The Influence of LMX and TMX on Employee Attitudes and Performance Moderated by Individual Differences

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ABSTRACT

Purpose: Individual differences as dispositional factors influencing attitudes and behaviors in the workplace are still in need of further exploration. Therefore, this study aimed to examine employee engagement (WEN) as a mediator in the relationship between leaders and subordinates (LMX) as well as team-member exchange (TMX) on out-of-role performance (OCB). It also analyzed how factors such as gender, organizational position, tenure, and education acted as moderators in the relationship model.

Methods: A total of 500 employees from small and medium enterprises (SMEs) including both leaders and operational employees participated in this study. The validity and reliability of the questionnaire were also assessed using exploratory and confirmatory factor analysis as well as internal consistency measured by Cronbach's Alpha. Furthermore, structural equation modeling was adopted to examine the proposed relationship model.

Findings: The results consistently found that WEN mediated the influence of social exchange in the organization on employee attitudes and performance. Gender, organizational position, and tenure were found to be moderating variables while education showed no significant moderating influence. A detailed discussion of the results was presented in this study.

Research Implications/Limitations: This study strengthens the evidence that individual differences play a role in determining how relationships with leaders and coworkers affect attitudes and work outcomes. Research with longitudinal data and other assessments can further prove the mediation model.

Practical Implications: Companies need to pay attention to individual differences of their employees. LMX and TMX may affect employees' work attitudes and performance differently because of these differences.

Keywords: *Engagement, LMX, Performance, TMX, gender, tenure, position in organization, education*

1. INTRODUCTION

Individual differences are an unavoidable factor that influences employee attitudes and behavior in the workplace. In addition, social relationships between employees and their leaders and between employees are inseparable from these individual differences. In the workplace, leader-member exchange (LMX) and team-member exchange (TMX) are concepts that discuss social interactions in the workplace that influence employee attitudes and performance. According to Buengeler, Piccolo, and Locklear (2021) and Gara Bach Ouerdian, Mansour, Gaha, and Gattoussi (2021) these relationships influence individual and organizational performance and strenghtening employee life at work (Kang & Jang, 2022; Toscano, Zappalà, & Galanti, 2022). Researchers have shown that LMX has a consistent effect on TMX (Park, Park, & Liden, 2022; Yu, Matta, & Cornfield, 2018) however the effects are inconsistent and variable (Buengeler et al., 2021; Chen, Yu, & Son, 2014; Cobb & Lau, 2015; Martin, Thomas, Legood, & Dello Russo, 2018). This diversity may be due to the underlying theory and the moderating variables used (Kang, Pahng, & Kang, 2023; Yu et al., 2018).

Relationship quality in LMX affects team members differently (Chen, He, & Weng, 2018; Herdman, Yang, & Arthur, 2017). Researchers have stated that this inconsistency suggests that high or superior TMX in work quality does not

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always result from quality LMX (Buengeler et al., 2021). In addition, LMX often negatively affects TMX due to competition between TMX for the attention of their leaders (Cobb & Lau, 2015). Other researchers have found no correlation between LMX and TMX (Chen et al., 2014; Matta & Van Dyne, 2020) while some studies have shown a positive relationship between LMX and TMX (Buengeler et al., 2021; Kang et al., 2023; Volmer, Schulte, & Fritz, 2023). Based on these conflicting results, the relationship between LMX and TMX still requires further careful research (Kang et al., 2023).

The relationship between LMX, TMX and performance is based on social exchange theory (SET) as a basic framework for understanding social relationships in the workplace based on reciprocity (Chernyak-Hai & Rabenu, 2018(Shkoler, Rabenu, Tabak, & Lebron, 2019). Meanwhile, social comparison theory (SCT) also explains that differences in the influence of LMX on TMX are important in social comparison (Kang et al., 2023) with moderating variables playing an important role (Hooper & Martin, 2008; Shkoler et al., 2019). However, there is agreement among researchers that LMX and TMX are able to improve performance by increasing employee engagement (WEN) (Breevaart, Bakker, Demerouti, & Van Den Heuvel, 2015; Tremblay, Gaudet, & Parent-Rocheleau, 2021; Wang, Beatty, & Liu, 2012) and are able to improve performance outside of routine work tasks including organizational citizenship behavior (OCB) (Che, Guo, & Chen, 2021; Shang et al., 2019).

This study aims to examine the influence of LMX, TMX, on OCB with WEN as a mediator. Researchers agree that social interaction in the workplace has a positive effect on work attitudes, especially on WEN (Aggarwal, Chand, Jhamb, & Mittal, 2020; Ly, 2024; Zeijen, Petrou, & Bakker, 2020). This study also aims to examine the role of moderating variables, namely gender, position in the organization, tenure, and education in the relationship model of LMX, TMX, WEN, and OCB. This exploration is necessary because of the inconsistency in the results of previous studies, which are influenced by individual and situational factors based on the person-situation interaction paradigm (Mendoza-Denton, Ayduk, Mischel, Shoda, & Testa, 2001). Previous research has shown that individual characteristics and dispositional factors moderate this relationship model (Abu Bakar & Sheer, 2013; Rapp & Mathieu, 2019; Zhao, Li, Zheng, & Zhang, 2023).

Several previous studies have used gender as a moderating variable (Collins, Burrus, & Meyer, 2014; Di Milia & Jiang, 2024; Jiang & Hu, 2016), tenure (Kim, Liu, & Diefendorff, 2015; Liao, Yang, Wang, Drown, & Shi, 2013; Wang et al., 2012), age (Liao et al., 2013) position in the organizational as an employee or leader (Buengeler et al., 2021; Sui, Wang, Kirkman, & Li, 2016) and education (Kim, Phillips, Park, & Gully, 2023; Mao, Chiang, Chen, Wu, & Wang, 2019; Xu, Wayne, Wang, & Pan, 2024). This study was conducted by reviewing the relevant underlying theories and using appropriate data collection methods, this study used various tests. The test starts from testing the correlation between variables, analyzing the relationship model using structural equation modeling (SEM), and analyzing moderating variables using multi-group SEM. The last section discusses and concludes the results of this study.

