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**THE MODERATOR ROLE OF LEADER MEMBER EXCHANGE ON THE
EFFECT OF LONELINESS AT WORK ON ORGANIZATIONAL CITIZENSHIP
BEHAVIOR**

***İş Yaşamında Yalnızlığın Örgütsel Vatandaşlık Davranışı Üzerindeki Etkisinde Lider Üye
Etkileşiminin Düzenleyici Rolü***

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ÖZ

Bu araştırma iş yaşamında yalnızlığın lider üye etkileşimi ve örgütsel vatandaşlık davranışı üzerindeki etkilerine odaklanmaktadır. Bu noktadan yola çıkılarak iş yaşamında yalnızlık, örgütsel vatandaşlık davranışı ve lider üye etkileşimi değişkenlerini ele alan ve özgün bir model önerilmiştir. Bu modeldeki etkileşimlerin test edilmesi amacıyla çeşitli üniversitelerde görev yapan akademisyenlerden anket yöntemiyle veri toplanmıştır (N=409). Bu veriler, SPSS-27 ve AMOS-22 paket programları kullanılarak analiz edilmiştir. Regresyon temelli Process Makro analizi ile yapılan hipotez testleri sonucunda, iş yaşamında yalnızlığın hem örgütsel vatandaşlık davranışı hem de lider üye etkileşimi üzerinde negatif ve anlamlı bir etkisi olduğu görülmüştür. Araştırmada lider üye etkileşiminin iş yaşamında yalnızlığın örgütsel vatandaşlık davranışı üzerindeki etkisinde düzenleyici rolünün incelenmiş ve bunun sonucunda lider üye etkileşiminin bu iki değişken arasındaki ilişkide düzenleyici rolünün olduğu tespit edilmiştir. Bu sayede önerilen modelin özgün olduğu da ortaya konulmuştur. Bu ampirik çalışma sonucunda elde edilen bulgular, iş yaşamında yalnızlığın, başta örgütsel davranış ve lider üye etkileşimi olmak üzere, etkilediği konuların resmedilmesi açısından literatüre katkı sağlamaktadır. Ayrıca iş yaşamında yalnızlığın farklı örneklem grupları ve örgütsel davranış konularıyla birlikte incelenmesinin gerek işletme yönetimine gerekse akademik literatüre iş süreçlerinin iyileşmesi ve gelecek çalışmalara rehberlik etmesi gibi katkılar sağlayacağı değerlendirilmektedir.

ABSTRACT

This research focuses on the effects of loneliness at work on leader member exchange and organizational citizenship behavior. Start from this point, a unique model has been proposed that deals with the variables of loneliness at work, organizational citizenship behavior and leader member exchange interaction. In order to test the interactions in this model, data were collected from academicians working at various universities by questionnaire method (N=409). These data were analyzed using SPSS-27 and AMOS-22 package programs. As a result of the hypothesis tests performed with the regression-based Process Macro analysis, it was seen that loneliness at work has a negative and significant effect on both organizational citizenship behavior and leader-member exchange. As a result of examining the moderator role of leader-member exchange on the effect of loneliness at work on organizational citizenship behavior, which constitutes the original aspect of the research, it has been determined that leader-member exchange has a moderating role in the relationship between these two variables. In this way, it has been revealed that the proposed model is original. The findings obtained as a result of this empirical study contribute to the literature in terms of illustrating the issues that loneliness at work affects, especially organizational citizenship behavior and leader member exchange. In addition, it is considered that examining loneliness at work together with different sample groups and organizational behavior issues will make important contributions to both business management and academic literature.

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1. Introduction

In today's fast-paced world, organizations are constantly affected by rapid changes. Reflecting and integrating important issues such as technology, artificial intelligence, digitalization, and financial changes into the business world are crucial for organizations. The successful integration of these variables is not only related to the software and hardware that can be produced or purchased, but also to organizational behavior. Organizational behavior is a crucial factor for success, especially for businesses that aim to achieve sustainable competitive advantage.

