (Ma et al., 2021). Situational factors present in the work environment, known as stressors, can be exerted to have a substantial influence on individuals (Bliese et al., 2017). The negative effects of stressors on individuals have been overlooked despite their significance as influential factors in the work environment. Currently, the public sector is undergoing a significant transition period, resulting in the gradual diminishing of the labor cost advantage. In general, there is a widely held perception of amplified role stress within the government sector, marked by elements such as role conflict, role ambiguity or uncertainty, escalated workload, and heightened negative feedback. This perception arises from the organizational restructuring episode (Swanson & Power, 2001).

Previous studies have primarily focused on factors that support the growth of innovative work behavior, overlooking the presence of inhibiting factors such as role conflict and role ambiguity (Maden & Eyiusta, 2021). Role conflict poses significant obstacles to achieving individuals' job goals and career development (LePine et al., 2005). There have been limited studies focusing on the influence of work stress on innovative work behavior (Wang, 2021). However, there are inconsistencies in previous research. Despite the recognition of a significant relationship between stress and innovation, previous findings have yielded inconsistent conclusions (Montani et al., 2020). Certain studies suggest that the connection between conflict and creativity does not show a clear positive or negative pattern. Based on previous findings, it can be concluded that

innovative behavior is influenced by work engagement, with the direction of the relationship depending on the levels of role conflict and role ambiguity.

Considering the extensive occurrence of stressors and the inconclusive research outcomes, it is crucial to understand how stressors can promote innovation behavior. This forms the central issue we intend to tackle. However, transformational leadership can clarify the relationship between role conflict and work engagement (Breevaart & Bakker, 2018), where work engagement has been found to influence innovative work behavior. When faced with stress, the activation of job resources is enhanced, which in turn motivates individuals to successfully fulfill their job tasks (Crawford et al., 2010). The investigation begins by examining the direct effects of role conflict and role ambiguity on innovative work behavior focusing on the internal factor that influences individuals. The study focuses on how work engagement and job demand such as role conflict and role ambiguity collaborate to influence innovative work behavior. This research utilizes the mediation pathway of work engagement as an intermediary between role conflict and role ambiguity in innovative work behavior. Furthermore, a model is developed to establish a link between role conflict, role ambiguity, and innovative work behavior, incorporating two moderators to gain a better understanding of this relationship from the perspective of the Job Demands-Resource (JDR) framework. The study also comprehensively considers flexible role orientation and transformational leadership as moderators shaping the effect of role conflict and ambiguity on innovative work behavior.

Maximizing individual potential is a crucial function fulfilled by transformational leadership. Extensive evidence supports the existence of a connection between transformational leadership and employee behavior. Additionally, transformational leadership acts as a primary catalyst for reducing employees' role conflict by promoting open discussions and fostering a deeper comprehension of diverse viewpoints. This contextual effect offers valuable insights into the relationship between role conflict and innovative behavior (Breevaart & Bakker, 2018). As previously stated by Bass (1985), leaders who possess key characteristics such as idealized influence, intellectual stimulation, individualized consideration, and motivation inspiration can influence their followers. First, leaders who exhibit idealized influence can serve as role models, earning the trust and respect of their followers. Second, inspiring leaders motivate their followers by instilling a sense of purpose and meaning in their work. Third, leaders who stimulate intellectual growth encourage innovation, challenge assumptions, reframe problems, and approach situations from different perspectives. Finally, leaders who provide individualized consideration attend to the unique needs of their followers, acting as coaches and mentors.

Employees with a flexible mindset are willing to take on diverse tasks and have a clear understanding of their responsibilities, challenges, and goals within their job. They do this to benefit both their team and the organization (Parker et al., 1997). Employees who struggle to

adapt to different roles may find it difficult to understand and respond to ambiguous or conflicting job requirements in their work environment. As a result, they may become discouraged and lose enthusiasm for their work. Having a flexible mindset is key to how employees react to situational conditions in the workplace. This means that employees who struggle to adapt are less likely to be influenced by external factors in their work environment (Maden & Eyiusta, 2021).

1.2 Literature Review

Job Demand – resource Theory

This study focuses on clarifying the relationship between role conflict and role ambiguity in innovative work behavior based on the Job Demands-Resource theory (Bakker et al., 2023). This theory integrates the relationship between job demands, job resources, and motivational factors such as engagement and burnout. According to this theory, individuals can assess the level of work-related stress and respond with appropriate behaviors. The theory states that a balance between job demands and resources is necessary to achieve optimal performance. When individuals have their needs met through sufficient resources and experience stress that presents growth opportunities, they tend to exhibit an inclination toward engaging in innovative behaviors. Specifically, when higher levels of role conflict are experienced and transformational leadership is exerted, there is a greater likelihood of individuals innovating to carry out their work plans (Breevaart & Bakker, 2018).

The job demand-resource model suggests that favorable outcomes are observed when there is a harmonious equilibrium between job resources and demands (Bakker et al., 2023). This theory is based on the principle that job demands deplete resources and are positively associated with fatigue, which leads to job burnout and reduce work engagement. In parallel, job resources contribute to the attainment of job-related objectives and the cultivation of work engagement, thereby alleviating job burnout (Kilroy et al., 2020). Firstly, job resources enable individuals to conserve their resources and enhance their ability to meet job demands. Secondly, in the face of stress, job resources are strengthened in their activation, thereby motivating individuals to effectively carry out job tasks (Crawford et al., 2010). The basic concept at the core of this theory is that people go through two separate mental processes when dealing with varying levels of stress and motivation. In one process, individuals experience a reduction in energy as a result of excessive job demands and a negative work environment, which leads to the loss of important resources. The other process is related to motivation, where the resources individuals value or require have the potential to serve as incentives, fostering increased engagement in work and supporting career advancement (Bakker & Demerouti, 2014).