2. THEORETICAL-EMPIRICAL REVIEW AND HYPOTHESIS DEVELOPMENT

According to Farmer, Van Dyne, and Kamdar (2015) two types of social exchanges existed in the workplace namely vertical (between LMX) and horizontal (between employees in the same team under a leader). These exchanges as described by Chung and Jeon (2020) were referred to LMX and TMX. LMX reflected the quality of relationships between LMX which included communication, information exchange, trust, interaction, support, and respect (Chernyak-Hai & Rabenu, 2018). Furthermore, TMX pertained to the quality of the relationship between team members (García Contreras, Muñoz-Chávez, Pineda-Celaya, & Rodríguez-Morales, 2022). These social interactions contributed to the development and exchange of ideas and information, mutual assistance, familiarity, and feedback, leading to high-quality social exchanges (Chen & Wei, 2020; Lee, Gerbasi, Schwarz, & Newman, 2019). Social relationships also played a crucial role in decision-making and the long-term strength of an organization, based on SET (Lee et al., 2019; Meng et al., 2019).

LMX theory states that a leader's recognition and understanding of his or her diverse followers will result in diverse levels of closeness between the leader and followers (Shu & Lazatkhan, 2017).). High-quality LMX or ingroups will receive better information, facilities, opportunities, chances, and treatment from leaders (Li & Liao, 2014). A quality LMX relationship is indicated by respect, trust, liking, quick response, and various other positive attitudes and feelings (Ellis, Bauer, Erdogan, & Truxillo, 2019). This condition leads to satisfaction, commitment, performance, and mutual liking (Terpstra-Tong et al., 2020) as well as increased mental health and well-being (Montano, Reeske, Franke, & Hüffmeier, 2017). Affective event theory (AET) further explains that LMX relationships influence

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employees' emotional experiences and feelings at work (Cropanzano, Anthony, Daniels, & Hall, 2017; Volmer et al., 2023).

LMX benefited both leaders and subordinates (Kelemen, Matthews, & Breevaart, 2020; Scandura & Meuser, 2022) and numerous studies agreed that the quality influenced employee outcomes (McClean, Barnes, Courtright, & Johnson, 2019; McCormick, Reeves, Downes, Li, & Ilies, 2020; Montano et al., 2017; Volmer et al., 2023). This relationship produced diverse outcomes (Drory, Shkoler, & Tziner, 2022; Matta & Van Dyne, 2020) and influenced attitudes differently (Shkoler & Tziner, 2020; Tziner, Shkoler, & Fein, 2020). High-quality LMX led to mutual trust, responsibility, sharing of information and knowledge, organizational identification, and increased commitment to leader or vice versa (Breevaart et al., 2015; A. Lee et al., 2019; Newton & Perlow, 2024; Shkoler et al., 2019; Teng, Lu, Huang, & Fang, 2020). It also reduced the possibility of negative behaviors among subordinates (Kaluza, Weber, van Dick, & Junker, 2021; Pan, Zheng, Xu, Li, & Lam, 2021; Premru, Černe, & Batistič, 2022). However, environmental factors influenced the quality of LMX among subordinates (Diener, Thapa, & Tay, 2020).

Based on SET and LMX theories, LMX represented a leader's differential treatment of subordinates while TMX showed the effectiveness of relationships among team members (García Contreras et al., 2022). Recent publications focused more on LMX than TMX, even though TMX had a greater influence on employee attitudes and behaviors than LMX (Bakar & Omilion-Hodges, 2018; Dierdorff, Fisher, & Rubin, 2019; Du, Chan, Birnbaum, & Lin, 2022; Kim et al., 2021; Lee, 2020; Shih & Wijaya, 2017). As a form of horizontal social exchange, TMX had not received as much attention (Farmer et al., 2015). Employees with high TMX enjoyed better relationships with coworkers and received more information (Chen & Liu, 2022). High TMX which was rooted in team member relationships (Chen & Wei, 2020) was also characterized by mutual trust, openness, information sharing, advice, and effective communication with each other (Chen & Liu, 2022; Chen, 2018; Monica Hu, Ou, Chiou, & Lin, 2012).

Similar to LMX, TMX theory emphasized reciprocal relationships among team members built on mutual trust, honesty, respect, and openness (Kim et al., 2023; Y. Shang et al., 2019). According to Chen (2018) TMX included both task- and relationship-oriented elements. High-quality TMX could improve relationships among members, creating better outcomes, reducing uncomfortable atmospheres, and fostering a positive environment of communication, trust, motivation, and collaboration in positive outcomes (Chung & Jeon, 2020; Malingumu, Stouten, Euwema, & Babyegeya, 2016). SET also supported the connection between LMX and TMX, which positively influenced performance (Chernyak-Hai & Rabenu, 2018; Jawahar, Schreurs, & Mohammed, 2018). Quality reciprocal relationships could further drive positive results (Seong & Choi, 2019) while low-quality LMX and TMX led to negative outcomes (Shu & Lazatkhan, 2017). According to vertical dyad linkage (VDL) theory, LMX positively influenced group performance (Yu et al., 2018).