Loneliness at work which is under the organizational behavior discipline, can have significant negative effects on both the organization and its employees (Anand & Mishra, 2018). Because employees work in complex and varied interpersonal relationships, they may experience loneliness if they struggle to navigate these relationships socially (Wright, 2005). Despite being a prevalent issue in organizations, loneliness at work has received low attention in the field of human resource management. Loneliness at work is primarily an individual feeling experienced by employees in the workplace. The increasing competition in the workplace makes it more and more difficult for them to establish genuine social relationships (Peng et al., 2017). Although social relationships are crucial in human life (Ozcelik & Barsade, 2018), individuals spend most of their time in social environment, particularly at workplaces (Kim and Qu, 2020). However, there are limited studies investigating loneliness and its negative effects in business life. Rokach (2014) argues that an employee who feels lonely in their work life suffers because they receive little respect from their colleagues or superiors. This leads them to feel isolated and make a relatively negative evaluation of themselves. Additionally, Lam and Lau (2012) emphasize that individuals who feel lonely in the workplace often possess low social skills and perception levels of social risks. Furthermore, they tend to focus more on negative social behaviors than positive ones (Cacioppo and Hawkey, 2009). Consequently, employees who feel lonely are more likely to perceive threats than opportunities (Jung et al., 2021). Research conducted in deluxe hotels (Tsaour et al., 2019; Park and Min, 2020) has revealed the need for policies that improve employees' social relations and reduce loneliness in the workplace. These practices are effective at attracting and retaining qualified employees (Chan, 2010; Haldorai and Kim, 2020). According to Jung et al. (2021), improving the social relations of employees and managing their feelings of loneliness can facilitate the sustainable growth of organizations.

By the development of the Fourth Industrial Revolution, the careers of lecturers have become increasingly competitive. In recent times, the demands on instructors to work with specialized and diverse foreign student groups have constantly increased. However, professors also play an important role in stimulating enthusiasm, encouraging students, and introducing learning techniques based on test results (Purwanto, 2020). According to Purwanto (2020), Industrial Revolution 4.0 highlights the need to plan for human capital by assigning responsibilities to teaching staff. Therefore, instructors must continuously develop and strengthen their skills to stay current and become instructors with knowledge of the future, not the past. The problems with University Leader Member Exchange (LMX) are based on direct observation and interviews with many university professors. Kadiyono (2020) describes LMX as a concept that can positively contribute to both parties by increasing the efficiency of the connection between administrators and faculty members. The relationship between instructors and administrators can be categorized as either good or bad. A good relationship is characterized by trust, positivity, and loyalty towards the instructors, while a bad relationship represents the opposite (Bahdin 2020; Abidina 2020; Yunita, 2020; Purwanto, 2020). Various research methods have highlighted that many university employees, particularly academic staff, are unwilling to take on additional jobs outside of their primary duties. A significant number of employees express job dissatisfaction and a desire to leave the university. This points to a relatively weak level of organizational citizenship behavior (Fahmi, 2008; Sartika, 2020; Achmadi, 2020).

Numerous studies have been conducted to determine the relationship between loneliness and organizational citizenship behavior in the business world (Firoz & Chaudhary, 2022; Gardner et al., 2005; Özçelik & Barsade, 2018; Lam & Lau, 2012). However, only a few studies have investigated cases that mediate and moderate the relationship between these two variables. In a detailed literature review, it was discovered that no study has been conducted to determine the moderator role of the LMX concept, which forms the theoretical framework for many studies, in the relationship between these two variables. Although the variables of LMX, loneliness at work, and organizational citizenship behavior have been discussed separately, it was observed that these three variables have not been examined together in any study, regardless of their relationship aspects

The moderator role of leader member exchange on the effect of loneliness at work on organizational citizenship behavior (dependent, independent, mediator, moderator, etc.). This study aims to address a gap in the literature, which will be its most significant original contribution. As such, it is expected to make an important contribution to the field and guide future studies. Additionally, the quantitative determinations resulting from this study are expected to support current or future theoretical studies in related fields.

The purpose of this research is to benefit universities and academic literature by demonstrating the impact of organizational behavior issues, which play a crucial role in maintaining the productivity of academics and universities. Specifically, this study examines the effects of loneliness at work on leader-member exchange and organizational citizenship behavior, as well as the impact of LMX on organizational citizenship behavior. The research's primary focus is to investigate the moderating role of LMX in the relationship between loneliness at work and organizational citizenship behavior. The research sample consists of 409 academics working at various universities in Turkey. The study aims to test the hypotheses related to the Conservation of Resources Theory and literature. The model reveals that loneliness at work has a negative impact on both organizational citizenship behavior and leader-member interaction. Moreover, the study suggests that LMX plays a moderating role in the impact of loneliness in the workplace on organizational citizenship behavior.