Role Conflict

According to the principle of the chain of command, it is expected that orders should only be received by an individual from one superior. The presence of dualism in the chain of command has several consequences, including overall performance decline, conflicts, low supervisor-subordinate relationships, and decision-making processes (Matyja & Zublewicz, 2020). Violation of the chain of command principle leads to phenomena such as role conflict and dysfunctional behavior (House & Rizzo, 1972). When an individual receives conflicting orders or expectations from multiple roles, it results in role conflict. This condition occurs when there is a mismatch between the anticipated and actual role performance of individuals within an organization. Role conflict significantly affects decision-making, particularly for middle managers who face pressure from superiors and subordinates (Gullahorn, 1956). Role conflict can also arise when tasks assigned to employees do not align with their capabilities (Montani et al., 2017). The consequences of role conflict mainly involve dysfunctional behaviors, impacting both the organization and individuals personally (Van Sell et al., 1981)

Role Ambiguity

Role ambiguity is a condition when an individual has uncertain role expectations regarding what needs to be done. This state of uncertainty leads to undesirable outcomes, such as decreased likelihood of performing tasks correctly and an increased likelihood of experiencing tension or stress due to the uncertainty of what should be done (Schmidt et al., 2014). Role ambiguity creates a specific situation where unclear information about role expectations, appropriate methods for fulfilling those roles, and potential outcomes of role performance contribute to the situation (Kahn; Van Sell et al., 1981).

Work Engagement

Work engagement refers to the psychological state experienced by employees who feel invigorated, passionate about their work, and fully absorbed in their tasks, causing time to pass (Schaufeli & Bakker, 2004). The concept of work engagement encompasses various perspectives, including dedication as a desire for active involvement, engagement as a positive mental state, and engagement as the opposite of exhaustion (Sun & Bunchapattanasakda, 2019). The job-demand resource theory states that engagement, as a crucial psychological factor, empowers employees to achieve work-related objectives, reduce job demands and associated physical and psychological burdens, and facilitate personal growth and advancement (Bakker et al., 2003). Factors like role conflict and role ambiguity can have an impact on the level of work engagement. Employees who possess a clearer understanding of their tasks and responsibilities tend to feel more connected to the organization, while those experiencing more role conflict and ambiguity may have a reduced desire to be engaged (Jackson & Schuler, 1985).

Flexible Role Orientation

Individuals with flexible role orientation possess a comprehensive understanding of their responsibilities. They exhibit a sense of ownership towards goals and challenges that extend beyond their specific technical tasks, viewing them as integral parts of their job rather than separate from their responsibilities (Parker et al., 1997). Those with a flexible role orientation comprehend their roles within the broader organizational context and adapt accordingly to meet the corresponding expectations. They demonstrate adaptability by aligning their actions and behaviors with the organization's overall needs and requirements. Simply put, having a flexible-role orientation entails being adaptable and responsive to the organization as a whole. Such individuals tend to be proactive in their work approach, actively anticipating problems, scanning their environment, and taking proactive measures to address challenges before they arise (Parker et al., 1997).

Transformational Leadership

Farahnak et al. (2020) found that transformational leadership is a crucial determinant of organizational success because it enhances employee behavior. Transformational leadership plays a significant role in organizations as it can change members' perspectives to have an attractive perception of change by motivating employees to support behavioral changes (Faupel et al., 2018; Stazyk & Davis, 2020). This is because transformational leadership consists of four dimensions (Bass & Avolio, 1990), namely inspiration, charisma, intellectual stimulation, and motivation.

Innovative Work Behavior

Innovative work behavior refers to purposeful actions undertaken in the workplace to foster innovation. It encompasses activities such as problem identification, solution-seeking, idea development, support-seeking, active participation in implementing workplace innovation, and sharing innovation with others. These behaviors significantly contribute to enhancing work efficiency and effectiveness (Srirahayu et al. 2023). On the other hand, innovation behavior entails the exertion of employees' efforts to generate, promote, and actualize new ideas that bring benefits to individuals, groups, or organizations (Wu et al., 2014). It is important to note that innovation in the public sector differs from that in the private sector. In the public sector, the focus of innovation lies in achieving improvements in governance and service performance, with a particular emphasis on enhancing efficiency to deliver greater public value (Srirahayu et al. 2023)

1.4 Hypothesis Development

Role Conflict and Role Ambiguity on Innovative Work Behavior

According to Montani et al. (2017), a negative relationship exists between role conflict and innovative work behavior. When employees experience unclear roles and responsibilities, they tend to demonstrate passive behavior in their work. Similarly, Maden and Eyiusta (2021) found that role ambiguity adversely affects innovative work behavior. Employees who lack role clarity spend a significant amount of time trying to determine their tasks instead of engaging in more objective work.

H1 : Role conflict has a negative impact on innovative work behavior.

H2 : Role ambiguity has a negative impact on innovative work behavior.