Balance theory further suggested that individuals who experienced high-quality LMX had high-quality TMX, and vice versa. Individuals in outgroups showed low-quality TMX (Abu Bakar & Sheer, 2013; Herrero & Bornay-Barrachina, 2024) as both leaders and coworkers shaped the social environment (Omilion-Hodges & Baker, 2017; Rapp & Mathieu, 2019; Wang, Jiang, Weng, & Wang, 2019). Despite the influence, the effect of TMX on individuals remained debated as it was influenced by individual characteristics (Dierdorff et al., 2019; Lee, 2020; Shih & Wijaya, 2017). The relationship between leaders and group members influenced group dynamics and the work process (Martin et al., 2018; Matta & Van Dyne, 2020). However, the influence could vary for employees outside the group or in-groups (Diebig et al., 2024; Martin et al., 2018). Publications by Venkatesh et al. (2023) and Wang, Xiao, Su, and Li (2021) showed that TMX moderated the influence of LMX on employee outcomes.

Numerous studies have agreed that LMX influenced WEN (Aggarwal et al., 2020; Wagner & Koob, 2022). According to Job Demand-Resource Theory (JD-R), employees felt more engaged when supported by resources such as coworkers (Lee, 2020). Based on conservation resource theory (COR theory, Hobfoll (1989)), individuals in in-groups pursued resources with high work engagement (Brennan, Garavan, Egan, O'Brien, & Ullah, 2024; Hobfoll, Halbesleben, Neveu, & Westman, 2018; Liu, Song, Xu, Xu, & Li, 2023). SET suggested that the quality of relationships between employees and leaders influenced attitudes and performance, influenced by the social environment in the workplace (March, Aplin-Houtz, Lawrence, Lane, & Meriac, 2023).

WEN is a positive attitude of employees in the workplace that affects employee performance (Bakker & Albrecht, 2018; Rahman & Karim, 2022; Zaabi, Ahmad, & Hossan, 2016). WEN includes passion, dedication, and commitment to work and organization (Christian, Garza, & Slaughter, 2011). Employees who feel work engagement will be involved and will voluntarily devote themselves to work and organization (Ismael, Yes¸iltas¸, & Andrea, 2021; Lyu,

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Zhu, Zhong, & Hu, 2016; Rahman & Karim, 2022; Thakre & Mathew, 2020). Previous researchers agree to support the positive influence of WEN on OCB (Rapp & Mathieu, 2019; Urbini, Chirumbolo, & Callea, 2020). Ma et al. (2017) found a reciprocal relationship between TMX and WEN that affects performance. This means that high TMX indicates a similarity in norms and values between employees, thus encouraging positive interpersonal relationships and increasing WEN (Zhang & Takahashi, 2024). Both LMX and TMX influence WEN, but this influence is inseparable from moderating variables such as age, tenure, and education playing a role in shaping this effect (Liao et al., 2013). Wang et al. (2012) and Kim et al. (2015) also found that tenure moderated the relationship between LMX, TMX, and WEN, while Van Dyne and Pierce (2004) identified age, gender, and tenure as moderating variables. High WEN is indicated by enthusiasm, dedication, and commitment to work (Schaufeli, Salanova, González-Romá, & Bakker, 2002) which can improve employee performance. WEN is a form of physical and emotional energy that can drive employee performance (Wagner & Koob, 2022).

LMX is further agreed by researchers to influence performance, especially in performance outside the formal role known as OCB (Che et al., 2021; Chow, Lai, & Loi, 2015; Zhang, Liu, Xu, Yang, & Bednall, 2019) and TMX is also influenced by OCB (Bakar & Omilion-Hodges, 2018; Lavelle et al., 2009). Individual characteristics are referred to as variables that moderate this influence (Shu & Lazatkhan, 2017). Previous studies have shown that gender moderates the influence of interpersonal relationships between employees and between employees and their leaders on performance (Collins et al., 2014; Di Milia & Jiang, 2024; Jiang & Hu, 2016; Tziner et al., 2020). Other researchers further identified tenure as a moderating variable (Kim et al., 2015; Liao et al., 2013; Wang et al., 2012). Liao et al. (2013) also found that age played a moderating role in the relationship model. Other researchers found that employee position in the organization can also function as a moderator (Buengeler et al., 2021; Sui et al., 2016) while other researchers showed that education is a proven moderating variable (Kim et al., 2023; Mao et al., 2019; Xu et al., 2024). Based on these theories and the results of previous studies, the following hypotheses were formed.

H_1: WEN mediated the influence of LMX and TMX on OCB.

H_2: Gender moderated the relationship model of LMX and TMX on OCB as mediated by WEN.

H_3: Organizational Position moderated the relationship model of LMX and TMX on OCB as mediated by WEN.

H_4: Tenure moderated the relationship model of LMX and TMX on OCB as mediated by WEN.

H_5: Education moderated the relationship model of LMX and TMX on OCB as mediated by WEN.

The following Figure 1 represented the relationship model tested in this study.