2. Literature Review

2.1. Loneliness at Work

Weiss (1975), one of the early pioneers of loneliness research, identified two types of loneliness. The first is emotional isolation, which refers to a lack of close relationships. The second is social isolation, which represents a lack of social connections such as coworkers. Today, our understanding of loneliness has diversified significantly, and many more types of loneliness have been defined by academics (Hyland et al., 2018). These range from existential loneliness (Mijuskovic, 2012) to ontological, relational, emotional, and cultural loneliness (McGraw, 1995), as well as loneliness at work (Özçelik & Barsade, 2018; Wright, 2005). The definitions of social loneliness and workplace loneliness are quite similar. To highlight the difference: while social loneliness is expressed only as the existence of inadequate social relations and the perceived relational gap between one's real and desired relationships (Lam & Lau, 2012), loneliness at work is expressed as the lack of quality relationships in the workplace (Wright et al., 2006). Erlich (1998), approaching this distinction from a different perspective, emphasizes that loneliness is a subjective and individual experience by nature. Therefore, it can occur in different ways in every environment and under different conditions. Although there are few studies in the literature on loneliness at work, the concept can be defined in various ways. According to Lam and Lau (2012: 4265), loneliness at work refers to "*insufficient or unsatisfactory social relations,*" while Wright et al. (2006: 63) define it as "*difficulties caused by the inability to perceive quality relationships among employees in the business environment.*"

2.2. Organizational Citizenship Behavior

Podsakoff et al. (2000) define Organizational Citizenship Behavior (OCB) as individual behavior that is optional, does not expect direct and explicit rewards from the formal reward system, and promotes the effectiveness of organizational functions as a whole. According to Aldag and Reschke (1997), OCB is an important individual contribution used to overcome the requirements of roles in the workplace. Kuehn and Busaidi (2002) state that OCB includes behaviors exhibited by employees who take on extra roles even though they are not officially appointed by the organization. The parameters for measuring OCB are listed below (Ridwan et al., 2020):

- Sacrifice: helping colleagues, changing job roles, and giving direction;
- Courtesy: mutual respect, avoidance, and consultation;
- Sportsmanship (agility): respecting time, solving problems, accepting policies, and tolerating conditions;
- Conscientiousness: reporting, completing work, and producing useful work;
- Virtue: showing interest, getting involved, and providing advice.

Organizational Citizenship Behavior (OCB) is an important aspect of the field of organizational behavior. It is an individual choice and initiative that is not related to the official reward system of the organization, but collectively increases organizational effectiveness (Sari and Ali, 2022). Over the last three decades, there has

been increasing interest among academics and practitioners to examine and analyze the concept of OCB and its impact in the field of organizational behavior (Takeuchi et al., 2015).

According to Vizano et al. (2020), an individual effort that exceeds the demands of a position in the workplace is considered organizational citizenship behavior. From this perspective, such behavior is considered pro-social and can help to increase productivity, encourage meaningful behavior, and add value to the individual (Purwanto, 2020).

2.3. Leader Member Exchange

Leader-Member Exchange (LMX) is a theoretical framework that has been the focus of many scientific research studies from the past to the present. It is a two-way mechanism between leaders and their followers to establish a connection and exchange. Graen and Uhl-Bien (1995) argue that LMX is based on mutual relations between workers and their leaders, which encourages both parties to provide input to each other. From a different perspective, Liden and Maslyn (1998) emphasize that LMX symbolizes leaders' respect for the talents and experiences of their followers, mutual commitment, and mutual love. In light of these statements, it is expected that LMX fosters a reciprocal relationship between leaders and employees. This relationship includes compassionate contact, joint participation, loyalty, and respect between people. Good relations between managers and employees can also increase work efficiency (Purwanto, 2020).

Truckenbrodt (2000) emphasizes that each employee and leader develops different relationships. However, the partnership and interaction between an organization, management, and staff can be divided into two categories: in-group and out-group. In the in-group relationship, employees and leaders have a strong bond based on the same destiny, faith, and love for each other. In the out-group relationship, the leader's role is more professional with employees. This is because there is little time for intimacy, and workers have little opportunity to interact with their bosses outside of usual authority interactions.

LMX does not always produce the same output and results in the relationship between a leader and their team members. Liden and Maslyn (1998) emphasize that the time it takes to develop a relationship between a leader and a subordinate can vary greatly. Some relationships take a long time to establish, while others can be formed relatively quickly. However, some relationships may not be established at all.

A shared partnership between management and employees is essential for the implementation of LMX (Purwanto, 2020). According to Liden and Maslyn (1998), it is important to understand a certain level of task-oriented responsibilities between leaders and employees in order to achieve common goals.

High-quality and mutual contributions between the leader and the employees ensure that the employees are willing to make sacrifices for the leaders, their colleagues, and the business. The higher the employee participation level, the better the output of the LTE.

Leaders prefer to employ loyal personnel to establish a healthy LMX. From the perspective of the organization's success, mutual loyalty between employees and leaders is required (Liden & Maslyn, 1998).