Role Conflict and Role Ambiguity on Work Engagement

This research conducted by Salahuddin et al(2016) was a negative correlation between employee work engagement and both role conflict and role ambiguity. Experiencing elevated levels of conflict and ambiguity in their roles can undermine employees' commitment to the organization. Breevaart and Bakker (2018) found that supports the adverse impact of role conflict on work engagement. The conflicting tasks associated with role conflict can lead to feelings of fatigue, ultimately reducing employee work engagement. Maden and Eyiusta (2021) observed that heightened levels of both role conflict and role ambiguity can lead to decreased levels of employee engagement. Additionally, Ramos et al. (2015) discovered a negative correlation between role conflict, role ambiguity, and work engagement.

H3 : *Role Conflict* has a negative impact on *work engagement*

H4 : *Role Ambiguity* has a negative impact on *work engagement*

Work engagement on Innovative Work Behavior

A positive influence on innovative work behavior is detected by Lu and Ph (2019) about work engagement. These findings highlight the crucial role of work engagement in enhancing innovative work behavior, as engaged employees are more likely to actively participate in innovative actions. Maden and Eyiusta (2021) also found a similar pattern, indicating that highly engaged employees have greater opportunities to demonstrate innovative work behavior. When individuals are completely immersed in their work, they encounter a feeling of energy and enthusiasm. Their active positive emotions empower them to take the initiative and persist in the face of challenging tasks. Engaged employees are more receptive to new experiences, leading them to explore their environment and foster creativity.

H5 : *Work engagement* has a positive impact on *Innovative Work Behavior*

Work engagement mediating the Influence of Role Conflict and Role Ambiguity on Innovative Work Behavior

The findings of Salahudin et al. (2016), the study revealed a negative correlation between role conflict, role ambiguity, and work engagement. Increased levels of conflict and ambiguity in job roles can diminish employees' level of engagement with their organization. Ali et al. (2022) found that influence is exerted by work engagement positively on innovative work behavior. Employee work engagement is believed to cultivate a stronger inclination among employees to actively participate in innovation, motivating them to engage in innovative behaviors and explore new approaches to problem-solving and achieving goals. The level of work engagement corresponds to the intensity of their inclination to exhibit innovative behaviors, and vice versa. Excessive job demands deplete resources and lead to employee fatigue, resulting in a subsequent decline in engagement, as suggested by the JD-R theory. Breevaart and Bakker (2018) study supported this notion by demonstrating the negative impact of role conflict on work engagement. Role conflict, resulting from contradictory tasks, can leave employees feeling weary and diminish their level of engagement. An escalation in role conflict consequently diminishes work engagement, ultimately leading to a decrease in innovative work behavior.

H6 : Work engagement mediates the influence of role conflict on innovative work behavior

H7 : Work engagement mediates the influence of role ambiguity on innovative work behavior

Flexible Role Orientation and Transformational Leadership Moderating the Influence of Role Conflict and Role Ambiguity on work engagement

Maden and Eyiusta (2021) find that flexible role orientation can moderate the negative effect of role conflict and role ambiguity on work engagement. Individuals should actively strive to manage their job demands, regardless of the challenges they encounter. It is important to note that their resources will be depleted as long as they make efforts to cope (Bakker & Demerouti, 2007).

Leadership has been consistently identified in previous studies as a crucial determinant of employees' innovative behavior (Jung et al., 2008). Transformational behaviors displayed by leaders can realign the values and norms of their followers, facilitate personal and organizational changes, and assist followers in surpassing their initial performance expectations. In their study, Breevaart dan Bakker (2018) found that transformational leadership is capable of maintaining employee engagement when job demands become higher. Job demands such as role conflict have a negative relationship with employee engagement when transformational leadership is low.

- H8a : Flexible Role Orientation moderates the influence of Role Conflict on work engagement
- H8b : Flexible Role Orientation moderates the influence of Role Ambiguity on work engagement.
- H9 : Transformational leadership moderates the influence of Role Conflict on work engagement.

Based on the concepts described above, the research framework is formulated as follows