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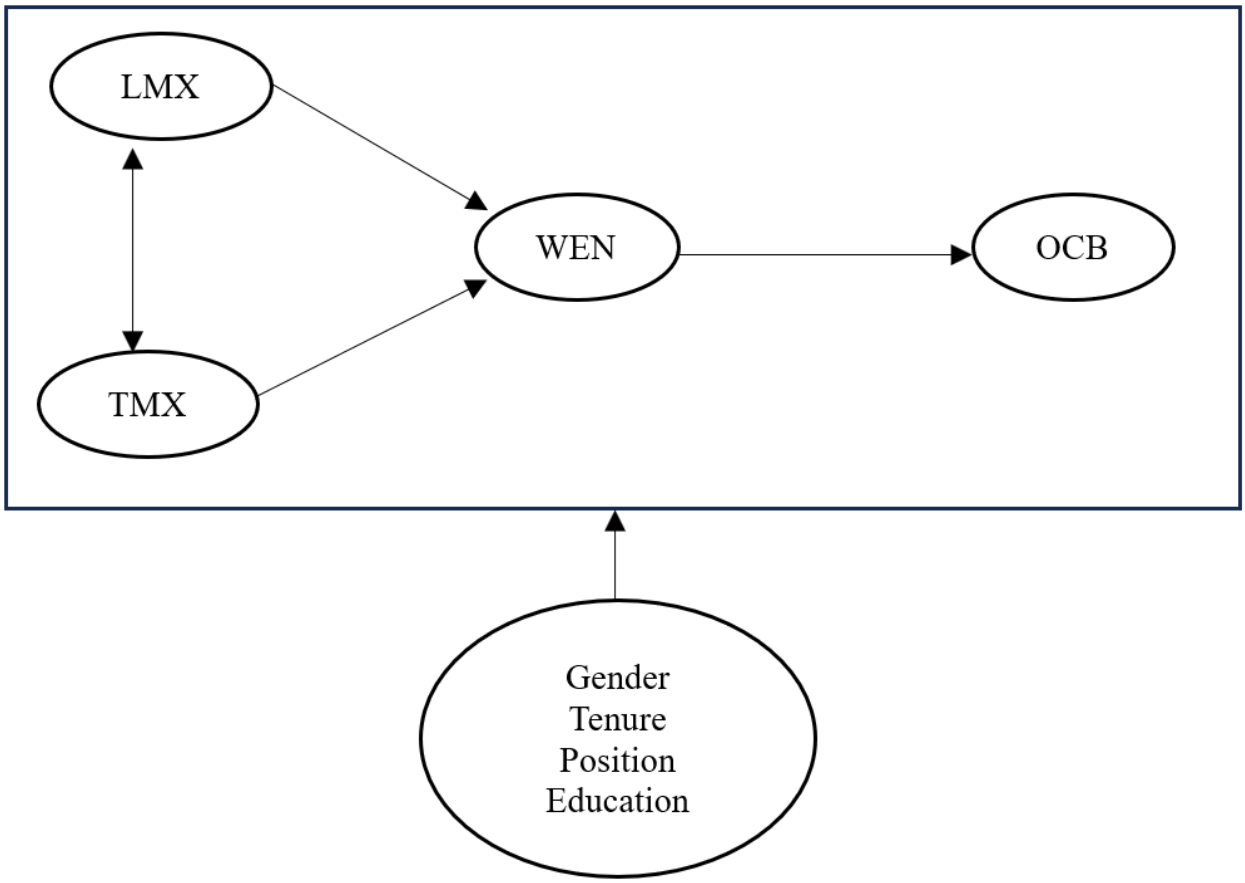

Figure 1. Relationship model between research variables.

3. METHOD

3.1. Sample and Procedures

This study focused on SMEs employees across several major cities in Indonesia including Jakarta, Bandung, Semarang, Surabaya, and Yogyakarta. A total of 500 employees both leaders and operational employees participated in completing the questionnaire which was distributed through Google Forms. The characteristics of respondents were summarized in Table 1.

Table 1. Respondents' characteristics.

Respondents' characteristics:	Total	Percent
Gender:		
Male	190	38
Female	310	62
Work position:		
Supervisor	166	33.2
Operational employees	334	66.8
Tenure:		
Less than 5 years	219	43.8
More than 5 years – 10 years	207	41.4
More than 10 years	74	14.8
Education		
Senior high school	195	39
Vocation	55	11
Undergraduate	250	50

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After all the data had been collected, a series of tests were conducted. The validity of the questionnaire was tested using exploratory, specifically through factor analysis with loading factors above 0.5 and confirmatory analysis using SEM (Sekaran & Bougie, 2013). Reliability was measured using Cronbach's Alpha criteria and composite reliability (CR) with values exceeding 0.7 showing strong internal consistency (Hair, Babin, Anderson, & Black, 2018). The relationship model was further tested using SEM with a two-stage method while multi-group SEM was applied to test the moderation of the model (Byrne, 2010).

3.2. Measurement

This study used a questionnaire adapted from the publication of Shang, Kuo, Hsu, Lai, and Ye (2024) for the variables LMX, TMX, and OCB, while WEN variable was adapted from Hanaysha (2016). The validity test results showed that six LMX questionnaire items were valid with loading factors ranging from 0.784 to 0.832, as well as KMO = 0.897, df = 15, sig. = 0.000 and reliable (α = 0.899). For TMX, five items were valid with loading factors from 0.746 to 0.825, KMO = 0.850, df = 10, sig. = 0.000, and reliable (α = 0.857). Eight OCB questionnaire items were also valid with loading factors between 0.724 and 0.833, KMO = 0.911, df = 20, sig. = 0.000, and reliable (α = 0.911), Seven items of WEN questionnaire were also valid with loading factors ranging from 0.669 to 0.868, KMO = 0.923, df = 21, sig. = 0.000, and reliable (α = 0.891). All variables in this study met the construct validity and internal consistency requirements with very good reliability according to Zikmund, Babin, Carr, and Griffin (2010).

4. RESULTS

4.1. Preliminary Analysis

Before testing the relationship model, correlation testing was carried out between the study variables to ensure that the model could be tested.

Table 2. Mean, composite reliability, and correlation between study variables.

Research variables	Mean	Std. deviation	Composite reliability	LMX	TMX	OCB	WEN
Leader-member exchange	4.2577	0.6239	0.948	1.000			
Team-member echange	4.3028	0.6016	0.928	0.733*	1.000		
Organizational citizenship behavior	4.4075	0.5575	0.957	0.764*	0.786*	1.000	
Work engagement	4.4059	0.5442	0.946	0.732*	0.755*	0.795*	1.000

Note: *significant at the 0.01 level.

Table 2 presents the mean, standard deviation, composite reliability and correlation between the variables studied. The mean of each variable is above 4.00. The average calculation results showed that all four variables fell into the high category (above 3.66), suggesting the relationship between leaders and employees to be of high quality. Additionally, the relationship between employees was also rated as high. WEN was categorized as high, implying the activeness in organizational activities. The high level of OCB showed that leaders or operational employees were willing to perform tasks outside of the job descriptions. Furthermore, the standard deviation was above 0.5, suggesting that respondents filled out the questionnaire independently. The composite reliability of the questionnaire was rated as very reliable which was consistent with Byrne (2010). Meanwhile, the correlation between variables is above 0.70 which indicates that the relationship between variables is strong (Akoglu, 2018). Based on the results of this correlation test, a relationship model test can be carried out.