2.4. Loneliness at Work and Organizational Citizenship Behavior

The experience of loneliness at work can lead individuals to develop negative perceptions of themselves and others. This, in turn, reduces their confidence in their abilities and may prevent them from initiating or establishing social relationships (Gardner et al., 2005). Lonely individuals often become suspicious of others' motives, which further impedes social interaction in the workplace (Rotenberg et al., 2010). These employees may be reluctant to help their colleagues or socialize with them, fearing their efforts will go unrewarded (Lam & Lau, 2012). The absence of emotional support and social companionship in the workplace can cause lonely employees to perceive a lack of social support, which negatively affects their identification with the organization. Low perceived organizational support and identification may cause employees to withdraw from work (Dilla, 2022; Özçelik & Barsade, 2018) and be less willing to go beyond formal job requirements, resulting in fewer extra role behaviors such as giving advice or helping others (Lam & Lau, 2012). As a result, the unmet social change needs of lone workers in organizations are likely to reduce their willingness and ability to engage in citizenship behaviors towards both their colleagues and the organization (Firoz & Chaudhary, 2022).

Based on the literature and the The Conservation of Resources Theory, the following hypothesis has been proposed:

H1: Loneliness at work has a significant and negative impact on organizational citizenship behavior.

2.5. Loneliness at Work and Leader Member Exchange

LMX theory suggests that leaders may not treat all followers equally, resulting in different qualities of relationships between them (Dienesch & Liden, 1986). The leader has a close relationship with a few key followers who are part of the ingroup (high LMX), while the rest are part of the outgroup with formal relationships (low LMX) (Dienesch & Liden, 1986; Steffens, Haslam, & Reicher, 2014). In-group members receive more attention and support from the leader than out-group members (Dienesch & Liden, 1986). Research on the LMX Theory has enhanced our understanding of workplace behaviors (Dulebohn, Bommer, Liden, Brouer, & Ferris, 2012). However, most studies focus on the positive effects of LMX on follower outcomes. Research examining situations where LMX may have an adverse impact on follower outcomes is limited (Naseer, Raja, Syed, Donia, & Darr, 2016). Anand and Mishra's (2021) study argues that LMX does not overlook the negative influence of loneliness on a follower's work performance.

Interpersonal relationships can bring both threats and encouragement to individuals (Gable & Berkman, 2008). Positive relationships activate two types of processes, namely 'hope of attachment' (approach) and 'fear of rejection' (avoidance) (Gable & Berkman, 2008). Scholars argue that the approach and avoidance should be viewed in light of the possibilities and constraints of particular situations (Corr, 2013). For example, in a negative situation, individuals engage in avoiding the approach process to maintain their positive relationships (Gable & Berkman, 2008). They try to minimize the fear of deterioration of positive relationships. Therefore, in the case of high LMX, lonely individuals in business life are concerned about the deterioration of their relationships with their leaders (Murphy & Kupshik, 1992) due to fear of rejection and insecurity. Anxiety arising from the fear of deterioration of high LMX quality can create an unmanageable negative situation for followers (Greenbaum, Mawritz, & Piccolo, 2015). This can lead to low energy and mental fatigue, resulting in emotional exhaustion (Chi & Liang, 2013; Fritz & Sonnentag, 2006). As a result, employees who are alone in their work-life experience more emotional exhaustion in low LMX than in high LMX relationships.

According to a study, there is a significant positive relationship between loneliness and fear of rejection. The study concludes that lonely individuals tend to avoid situations to maintain positive relationships (Gable & Berkman, 2008). Based on these findings, it is predicted that a high LMX (leader-member exchange) relationship can have negative outcomes for alone worker compared to a low LMX relationship (Anand and Mishra, 2021).

Considering the literature and the theory of conservation of resources, the following hypothesis is proposed:
H2: Loneliness at work has a meaningful and negative effect on LMX.

2.6. Leader-Member Exchange and Organizational Citizenship Behavior

LMX theory suggests that troubled employees who receive favorable treatment from others feel compelled to respond positively or improve their behavior in some way (Teng et al., 2020). Likewise, employees with high-quality LMEs feel compelled to reciprocate when they receive more support and resources from their leaders, often resulting in increased effort and favorable work-related attitudes and behaviors. This explains why many previous studies have found positive job-related outcomes such as higher job performance, job satisfaction, commitment, organizational identification, and organizational citizenship behavior (Cha & Borchgrevink, 2018; Kim & Koo, 2017; Luo et al., 2014; Wang et al., 2017). Based on the findings of these studies, it is clear that leader-member exchange (LMX) plays a critical role in shaping the work-related attitudes and behaviors of employees, such as organizational identification and organizational citizenship behavior. In a study conducted by Teng et al. (2020), it was emphasized that LMX functions as a boundary condition that affects the indirect relationship between an ethical work environment and organizational citizenship behavior.