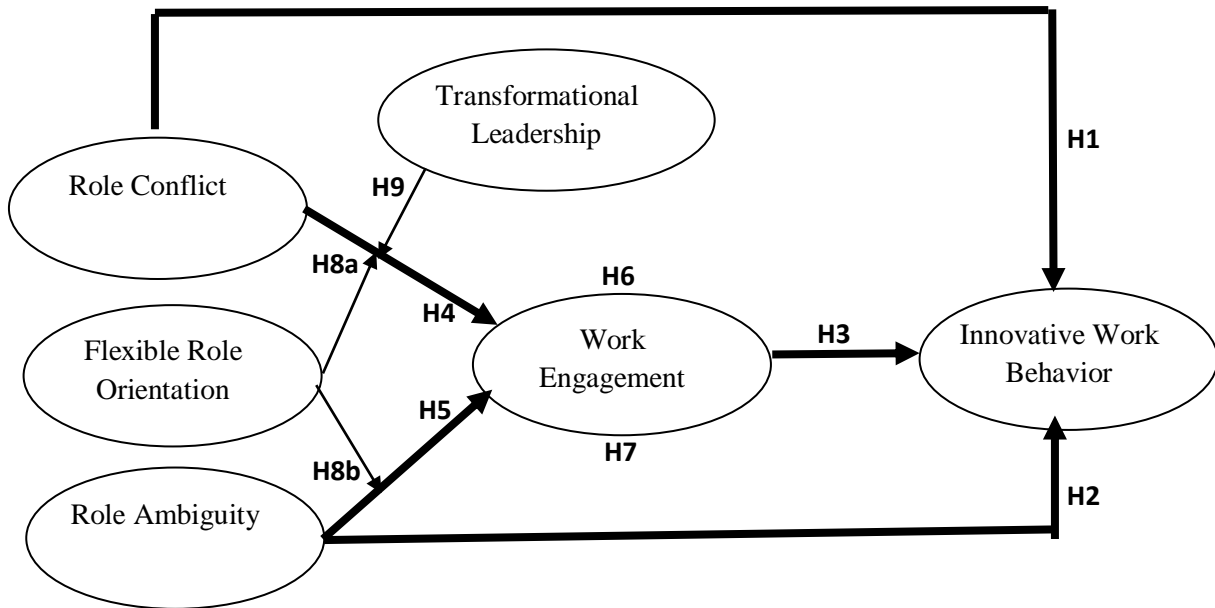


Figure 1. Research Framework

This study aims to provide insights into motivating employees' innovative behavior from a conflict perspective. Through the exploration and investigation of the relationship between role conflict, role ambiguity, and innovation behavior, this research expands the understanding of role conflict and role ambiguity and introduces fresh perspectives on promoting innovation within organizations. Additionally, by investigating the moderating effects of transformational leadership and flexible role orientation on the relationship between role conflict, role ambiguity, and innovation behavior, this study sheds light on how contextual factors can indirectly influence employees' innovation behavior, linking it to the Job Demand-Resources theory. These findings contribute to the development of conflict management theories and offer practical implications for stimulating employees' innovative behavior.

2. Research Methods

2.1. Research Design

This study is quantitative research. It is confirmatory research that aims to test hypotheses regarding the relationship between role conflict, role ambiguity, innovative work behavior, and the mediating role of work engagement. Additionally, it investigates how transformational leadership and flexible role orientation can strengthen or weaken these relationships. The study employs a cross-sectional research approach. The unit of analysis in this study is individuals. All CFA and PLS-SEM analyses were measured using Smart PLS 3.0 for maximum likelihood estimation. According to Hair et al. (2011), Structural Equation Modeling (SEM) can be used to analyze the cause-effect relationships between latent constructs. Some considerations for using PLS-SEM in research are related to non-normal data, small sample sizes, and measured constructs (Hair et al., 2014). The model fitness was assessed by testing various statistics, including chi-square (χ^2), comparative fit index (CFI), standardized root-mean-square residual (SRMR), root mean square error of approximation (RMSEA), and others. The significance of the mediator was tested using bias-corrected bootstrapping analysis, as recommended by Sarstedt et al. (2020) was used in this paper.

2.2 Participant and procedures

This research was conducted on government sector employees, specifically those working in the environment of the Central Statistical Agency (BPS) in North Sumatra Province. Data collection took place in May 2023. The sample was selected through proportional stratified random sampling from a population of 899 individuals, consisting of 2 strata, based on Hair et al. (2014). Primary data was collected directly from respondents using an electronic questionnaire instrument. Each respondent filled out the questionnaire themselves, and it has been verified that there was no occurrence of common method bias. Out of the 520 questionnaires distributed, only 342 questionnaires were completed, representing a response rate of 65.76%. A total of 22 responses were identified as outliers and were removed using the Mahalanobis method. In the total dataset of respondents ready for analysis, males represented 52.5%. The majority of respondents fell within the age range of 35 to 49 years old, accounting for 45.94% of the sample.

2.3 Sampling Procedures

In this study, a probability sampling technique called proportionate stratified random sampling is used. The population is divided into non-overlapping groups, and then a random sample is taken from each group, which is called a stratum. The main purpose of this sampling technique is to select a representative sample from each stratum. A sampling framework is required to carry out this sampling technique. In the first stage, the population is grouped into two strata. The population is divided into strata based on the working areas. The strata are differentiated into the

BPS Provincial and BPS District/City working areas in Sumatera Utara Province. The basis for dividing the strata is the high job demands and different levels of job complexity between BPS Provincial and BPS District/City, as according to (Rizzo et al., 1970) role conflict and role ambiguity occur in complex organizations.

2.3.1 Sample

We determined the sample size for this study based on the concept proposed by Hair *et al.*, (2014), which suggests multiplying the number of indicators by a factor of 5 to 10. With 52 indicators used in our study, a sample size of 520 respondents was required (52 multiplied by 10).

2.3.2 Measurement

The questionnaire used refers to an existing research questionnaire that has been translated into an Indonesian version. This study uses an 8-item subscale from the role conflict scale developed by Schuler et al. (1977). A sample item is 'I have to do things that should be done differently under different conditions.' Responses ranged from 1 (completely disagree) to 5 (completely agree). The study also employs a 6-item subscale from the role ambiguity scale developed by Schuler et al. (1977). A sample item is 'I have clear, planned goals and objectives for my job,' and the responses ranged from 1 (completely disagree) to 5 (completely agree).

Furthermore, the study utilizes a 9-item subscale from the work engagement UWES (Utrecht Work Engagement Scale) developed by Schaufeli et al., (2006). A sample item is 'At my work, I feel bursting with energy,' and the responses range from 1 (never) to 5 (always). Additionally, a 10-item subscale from the innovative work behavior scale developed by (De Jong & Den Hartog, 2010) is used. A sample item is 'I pay attention to issues that are not part of my daily work,' and the responses range from 1 (never) to 5 (always).