4.2. Relationship Model Testing Results

The results of the relationship model testing explored how LMX and TMX influenced OCB through the mediation of WEN. This model was constructed based on previous and theoretical studies and the results were presented in Figure 2.

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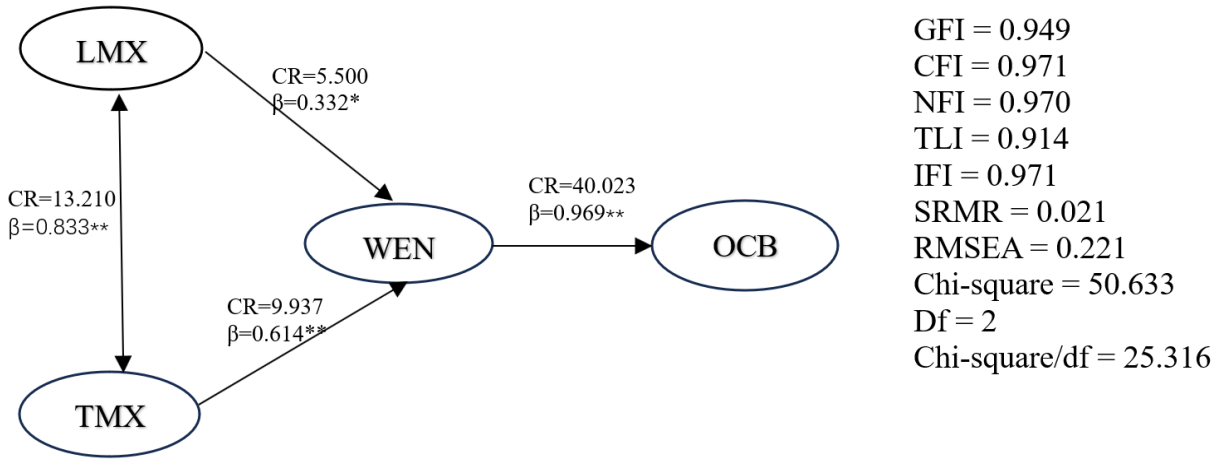

Figure 2. The influence of LMX, TMX on OCB mediated by WEN.

Note: **significant effect at 0.05.

The results showed that WEN successfully mediated the influence of LMX and TMX on OCB, confirming the model fit in the data (H1 was supported). GFI (Goodness of Fit Index), CFI (Comparative of Fit Index), and TLI (Tucker-Lewis Index) values also showed an exceeding value of 0.95, and SRMR (Standardized Root Mean Residual) was below 0.08. The relatively low Chi-square value further suggested that the relationship model fit the data well. This showed that WEN did mediate the influences of LMX and TMX on OCB.

4.3. Relationship Model's Moderation Testing

Relationship model's moderation testing was conducted focusing on gender, job position (leaders or operational employees), tenure (less than 5 years, more than 5 years to 10 years, and more than 10 years), and education (senior high school, vocational school, and undergraduate). Moderation was tested using multi-group SEM with the results described below.

4.3.1. Relationship Model of LMX, TMX, WEN, and OCB Moderated by Gender

Gender is an individual differences variable that has been proven to have an effect on the moderation test of the relationship model. The following are the results of the moderation test of the relationship model with gender as a moderating variable. The results are presented in Tables 3, 4, and 5.

Table 3. Gender difference – unconstrained parameter.

	Male		Female	
Direct effect	**β**	**CR**	**β**	**CR**
LMX → Employee engagement	0.208	1.875	0.375	5.076
TMX → Employee engagement	0.755	6.530	0.558	7.395
Employee engagement → OCB	0.994	25.475	0.956	30.335
LMX ←→TMX	0.848	8.071	0.819	10.321
Chi-square = 52.712 df = 4 Chi-square/df = 13.178				
GFI = 0.947 CFI = 0.971 RMR = 0.002 RMSEA = 0.156				
TLI = 0.912 NFI = 0.969 IFI = 0.971				

Table 3 is the result of testing the relationship model moderated by gender on the unconstrained parameters. The results show that all direct effects are significant and the relationship model fits the data as indicated by the GFI, CFI, TLI, NFI, and TLI values above 0.90.

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Table 4. Gender differences – constrained parameter.

Direct effect	Male		Female	
	β	CR	β	CR
LMX → Employee engagement	0.327	5.413	0.327	5.143
TMX → Employee engagement	0.628	9.965	0.613	9.965
Employee engagement → OCB	0.975	39.549	0.965	39.549
LMX ←→TMX	0.844	8.179	0.820	10.370
Chi-square = 71.701 df = 7 Chi-square/df = 10.243				
GFI = 0.930 CFI = 0.961 RMR = 0.005 RMSEA = 0.136				
TLI = 0.934 NFI = 0.957 IFI = 0.961				

Table 4 is the result of testing the relationship model moderated by gender on the constrained parameters. The results show that all direct effects are significant and the relationship model fits the data as indicated by the GFI, CFI, TLI, NFI, and TLI values above 0.90. Next, a comparison of the Chi-square value and degree of freedom between the two models (constrained parameters and unconstrained parameters) is carried out. The results are presented in Table 5.

Table 5. Comparison in gender difference.

Unconstrained parameter	Constrained parameter
Chi-square = 52.712 df = 4	Chi-square = 71.701 df = 7
Chi-square difference = 71.701 – 52.712 = 18.989	
Degree of freedom (df) difference = 7 – 4 = 3	
Chi-square table = 7.81473	
Chi-square calculation > Chi-square table then the conclusion is that there are differences in terms of gender.	