According to Eisenberger et al. (2010), the reason why Leader-Member Exchange (LMX) can contribute to organizational-level attitudes is that employees often view their leaders as representatives of the organization and as key individuals who manage employment relations. Hogg et al. (2005) state that leaders also embody the prototype features of the organization and create social effects on employees. Employees who have good

quality LMXs are more likely to perceive their organization as trustworthy. This is because these employees often receive more organizational resources and support from the social network of supervisors, who are representatives of the organization (Sparrowe and Liden, 1997). This situation leads to the development of many positive organizational attitudes, including organizational citizenship behavior.

As discussed earlier, a marked ethical work environment can contribute to employee identification with the organization. This identification may be even stronger when employees perceive that they have a good LMX relationship with their superiors. Consequently, when organizational identification is strengthened, organizational members are more willing to exhibit in-role/out-of-role job performance, such as organizational citizenship behavior (Teng et al., 2020).

Considering the above literature and the Conservation of Resources Theory, we propose the following hypothesis:

H3: Leader-member exchange has a meaningful and positive effect on organizational citizenship behavior.

2.7. Lead Member Exchange as a Moderator Variable

The concept of LMX has been studied in various roles (dependent, independent, mediator, moderator variable) in numerous studies (Peng et al., 2017; Jung et al., 2021; Wulani et al., 2022). The common objective of these studies is to illustrate the relationship between LMX and organizational behavior issues. When examining national and international literature in detail, studies are found that investigate the mediator and moderator roles of LMX in the relationship between loneliness and OCB in business with different variables (Yu et al., 2021; Lam & Lau, 2012; Lu & Gürsoy, 2023). Wright et al. (2006) and Rokach (2014) conducted studies that indicate a negative correlation between loneliness at work and LMX. In other words, high LMX levels lead to less loneliness in work life, while low LMX levels contribute to loneliness in work life. This is explained by the fact that loneliness is always caused by interpersonal inadequacy that keeps people away from social opportunities.

Employees who experience loneliness in their professional lives often suffer from low self-esteem and feel excluded from group membership. Consequently, they tend to make negative evaluations of themselves, which in turn causes their leaders to neglect to meet their role expectations. As a result, their relationship with their leaders can become seriously damaged (Rokach, 2014; Chen, Wen, Peng & Liu, 2016). In these situations, leaders often choose not to invest too much time or resources in such employees, which hinders the development of LMX (Peng et al., 2017). This situation worsens employees' distrust of leaders and reinforces their reluctance to fulfill assigned roles (Joo, Yang, & McLean, 2014). If employees reject even basic roles, they will naturally avoid taking on additional duties and responsibilities, making it impossible to form the concept of organizational citizenship behavior or destroying existing awareness of it (Pan, Sun, & Chow, 2012; Zhao, Kessel & Kratzer, 2014).

According to Wright et al. (2006), loneliness results from an inability to establish interpersonal relationships, which causes employees to obsess over social opportunities. Lam and Lau (2012) suggest that loneliness at work is negatively correlated with LMX and organizational citizenship behavior. They also claim that the higher the LMX, the lower the negative impact of loneliness at work on organizational citizenship behavior. In other words, LMX plays an important moderating role in the relationship between loneliness at work and organizational citizenship behavior.

Based on the literature explanations and the Conservation of Resources Theory, the following hypothesis has been proposed:

H4: Leader-member exchange plays a moderating role in the impact of loneliness at work on organizational citizenship behavior.

3. Methodology

3.1. Research Model

The study was designed using a quantitative research approach. It aimed to determine the effect of loneliness at work on the organizational citizenship behavior of academics working in various universities in Turkey and to examine the moderating role of LMX in this effect. To accomplish this, a relational screening model was

The moderator role of leader member exchange on the effect of loneliness at work on organizational citizenship behavior employed to determine the presence and extent of the effect between the variables. The research model is illustrated in Figure 1.

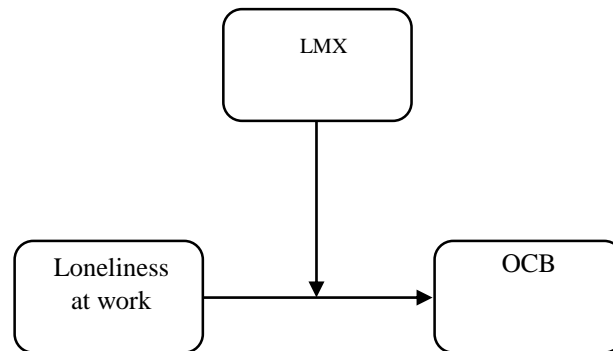


Figure 1. Research Model

3.2. Sample

The study group in this research consisted of academicians in the 2022-2023 academic year. The participants were selected using the convenience sampling method and were sent electronic questionnaires. Additionally, they were asked to share the questionnaires with another academician, utilizing the snowball sampling method to expand the sample size. Out of the total 409 participants, 62.8% (257) were male and 37.2% (152) were female. 63.8% (261) of these participants were married, and 36.2% (148) were single. Among the participants, 35.2% (144) were research assistants, 28.6% (117) were lecturers, 24.0% (98) were PhD lecturers, 8.1% (33) were associate professors, and 4.2% (17) were professors.