Moreover, a 14-item subscale from the transformational leadership scale developed by Podsakoff et al. (1990) is included in the research. Respondents were asked to describe their perceived experience of transformational leadership. A sample item is 'My supervisor is always seeking new opportunities for the organization,' and the responses range from 1 (completely disagree) to 5 (completely agree). Lastly, a 5-item subscale from the flexible role orientation scale developed by (Parker, 2007) is employed. Respondents were asked to indicate the extent to which various issues reflecting long-term goals would be a personal concern for them compared to concerns about others. A sample item is 'Some colleagues in your work area were not pulling their weight.' The response scale ranges from 1 (no influence-no interest to me) to 5 (to a very large extent-definitely a concern to me).

3. Result

We utilized Smart PLS 3.0 to conduct covariance structural modeling to examine the proposed model. To evaluate the validity and reliability of our measures, confirmatory factor analysis (CFA) was utilized. The findings demonstrated that the measurement model displayed a favorable fit. Validity statistics were employed to examine convergent and discriminant validity (refer to Table 2). The standardized factor loadings for each construct are presented in Table 3. Furthermore, former lacker refers to Table 4. Taken together, these findings demonstrated satisfactory convergent and discriminant validity. To address common method variance, we employed Harman's single factor test using IBM SPSS. The results of the test indicated that the unrotated first-factor explanation accounted for 23.10% less variance than the threshold of 40%. Consequently, it can be inferred that common method variance did not pose a concern in our dataset.

3.1 Statistics and Data Analysis

Table 1. Respondent Characteristic

Characteristic	Quantity	Percentage
Sex	Men	52,50
	Woman	47,50
Age	18 - 34 years old	41,88
	34 – 49 years old	45,94
	Above 50 years old	12,19
Education	Senior high school	6,88
	Diploma/ Bachelor	70,00
	Postgraduate	23.12

3.2 Measurement Model Evaluation

Table 2. Construct Validity and Reliability

	Cronbach's	rho_A	Composite Reliability	Average
WE	.928	0.930	0.942	0.698
FRO	.836	0.865	0.881	0.598
FRO * RC	.000	1.000	1.000	1.000
FRO * RA	.000	1.000	1.000	1.000
IWB	.916	0.922	0.931	0.603
RA	.803	0.828	0.862	0.558
RC	.832	0.899	0.874	0.539
TL	.860	0.873	0.890	0.506
TL * RC	.000	1.000	1.000	1.000

Source: PLS Output, 2023

Table 3. Outer Loading

	WE	FRO	FRO*RC	FRO*RA	IWB	RA	RC	TL	TL*RC
WE1	0.817								
WE2	0.857								
WE3	0.858								
WE4	0.838								
WE5	0.876								
WE6	0.807								
WE7	0.789								
FRO1		0.808							
FRO2		0.753							
FRO3		0.795							
FRO4		0.717							
FRO5		0.790							
IWB2					0.628				
IWB3					0.744				
IWB4					0.665				
IWB5					0.736				
IWB6					0.841				
IWB7					0.824				
IWB8					0.866				
IWB9					0.812				
IWB10					0.837				
RA2						0.795			
RA3						0.625			
RA4						0.694			
RA5						0.769			
RA6						0.834			
RC2							0.681		
RC3							0.707		
RC5							0.667		
RC6							0.682		
RC7							0.789		
RC8							0.861		
TL1								0.769	
TL2								0.768	
TL3								0.779	
TL4								0.604	
TL8								0.620	
TL12								0.686	
TL13								0.716	
TL14								0.727	
FRO * RA				1.136					
FRO * RC			1.022						
TL * RC									1.043

Source: PLS Output, 2023

Table 4. Forner Lacker Criterion Value

	WE	FRO	FRO * RC	FRO * RA	IWB	RA	RC	TL	TL *
WE	0.835								
FRO	0.294	0.773							
FRO * RC	-0.034	-0.098	1.000						
FRO * RA	-0.109	-0.293	0.328	1.000					
IWB	0.489	0.352	-0.052	-0.117	0.777				
RA	-0.572	-0.228	0.158	0.140	-0.438	0.747			
RC	-0.213	0.069	0.091	0.142	0.071	0.210	0.734		
TL	0.469	0.313	-0.109	-0.018	0.409	-0.457	-0.123	0.711	
TL * RC	-0.004	-0.107	0.393	0.243	-0.125	0.097	0.123	-0.099	1.000

Source: PLS output, 2023

3.3. Structural Model Evaluation

To assess the quality of the structural model, the evaluation was conducted using the R-square, Goodness of Fit (GoF) test, and the Standardized Root Mean Squared Residual (SRMR). The R-square measure was employed to determine the amount of variance explained by the independent variables in the structural model. Sanchez (2013) defines an R-square value below 0.3 as low, between 0.3 and 0.6 as moderate, and above 0.6 as high. In our study, the R-square value of 31.66 (as shown in Table 5) suggests a moderate level of predictive accuracy for the target-dependent variables. This indicates that 31.66% of the variability in the dependent variable can be explained by the independent variables, while the remaining 68.34% is attributed to other factors.