Table 5 presents the results of multi-group SEM showing that gender moderates the relationship model. This is indicated by the calculated Chi-square value being higher than the Chi-square table value. Therefore, the relationship between LMX and TMX as mediated by WEN and influencing OCB, differed between males and females (H2 was supported). Gender moderates the effects of LMX, TMX, and work engagement on OCB through differences in relationship perceptions, organizational identification, and collaborative abilities. Females are better able to establish relationships with leaders and coworkers, are able to build social networks, collaborate, and have the motivation to help their coworkers. Women are also more influenced by emotional support from superiors in terms of their involvement in OCB than males who prioritize competitive relationships. Understanding the role of gender in these organizational dynamics is important to create an inclusive work environment and support all employees to contribute optimally.

4.3.2. Relationship Model of LMX, TMX, WEN, and OCB Moderated by Organizational Position

Tables 6, 7, and 8 present the results of testing the relationship model with position in the organization (as an employee or leader) as a moderating variable.

Table 6. Different organizational position – unconstrained parameter.

Direct effect	Supervisor		Employee	
	B	CR	B	CR
LMX → Employee engagement	0.353	4.952	0.216	1.785
TMX → Employee engagement	0.581	7.970	0.759	6.017
Employee engagement → OCB	0.970	31.658	0.971	24.141
LMX ←→TMX	0.815	10.646	0.873	7.795
Chi-square = 50.517 df = 4 Chi-square/df = 12.629				
GFI = 0.949 CFI = 0.972 RMR = 0.002 RMSEA = 0.153				
TLI = 0.917 NFI = 0.970 IFI = 0.973				

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Table 6 is the result of testing the relationship model moderated by organizational position on the unconstrained parameters. The results show that all direct effects are significant and the relationship model fits the data as indicated by the GFI, CFI, TLI, NFI, and TLI values above 0.90.

Table 7. Different organizational position – constrained parameter.

	Supervisor		Employee	
Direct effect	**B**	**CR**	**β**	**CR**
LMX → Employee engagement	0.328	5.533	0.339	5.533
TMX → Employee engagement	0.616	10.013	0.619	10.013
Employee engagement → OCB	0.970	39.967	0.971	39.967
LMX ←→TMX	0.813	10.671	0.871	7.900
Chi-square = 62.926 df = 7 Chi-square/df = 8.989				
GFI = 0.938 CFI = 0.967 RMR = 0.006 RMSEA = 0.127				
TLI = 0.943 NFI = 0.963 IFI = 0.967				

Table 7 is the result of testing the relationship model moderated by organizational position on the constrained parameters. The results show that all direct effects are significant and the relationship model fits the data as indicated by the GFI, CFI, TLI, NFI, and TLI values above 0.90. Next, a comparison of the Chi-square value and degree of freedom between the two models (constrained parameters and unconstrained parameters) is carried out. The results are presented in Table 8.

Table 8. Comparison in organizational position difference.

Unconstrained parameter	**Constrained parameter**
Chi-square = 50.517 df = 4	Chi-square = 62.926 df = 7
Chi-square difference = 62.926 – 50.517 = 12.409	
Degree of freedom (df) difference = 7 – 4 = 3	
Chi-square table = 7.81473	
Chi-square calculation > Chi-square table then the conclusion is that there are differences in terms of organizational position.	

Table 8 presents the results of multi-group SEM showing that organizational position moderates the relationship model. The results showed that organizational position moderated the influence of LMX and TMX on OCB as mediated by WEN (H3 was supported). In other words, the influence of LMX and TMX on OCB mediated by WEN varied between leaders and employees. This is indicated by the calculated Chi-square value being higher than the Chi-square table value. Position as supervisor and employee is very important in moderating the influence of LMX, TMX, and engagement on OCB. A good relationship between leader and team members and the level of employee engagement can encourage positive behavior that supports organizational goals. Supervisors can certainly create strong relationships between leaders and their subordinates, and facilitate strong relationships between employees. Meanwhile, operational employees will feel comfortable working in close relationships with leaders and coworkers, thereby increasing their involvement in the organization. Therefore, employee position in the organization moderates this relationship model.

4.3.3. Relationship Model of LMX, TMX, WEN, and OCB Moderated by Tenure

Table 9 to Table 11 presents the results of tenure testing as a variable in the relationship model of LMX, TMX, WEN, and OCB. Testing was also carried out using multi-group SEM by comparing the model with constrained parameters and the model with unconstrained parameters.

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Table 9. Different tenure – Unconstrained parameter.

Direct effect	Young		Currently		Old	
	β	CR	β	CR	β	CR
LMX → Employee engagement	0.209	2.521	0.499	4.599	0.585	2.697
TMX → Employee engagement	0.704	8.655	0.490	4.927	0.362	1.658
Employee engagement → OCB	0.966	27.532	0.985	25.570	0.935	11.924
LMX ←→TMX	0.813	8.638	0.832	8.404	0.884	5.215
Chi-square = 65.221 df = 6 Chi-square/df = 10.870						
GFI = 0.935 CFI = 0.965 RMR = 0.003 RMSEA = 0.141						
TLI = 0.894 NFI = 0.961 IFI = 0.965						

Table 9 is the result of testing the relationship model moderated by tenure on the unconstrained parameters. The results show that all direct effects are significant and the relationship model fits the data as indicated by the GFI, CFI, TLI, NFI, and TLI values above 0.90.

Table 10. Different tenure – Constrained parameter.