3.3. Measurement Tools

Personal Information Form

To determine the demographic characteristics of the participants, the researchers prepared a personal information form. The form includes questions about marital status, gender, and job responsibilities of the participants.

Loneliness at Work Scale (LAWS)

The Loneliness at Work Scale (LAWS), developed by Wright, Burt, and Strongman (2006), was utilized to determine the sense of loneliness experienced by participants in their work life. The scale was adapted into Turkish by Doğan, Çetin, and Sungur (2009), wherein it was found to be sufficiently valid and reliable for use in studies conducted on Turkish employees. High scores given to questions in the 16-item, 5-point Likert-type scale indicate a high level of loneliness in work life. In this study, the Cronbach Alpha internal consistency coefficient of the loneliness at work scale, considered as a single-factor structure, was calculated as 0.903. An example of an expression used in the scale is, "When I am under pressure at work, I feel left alone by my co-workers."

Organizational Citizenship Behavior Scale

The organizational citizenship behavior scale, developed by DiPaola, Tarter, and Hoy (2005), was utilized to measure the organizational citizenship behavior of the study participants. Taştan and Yılmaz (2008) adapted the scale to Turkish, and the adaptation study confirmed its validity and reliability for use in studies on Turkish employees. High scores on the 12 questions in the 5-point Likert-type scale indicate greater organizational citizenship behavior. For example, the statement "I help students in my personal time" is included in the scale. In this study, the Cronbach's alpha internal consistency coefficient of the organizational citizenship behavior scale, as a single-factor structure, was calculated to be 0.898.

Leader Member Exchange Scale

The Leader-Member Exchange Scale (LMX-7), developed by Graen and Scandura (1987), was utilized to assess the quality of participants' relationships with their leaders. The scale has been widely used in studies of Turkish sample groups, with highly reliable results reported (Erdoğan & Liden, 2006; Özutku, Veysel, & Cevrioğlu, 2008). High scores on the scale indicate strong leader-member exchange. In studies conducted in Turkey, it has been found that the factorial structure of the scale is consistent with its original single-factor structure. The scale consists of seven 5-point Likert-type questions, and in this study, the Cronbach's Alpha internal consistency coefficient of the scale, as a single-factor structure, was calculated as 0.871. An example of a statement on the scale is "My manager understands my problems and needs."

3.4. Data Collection and Data Analysis

An electronic questionnaire was created to collect data from 208 universities registered on the official website of the Higher Education Institution (www.yok.gov.tr). To reach the participants, the questionnaire was sent to the official email addresses of 10 academics from each university, selected through convenience sampling method. In the email, the research purpose was explained and other academics were requested to forward the email.

All stages of the research were conducted in accordance with the principles of the Declaration of Helsinki. Ethical permissions for data collection were obtained from the Ethics Committee of World Peace University (WPU-ETK-2023-12).

The IBM SPSS 27 (Statistical Package for the Social Sciences) and IBM SPSS AMOS 22 (Analysis of Moment Structures) package programs were utilized to analyze the data set. Frequency analysis was conducted to determine the demographic structure. The reliability of the scales was assessed using the Cronbach Alpha internal consistency coefficient and combined reliability values. To assess normal distribution, kurtosis and skewness values were examined. Pearson Product Moments correlation analysis was performed to determine the relationships between the variables. Finally, regression-based analysis was conducted with Process Macro to test the research hypotheses (Model 1). A statistical significance level of $p < 0.05$ was set for all analyses.

4. Findings

To test the structural validity of the scales used in the study, several fit indices were checked. These included CMIN/Df, the goodness of fit index (GFI), adjusted goodness of fit index (AGFI), and the root mean square error of approximation (RMSEA). In the literature, $CMIN/Df \leq 5$, $GFI \geq 0.85$, $AGFI \geq 0.85$, and $RMSEA \leq 0.08$ are considered acceptable conditions (Meydan & Şeşen, 2011).