The structural model demonstrated good model fit, as evidenced by the following statistics: $\chi^2(320) = 1,678.169$, SRMR = .069; and RMSEA = .105. Additionally, collinearity in the structural model was assessed using the collinearity statistic (VIF), with a threshold of less than 5 for each variable (Hair *et al.*, 2019). All values exceeded the threshold, indicating the absence of moderators' collinearity issues in the structural model. To mitigate collinearity, independent variables, and moderators were standardized when constructing the interaction. The results can be found in Table 8.

Table 5. R Square

	R Square	R-Square Adjusted
WE	0.41617006	0.403071311
IWB	0.31667594	0.310188682

Source: PLS output, 2023

Table 6. F Square

	WE	IWB
WE		0.142722
FRO	0.026117	
FRO * RC	0.005196	
FRO * RA	0.00095	
IWB		
RA	0.228374	0.066814
RC	0.020716	0.059268
TL	0.065957	
TL * RC	0.007089	

Source: PLS output, 2023

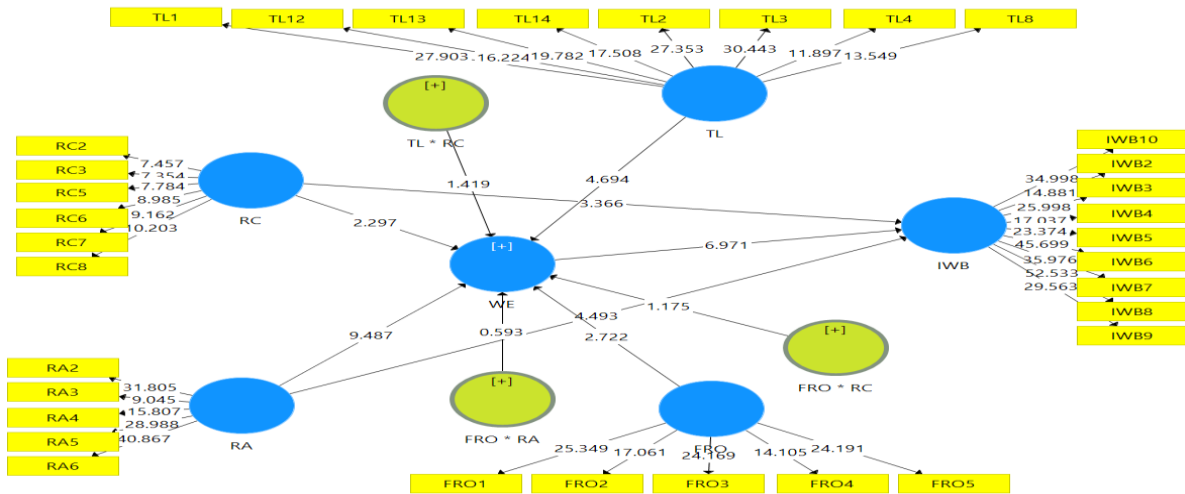
Table 7. Inner VIF

	WE	IWB
WE		1.50579
FRO	1.268414	
FRO * RC	1.286852	
FRO * RA	1.285435	
IWB		
RA	1.343641	1.504123
RC	1.104327	1.060378
TL	1.38327	
TL * RC	1.21641	

Source: PLS output, 2023

Hypothesis Testing

We employed path analysis to examine the relationships between dependent and independent variables. To statistically test these relationships and generate 95% confidence intervals, we used bootstrapping with 5000 subsamples. The results revealed significant impacts between role conflict, role ambiguity, employee work engagement, and innovative work behavior.



Source: PLS output
Figure 2. Inner Model (Bootstrapping)

Direct Effect

Hypotheses 1 and 2 posited that role conflict and role ambiguity would have a direct and negative influence on innovative work behavior. The results showed that role conflict ($B = 0.207, p = 0.000$) had a positive relationship with innovative work behavior, while role ambiguity ($B = -0.262, p = 0.000$) had a negative relationship with innovative work behavior. However, it is worth noting that these relationships just failed to reach statistical significance for hypothesis 1.

Hypothesis 3 suggested that work engagement would have a direct and positive impact on innovative work behavior. The results revealed a positive relationship between work engagement and innovative work behavior ($B = 0.383, 95\% \text{ CI } [-.006; .104], p = 0.000$).

Hypotheses 4 and 5 postulated that role conflict and role ambiguity would have a direct and negative influence on work engagement. The results indicated that both role conflict ($B = -0.115, p = 0.000$) and role ambiguity ($B = -0.423, p = 0.000$) exhibited a negative relationship with work engagement.

Table 8. Direct Effect

	<i>Original</i>	<i>Standard</i>	<i>T - Statistic</i>	<i>P - value</i>	<i>Result</i>
<i>H1: RC -> IWB</i>	0.207231	0.062244	3.329335	0.000877	<i>Not</i>
<i>H2: RA -> IWB</i>	-0.26205	0.058457	4.482823	7.53E-06	<i>Support</i>
<i>H3: WE -> IWB</i>	0.383214	0.054913	6.978578	3.35E-12	<i>Support</i>
<i>H4: RC -> WE</i>	-0.11557	0.048949	2.361031	0.018262	<i>Support</i>
<i>H5: RA -> WE</i>	-0.42326	0.044535	9.504006	5.68E-14	<i>Support</i>

Source: PLS output

Mediation Effect

To examine the type of mediation, it is necessary to analyze the direct and indirect effects. Table 9 presents the mediation analysis, including a comparison of the direct and indirect effects. Following the mediation analysis approach proposed by Sarstedt *et al.*, (2020). The results indicate that the relationship between role conflict and role ambiguity in innovative work behavior can be categorized as partial mediation. This means that both the direct effect and indirect effect were found to be significant.