Direct effect	Young		Currently		Old	
	β	CR	β	CR	β	CR
LMX → Employee engagement	0.323	5.251	0.323	5.251	0.333	5.251
TMX → Employee engagement	0.619	9.744	0.615	9.744	0.620	9.744
Employee engagement → OCB	0.962	39.967	0.988	39.090	0.925	39.090
LMX ←→TMX	0.808	8.676	0.748	8.534	0.895	5.316
Chi-square = 78.626 df = 12 Chi-square/df = 6.552						
GFI = 0.923 CFI = 0.960 RMR = 0.005 RMSEA = 0.106						
TLI = 0.940 NFI = 0.953 IFI = 0.960						

Table 10 is the result of testing the relationship model moderated by tenure on the constrained parameters. The results show that all direct effects are significant and the relationship model fits the data as indicated by the GFI, CFI, TLI, NFI, and TLI values above 0.90. The comparison results of the Chi-square value and degree of freedom between the two models (constrained parameters and unconstrained parameters) is presented in Table 8.

Table 11. Comparison in tenure difference.

Unconstrained parameter	Constrained parameter
Chi-square = 65.221 df = 6	Chi-square = 78.626 df = 12
Chi-square difference = 78.626 – 65.221 = 13.405	
Degree of freedom (df) difference = 12 – 6 = 6	
Chi-square table = 12.5916	
Chi-square calculation > Chi-square table then the conclusion is that there are differences in terms of tenure.	

Table 11 presents the results of multi-group SEM showing that tenure moderates the relationship model. The multi-group SEM results showed that tenure moderated the relationship model (H4 was supported). This is indicated by the Chi-square value which is greater than the Chi-square table value at a degree of freedom value of 6. The influence of LMX and TMX on OCB as mediated by WEN, differed based on tenure, whether employees had worked for 5 years or less, between 5 to 10 years, or for more than 10 years. This difference is supported by the average respondent's answer that the longer they work, the higher the LMX, TMX, WEN and OCB. Employees with longer tenure usually have a better understanding of organizational dynamics and interpersonal relationships. Therefore, they are better able to build positive LMX and TMX, thereby increasing their OCB. Experienced employees generally have higher levels of engagement, because they have built strong relationships with coworkers and superiors. This engagement can strengthen the influence of LMX and TMX on OCB. In addition, employees with longer tenure often feel more appreciated and supported by the organization, so they are more likely to exhibit OCB behaviors as a form of

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reciprocity for that support. They also understand the organizational culture, so they are able to behave in accordance with the expected OCB norms.

4.3.4. Relationship Model of LMX, TMX, WEN, and OCB Moderated by Education

Respondents' education is also an individual differences variable that has an influence as a moderating variable in the relationship model. The results of testing the relationship model of LMX, TMX and OCB mediated by WEN are presented in Tables 12, 13, and 14.

Table 12. Different education – Unconstrained parameter.

Direct effect	Senior high school		Vocational		Undergraduated	
	β	**CR**	**B**	**CR**	**β**	**CR**
LMX → Employee engagement	0.261	2.926	0.445	2.404	0.370	4.237
TMX → Employee engagement	0.709	7.722	0.593	3.114	0.537	6.012
Employee engagement → OCB	0.970	26.860	0.986	11.552	0.973	27.758
LMX ←→TMX	0.850	8.454	0.887	4.016	0.803	9.158
Chi-square = 53.569 df = 6 Chi-square/df = 8.928						
GFI = 0.946 CFI = 0.972 RMR = 0.002 RMSEA = 0.126						
TLI = 0.916 NFI = 0.964 IFI = 0.972						

Table 12 is the result of testing the relationship model moderated by education on the unconstrained parameters. The results show that all direct effects are significant and the relationship model fits the data as indicated by the GFI, CFI, TLI, NFI, and TLI values above 0.90.

Table 13. Different education – Constrained parameter.

Direct effect	Senior high school		Vocational		Undergraduated	
	β	CR	β	CR	β	CR
LMX → Employee engagement	0.341	5.580	0.371	5.580	0.310	5.580
TMX → Employee engagement	0.628	10.090	0.666	10.090	0.597	10.090
Employee engagement → OCB	0.961	39.939	0.987	39.939	0.978	39.939
LMX ←→TMX	0.846	8.491	0.894	4.164	0.807	9.284
Chi-square = 60.335 df = 12 Chi-square/df = 5.028						
GFI = 0.942 CFI = 0.971 RMR = 0.003 RMSEA = 0.090						
TLI = 0.957 NFI = 0.965 IFI = 0.972						

Table 13 is the result of testing the relationship model moderated by education on the constrained parameters. The results show that all direct effects are significant and the relationship model fits the data as indicated by the GFI, CFI, TLI, NFI, and TLI values above 0.90. The comparison results of the Chi-square value and degree of freedom between the two models (constrained parameters and unconstrained parameters) is presented in Table 14.

Table 14. Comparison in education difference.

Unconstrained parameter	**Constrained parameter**
Chi-square = 53.569 df = 6	Chi-square = 60.335 df = 12
Chi-square difference = 60.335 – 53.569 = 6.766	
Degree of freedom (df) difference = 12 – 6 = 6	
Chi-square table = 12.5916	
Chi-square calculation > Chi-square table, the conclusion is that there is no difference in terms of education.	

Table 14 presents the results of multi-group SEM showing that education moderates the relationship model. The results of the moderation testing showed that education did not moderate the influence of LMX and TMX on OCB

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as mediated by WEN (H5 was not supported). Therefore, education did not moderate the influence of LMX and TMX on OCB as mediated by WEN. This is indicated by the Chi-square value which is greater than the Chi-square table value at a degree of freedom value of 6. LMX and TMX are more influenced by the dynamics of interpersonal relationships in the workplace than by the level of formal education, because the quality of interactions can better determine the level of employee engagement. Employee engagement is more influenced by work experience and work environment than formal education. Employees with good work experience can show OCB even though they have varying educational backgrounds. Education may not always be directly related to the application of LMX and TMX theories in daily practice in the workplace. This can be seen in individuals with high educational backgrounds do not always have the interpersonal skills needed to build strong relationships with their leaders or teams. Therefore, although education is an important factor in individual development, in the context of the influence of LMX and TMX on OCB through employee engagement, education does not function as a significant moderator. More emphasis on the quality of interpersonal relationships and work experience becomes more relevant in explaining this phenomenon.