The analysis performed on the loneliness at work scale ($CMIN/Df = 4.258$; $GFI = 0.901$; $AGFI = 0.877$; $GFI = 0.906$; $RMSEA = 0.053$), organizational citizenship behavior scale ($CMIN/Df = 3.685$; $GFI = 0.885$; $AGFI = 0.874$, $GFI = 0.899$; $RMSEA = 0.056$), and leader member exchange scale ($CMIN/Df = 2.899$; $GFI = 0.918$; $AGFI = 0.902$ $GFI = 0.932$; $RMSEA = 0.048$) showed good and acceptable fit statistics with some modifications. Furthermore, the scales exhibit high reliability and internal consistency, as indicated by Cronbach's Alpha and Composite reliability values of 0.7 and above (Sürücü & Maslakçı, 2020; Sürücü, Şeşen, & Maslakçı, 2023). Table 1 presents the Cronbach's Alpha reliability coefficients and Composite reliability values for the variables. Prior to conducting correlation analysis to determine the relationship between the variables, the distribution of the data was checked. The kurtosis and skewness values were used to assess the data distribution. In accordance with the literature, when these values are between -1.5 and +1.5, the distribution is considered normal (Sürücü, Şeşen, & Maslakçı, 2023). The kurtosis and skewness values in the analysis were between -1.5 and +1.5, indicating that the data obtained from the scales exhibited a normal distribution. Accordingly, the Pearson correlation analysis results were used to determine the relationship between the variables in the study.

Table 1. Reliability Values for the Scales

Variables	Items	Cronbach Alfa	CR
1. Loneliness at Work	16	0,903	0,911
2. Organizational Citizenship Behavior	12	0,898	0,908
3. Leader Member Exchange	7	0,871	0,874

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After analyzing the validity and reliability of the scales, a Pearson correlation analysis was conducted to examine the relationships between the descriptive statistics, analyses, and variables. Table 2 displays the average scores obtained from the scales, the standard deviation values of the scores, and the correlation coefficients of the relationships between the variables.

Table 2. Results of Descriptive Statistics and Pearson Correlation Analysis

Variables	Mean	sd.	1.	2.	3.
1. Loneliness at Work	2,30	0,88	1,00	-0,331	-0,317
2. Organizational Citizenship Behavior	3,44	0,67	-0,331	1,00	0,423
3. Leader Member Exchange	3,21	0,77	-0,317	0,423	1,00

** Significant at the $p < 0.05$ level

When examining Pearson correlation analyses, significant negative relationships are found between loneliness at work (H1) ($r = -0.331$; $p < 0.05$) and leader-member exchange (H2) ($r = -0.317$; $p < 0.05$). Moreover, a significant positive relationship is observed between leader-member exchange and organizational citizenship behavior (H3) ($r = 0.423$; $p < 0.05$).

To test the research hypotheses, the Process Macro approach was used, which is currently accepted as giving healthier results compared to the traditional method of Baron and Kenny (1986) (Sürücü, Şeşen, & Maslakçı, 2023). Process Macro is a program developed by Andrew F. Hayes as an SPSS plugin. In the analysis, 5000 resampling options were preferred using the bootstrap technique. For significance of the effect in this method, the values in the 95% lower and upper confidence intervals should not include zero (0) (Hayes, 2013). Table 3 presents the results of the analyses performed to test the hypotheses.

Table 3. The Moderator Role of Leader-Member Exchange on the Effect of Loneliness at Work on Organizational Citizenship Behavior

Effect Path	β	se	%95 Confidence Interval	
			LLCI	ULCI
Loneliness at Work (X)	-0,285	0,251	-0,578	-0,336
Leader Member Exchange (W)	0,401	0,215	0,317	0,625
Interactive Term (X.W)	-0,144	0,060	-0,263	-0,026

Model Summary: $R=0,4169$; $R^2=0,1738$; $f=20,9026$; $p<0,05$

The results presented in Table 3 demonstrate a significant and negative relationship between loneliness in business settings and organizational citizenship behavior ($\beta = -0.285$, $p < 0.05$ CI=[-0.578;-0.336]). Moreover, leader-member exchange (H4) was found to moderate this relationship ($\beta = -0.144$, $p < 0.05$ CI=[-0.263; -0.026]). These findings supported all hypotheses (H1, H2, H3, and H4) in the research. To further analyze the results and visualize the moderator effect of leader-member exchange, a simple slope graph proposed by Aiken, West, and Reno (1991) was created and presented in Figure 2.

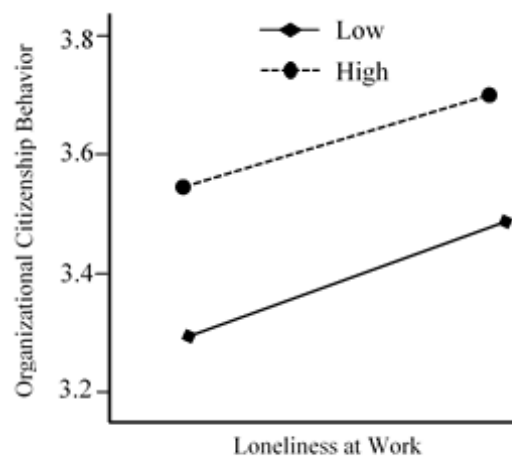


Figure 2. Conditional indirect effects of LMX

Figure 2, a simple slope graph, illustrates that the impact of loneliness in the workplace on organizational citizenship behavior is influenced by the strength of LMX. According to this, as LMX (leader-member exchange) increases, the impact of loneliness on organizational citizenship behavior at work decreases. As shown in the simple slope graph, LMX moderates the effect of loneliness at work on organizational citizenship behavior.