Table 9. Mediation Analysis

Effect	Direct Effect			Indirect Effect			Mediation
	B	p-value	Result	B	p-value	Result	
RC -> IWB	0.207	0.001	Supported	-0.044	0.024	Supported	Partial mediation
RA -> IWB	-0.262	0.000	Supported	-0.162	0.000	Supported	Partial mediation

Source: PLS output

Hypotheses 6 and 7 proposed that role conflict and role ambiguity could decrease work engagement, subsequently resulting in a decrease in innovative work behavior. The results indicated that both role conflict (B = -0.115, 95%, p = 0.000) and role ambiguity (B = -0.423, 95%, p = 0.000) were significantly related to work engagement. Additionally, work engagement showed a positive association with innovative work behavior (B = 0.383, p = 0.000), suggesting that individuals who experienced higher levels of engagement exhibited greater innovative work behavior. These findings support the implied indirect relationships between role conflict (B = -0.044, p = 0.024) and role ambiguity (B = -0.162, p = 0.000) with innovative work behavior. Therefore, hypotheses 6 and 7 were supported.

Table 10. Specific Indirect Effect

Hypothesis	B	T-Statistic	P-value	Result	Mediation
H6: RC -> WE -> IWB	-0.044	2.252	0.024	Supported	Significant
H7: RA -> WE -> IWB	-0.162	6.332	0.000	Supported	Significant

Source: PLS output

Moderating Effect

To test hypotheses H8a, H8b, and H9, we utilized Smart PLS 3.0, with work engagement as the dependent variable and role conflict and role ambiguity as independent variables. Additionally, we included the moderator variables of transformational leadership and flexible role orientation, as well as their interactions, in the equations. Moderation was assessed at a significance level of p = .05. These research questions aimed to explore the potential buffering effects of transformational leadership and flexible role orientation. Hypotheses H8a and H8b investigated the role of flexible role orientation in the relationship between role conflict and role ambiguity

and work engagement. Hypothesis H9 examined the role of transformational leadership in the relationship between role conflict and work engagement. Table 11. *Moderation Analysis*

Hypothesis	Direct Effect			Moderation Effect			Moderation
	B	p-value	Result	B	p-value	Result	
<i>FRO -> WE -> IWB</i>	0.053	0.014	Support	<i>H8a: FRO*RC -> WE -> IWB</i>	0.023	0.266	Not support Predictor moderator
<i>FRO -> WE -> IWB</i>	0.053	0.014	Support	<i>H8b: FRO*RA -> WE -> IWB</i>	-0.009	0.573	Not support Predictor moderator
<i>TL -> WE -> IWB</i>	0.088	0.001	Support	<i>H9: TL*RC -> WE -> IWB</i>	0.026	0.166	Not support Predictor moderator

Source: PLS output

The results indicated that neither flexible role orientation nor transformational leadership moderated the relationship between role conflict and role ambiguity and work engagement. These findings suggest that the impact of role conflict and role ambiguity on work engagement was not significantly influenced by the levels of transformational leadership or flexible role orientation being higher or lower (refer to Table 11).

4. Discussion

Employees have consistently regarded role ambiguity and role conflict, which are considered role stressors, as hindrance stressors (Webster *et al.*, 2011). The results of this study indicate that role conflict and role ambiguity are associated with innovative work behavior.

Role ambiguity has a significant and negative correlation with innovative work behavior, both directly and through the mediation of work engagement. This finding is consistent with the findings of Maden and Eyiusta (2021), who found that role ambiguity causes employees to spend time contemplating how the job should be done rather than completing the task itself, thereby reducing their inclination for innovative thinking. The finding is also in line with earlier research by Antwi *et al.* (2019) which discovered that up to a certain level, role ambiguity can diminish employees' interest in generating new ideas. The condition of uncertainty fosters undesirable outcomes such as reducing the likelihood of individuals performing their job correctly and increasing the chances of experiencing tension or stress due to the uncertainty about what needs to be done (Schmidt *et al.*, 2014). Job uncertainty often places employees in situations lacking clear guidance or clarity.

However, on the other hand, role conflict is positively associated with innovative work behavior. Significant role conflict can directly enhance innovative work behavior. This is likely because the impact of role conflict is perceived by employees not as a barrier to innovation. The discovery aligns with Janssen's observation that heightened job demands stimulate innovative responses. Furthermore, Jones (1993) proposed that role conflict can prompt individuals to embrace diverse perspectives, enhance their flexibility, and broaden their information sources. Schepers *et al.*, (2016) also found that role conflict can increase the intention to generate new ideas.

Conventional work engagement partially mediates the relationship between role conflict and role ambiguity and innovative work behavior. There is a negative relationship between role conflict and role ambiguity in innovative work behavior through the mediation of work engagement. Role conflict significantly decreases innovative work behavior through the mediation of work engagement, likely because role conflict is considered to diminish employee work engagement (Breevaart & Bakker, 2018) thereby reducing their interest in innovation (Lu & Ph, 2019). Role ambiguity also significantly diminishes innovative work behavior through the mediation of work engagement, consistent with the findings of Maden and Eyiusta (2021). Stressful job demands tend to produce negative performance outcomes by disengaging employees from their work (Crawford *et al.*, 2010).