5. DISCUSSION

This study aims to test WEN as a mediator in the influence of LMX and TMX on OCB. It also examines the role of individual differences in the relationship model including LMX, TMX, WEN, and OCB. Both dispositional and situational factors influence employee attitudes and behavior in the workplace. The results confirm that WEN mediates the influence of LMX and TMX on OCB. This correlates with previous studies showing that interpersonal relationships between employees, leaders, and coworkers are mediated by work engagement (Aboramadan & Dahleez, 2020; Breevaart & Bakker, 2018). Employees who feel close to leaders become more attached to the work and organization leading to improved performance. Similarly, strong relationships with coworkers can enhance experience and stimulate performance.

Previous studies have further shown that individual characteristics moderate the influence of leader-employee and employee-employee relationships on attitudes and performance (Aggarwal et al., 2020; Buengeler et al., 2021; Herrero & Bornay-Barrachina, 2024; Rapp & Mathieu, 2019; Shkoler et al., 2019; Terpstra-Tong et al., 2020). These studies also emphasize the importance of moderating variables when examining the influence of workplace social relationships on employee and organizational performance (Hooper & Martin, 2008; Kang et al., 2023; Shkoler et al., 2019; Tremblay et al., 2021). This study explores how individual characteristics such as gender, organizational position, tenure, and education, moderate the influence of LMX and TMX on OCB with WEN serving as a mediator. The results showed that individual differences indeed act as control variables or moderators in the relationship model. Gender, position, tenure, and education are used as moderating variables in this study.

The results showed that gender moderates the influence of LMX and TMX on OCB mediated by WEN. This was consistent with previous studies such as Collins et al. (2014); Jiang and Hu (2016); Manadin et al. (2023) and Tziner et al. (2020). There are differences between males and females in perceiving interpersonal relationships in the workplace. The influence of workplace social exchanges on OCB, mediated by WEN, also varies between males and females. Gender plays a role in social interactions in the workplace because gender influences how people communicate, behave, and play roles within organizations.

This study further proves that organizational position influences how employees and leaders interpret relationships. This correlate with several previous studies including Buengeler et al. (2021); Chen (2023); Shkoler et al. (2019) and Sui et al. (2016). The position of an individual as a leader or operational employee is different in interpreting the closeness of the relationship. Leaders often believe that all employees are treated equally while employees perceive differences in how the superiors interact with coworkers. Employees working under the same leader also interpret social interactions differently. Consequently, the influence of social interactions on OCB, mediated by WEN, varies between leaders and operational employees.

Views on LMX, TMX, WEN and OCB differ between leaders and employees. This is because leaders generally position themselves as mentors, teachers, or instructors, while employees are students or implementers. This causes differences in their perception of social interaction in the company. WEN also differs between leaders and employees. Employees are engaged because they enjoy their work, while leaders are engaged because there are interests to be achieved. OCB of employees and leaders also differs because a job that according to the leader is an obligation for employees, but employees consider it an extra role outside the job description.

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The results further examined how tenure moderated the relationship between LMX, TMX, WEN, and OCB. The study found that tenure moderated the relationship between LMX and TMX on OCB as mediated by WEN. This supports the results of previous studies including Kim et al. (2015); Liao et al. (2013); Manadin et al. (2023) and Wang et al. (2012). Employees with less than 5 years of experience interpret social exchange relationships with leaders and coworkers differently compared to those with more than 5 years but less than 10 years, and those with more than 10 years. The impact of social exchange within the workplace on performance, mediated by work engagement, varies between senior and junior employees. Senior employees who typically have more social interactions in the workplace, tend to be more actively engaged.

However, this study is not consistent with earlier results suggesting that education moderates the influence of LMX and TMX on OCB with WEN as the mediator (Kang et al., 2023; Kim et al., 2023; Liao et al., 2013; Manadin et al., 2023; Mao et al., 2019; Xu et al., 2024). It also shows that employees with varying levels of education such as high school, vocational, or undergraduate degrees, do not differ in the interpretation of social interactions with leaders and coworkers. Furthermore, the influence of social interaction on performance through WEN is not influenced by education level. This is because small and medium enterprises employees are not grouped by their jobs based on their education level. Discussions in completing work are also not differentiated based on education. Therefore, social interactions in their workplace are also not influenced by their education level.

6. CONCLUSION

In conclusion, individual differences could not be overlooked when analyzing social interactions in the workplace. Dispositional factors also influenced the formation of values in the organization. However, environmental factors required examination for the influence on employee attitudes and performance. Employee performance was not directly influenced by leadership and coworkers but rather by work engagement variables. This study further emphasized the importance of mediating variables in testing the influences of social interactions on employee performance, as well as the necessity of considering individual characteristics as moderating variables.

This study was not without limitations as the use of self-assessment in measuring independent and dependent variables introduced the potential for common method variance and an increase in beta values (Podsakoff & Organ, 1986). Additionally, testing the mediation model would be more effective with longitudinal data rather than cross-section. A larger sample size could also have strengthened the results of this study. Future research on LMX and TMX on work attitudes requires specific work attitude variables, such as job satisfaction, organizational commitment, work involvement, or employee work engagement. In addition, it is necessary to distinguish between government companies and private companies, because of the differences in the work environment.

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The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

DATA AVAILABILITY STATEMENT

all data are in the author’s file.

COMPETING INTERESTS

The authors declare that there is no competing interest

AUTHORS’ CONTRIBUTIONS

The author determined the research topic, research design, data processing and analysis. The author was assisted by a research assistant to collect survey data. The author prepared the manuscript to be published.

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