5. Conclusion and Discussion

Employees who feel lonely at work tend to exhibit low levels of organizational citizenship behavior (Firoz & Chaudhary, 2022; Gardner et al., 2005; Dilla, 2022; Özçelik & Barsade, 2018; Lam & Lau, 2012). On the other hand, LMX has a moderator effect on the relationship between these two variables. This research aims to illustrate the concept of loneliness at work, organizational citizenship behavior, and LMX's place in the literature. The study also examines the level of influence of these variables on each other. In this context, the hypothesis (H1) was tested by suggesting that loneliness at work has an effect on organizational citizenship behavior. The findings suggest that loneliness in work environments has a significant and negative effect on organizational citizenship behavior. This situation is similar to previous studies in the literature (Firoz & Chaudhary, 2022; Dilla, 2022; Lam and Lau, 2012), as well as to the Conservation of Resources Theory. In other words, employees who do not feel lonely exhibit strong organizational citizenship behaviors. They are willing to take on additional tasks that benefit the organization, in addition to fulfilling their responsibilities. Another focus of this study was to investigate the effect of loneliness at work on leader-member exchange (LMX) (H2). The results of testing on this subject, as well as findings from other literature (Naseer et al., 2016; Anand & Mishra, 2021), indicate that loneliness at work has a significant negative effect on LMX. In other words, employees who feel lonely at work have weak interactions with their leaders. This study also focused on examining the effect of LMX on organizational citizenship behavior (H3). After testing this focal point, it was observed that LMX has a positive and significant impact on organizational citizenship behavior. Therefore, it can be concluded that employees who have positive interactions and good relationships with their leaders exhibit high levels of organizational citizenship behavior. This finding is consistent with prior studies (Teng et al., 2020; Cha and Borchgrevink, 2018; Wang et al., 2017) and aligns with the Conservation of Resources theory.

The research focused on testing the moderator role of LMX on the effect of loneliness at work on organizational citizenship behavior (H4), with the expectation that it would provide the most support to the literature. This study makes a valuable contribution to future research in this area because the unique model presented has not been used before in either national or international literature. The analysis showed that LMX does indeed play a moderator role in the effect of loneliness at work on organizational citizenship behavior. As there have been no prior studies examining these three variables in this specific context, comparison with existing literature was not possible. However, the research hypotheses (H1, H2, H3, and H4) were all accepted according to the analysis.

This model, which has not been previously discussed in the literature, focuses on the recommendations of studies on loneliness at work. These studies (Hyland et al., 2018; Lam & Lau, 2012) emphasize the need to examine the relationship between loneliness at work and different organizational behavior topics. Therefore, this research aims to fill the gaps in the literature.

The negative effect of loneliness at work on organizational citizenship behavior was revealed through quantitative analysis conducted as part of this research. This finding contains important implications for businesses. To increase organizational commitment and encourage employees to work in the organization's best interest, it is crucial for businesses to prevent employees from feeling lonely at work. Establishing high-quality relationships in the workplace is therefore essential for the effectiveness of organizational functions, regardless of any expectation of reward or other benefit. The mutual interaction between leaders and their followers plays an important role in positively affecting the relationship between these two variables. This equation, which adds an original dimension to the study, increases in importance in the literature and is expected to guide businesses in their approach to employees. Therefore, it is clear that businesses need to address the issue of loneliness in the workplace.

An important recommendation of this research is for future researchers focusing on loneliness at work to enrich the literature by exploring its relationship with different organizational behavior issues. Including different

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sample groups to support this study, which focuses on academicians, is also considered a way to enrich the literature.

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Etik, Beyan ve Açıklamalar

1. Etik Kurul izni ile ilgili;

Bu çalışmanın yazarları, World Peace University Etik Kurulu'nun 10.05.2023 tarih ve WPU-ETK-2023-12 sayılı karar ile etik kurul izin belgesi almış olduklarını beyan etmektedir.

2. Bu çalışmanın yazarları, araştırma ve yayın etiği ilkelerine uyduklarını kabul etmektedir.

3. Bu çalışmanın yazarları kullanmış oldukları resim, şekil, fotoğraf ve benzeri belgelerin kullanımında tüm sorumlulukları kabul etmektedir.

4. Bu çalışmanın benzerlik raporu bulunmaktadır.