Flexible role orientation does not have sufficient evidence as a moderator between the relationship between role conflict and role ambiguity in work engagement. Similarly, transformational leadership does not have sufficient evidence to moderate the influence of role conflict on work engagement.

The key finding is that role conflict has a significant positive impact on innovative work behavior directly, but it changes to a significant negative relationship between role conflict and innovative work behavior with the mediation of work engagement. This could happen possibly because, at a certain level, employees do not perceive role conflict as a barrier to innovation. However, it is important to anticipate the potential increase in role conflict within organizations as it can diminish work engagement.

Transformational leadership has not been able to mitigate the negative impact of role conflict on work engagement. This finding contradicts the research by Breevaart and Bakker (2018), who found that transformational leadership can moderate the relationship between role conflict and work engagement. This finding is also supported by Ugwu (2022), who found that transformational leadership is unable to moderate role conflict. Flexible role orientation also does not moderate the relationship between role conflict and role ambiguity in work engagement. This finding differs from the research by Maden and Eyuista (2021), who found that flexible role orientation can moderate the relationship between role conflict, role ambiguity, and work engagement. This difference may be attributed to the fact that not all resources can moderate job demands (Xanthopoulou *et al.*, 2007). However, both flexible role orientation and transformational leadership can serve as antecedents that influence innovative work behavior.

Implication

Several practical implications can be drawn from this study. Firstly, it suggests that innovative work behavior may be negatively influenced by role ambiguity. Therefore, reducing role ambiguity is crucial to enhance employees' innovative work behavior. The findings also highlight the positive impact of work engagement on innovative work behavior, indicating that management should prioritize fostering high levels of work engagement among employees. Additionally, implementing training programs to enhance employees' competence and vigor can further contribute to maintaining a highly innovative work environment. Managers should recognize the importance of recruiting, selecting, and retaining employees who exhibit strong work engagement. Therefore, strategies such as selective staffing, comprehensive training, career development, competitive compensation, performance appraisal, and employee participation

should emphasize the ability to tolerate ambiguity and uncertainty, ultimately reducing role ambiguity. (Naeem et al., 2019). Second, role conflict is observed when employees interact with each other within a department or with external entities. It should be noted that role conflict can catalyze fostering innovative thinking. In this context, we propose that role conflict stimulates cognitive variation, and idea testing, and ultimately leads to further insights. This approach may be particularly beneficial for employees who have limited experience in innovative work behavior or possess lower levels of creativity. It is important to clarify that our intention is not to encourage managers to intentionally increase role conflict for the sole purpose of maximizing its impact on innovative behavior. Rather, we advise managers to exercise caution in not excessively emphasizing role conflict, as it may diminish employees' interest in engaging effectively in their work. Enhancing role clarity can increase intrinsic motivation, ultimately leading to an improvement in innovative work behavior (Kundu *et al.*, 2020).

Limitations and Future Research Suggestions

Despite the above-mentioned contributions, certain limitations exist in this study. Firstly, our results indicate a positive impact of role conflict on innovative work behavior; however, this study did not explore this possibility or identify the specific stage at which role conflict may have a positive influence on innovative work behavior. Furthermore, this study employed a cross-sectional design, which limits the ability to establish causal relationships despite suggesting causal directions based on the constructed relationships. Therefore, future research should employ longitudinal and/or experimental data to further examine causality. Additionally, this study did not find evidence supporting the moderation of the negative effects of role conflict and role ambiguity on work engagement by individual factors such as flexible role orientation or situational factors such as transformational leadership. Hence, it is recommended that future studies continue to investigate this aspect of the sustained presence of innovative work behavior. Furthermore, incorporating other moderating variables such as self-efficacy or situational factors like leader support could be considered in subsequent studies.

Conclusion

Role conflict has a positive effect on innovative work behavior. Having diverse and demanding workloads that require employees to assume multiple roles can motivate them to seek new ideas that facilitate task completion. On the other hand, role ambiguity has a negative effect on innovative work behavior. Employees perceive the importance of clear rules, instructions, or explanations, which impacts the innovative work behavior they engage in. Work engagement has a positive effect on innovative work behavior. Employees' enthusiasm and dedication to their work and goals enable them to take initiative and generate new ideas. However, role conflict has a negative effect on work engagement. When employees experience conflicting demands from different roles, their concentration becomes divided, leading to disengagement from their tasks. Similarly, role ambiguity has a negative effect on work engagement, as employees may feel pressured and anxious due to uncertainty about what they should do. This can ultimately lead to high levels of stress and decreased work engagement. Role conflict negatively affects innovative work behavior through the mediation of work engagement. When employees are burdened with demands from different roles, it can lead to ineffective use of resources, such as time and energy, to meet the expectations of these various roles. As a result, employees' work engagement

declines as they feel tired and less focused on their tasks, leading to exhaustion in generating new ideas. Similarly, role ambiguity negatively affects innovative work behavior through work engagement. The lack of clarity in roles and responsibilities given to employees causes ambiguity in tasks, leading to a reluctance to actively participate in generating creative ideas. Flexible role orientation cannot moderate the negative relationship between role conflict and role ambiguity in work engagement. Even if employees have a flexible initiative to take on a role, it may still be challenging to reduce the impact of role conflict caused by high job demands. The impact of role conflict and role ambiguity on work engagement is not significantly accelerated or decelerated by higher or lower levels of transformational leadership or flexible role orientation."

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