

Article

The Effects of Transformational Leadership on Organizational Performance: Testing the Mediating Effects of Knowledge Management

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Abstract: Transformational leadership is a sustainable and exemplary form of leadership that liberates subordinates' ideas, enables subordinates to view problems from a different perspective, helps adaptation to changing environments, and increases Human Resources Management effectiveness in public and service institutions. The effects of transformational leadership on organizational performance by means of knowledge management have been examined in this study on the northern Cyprus Security Forces. In addition, the study aims to analyze the relationships between transformational leadership, knowledge management, organizational performance, job satisfaction, organizational learning, and knowledge creation processes. The questionnaire was conducted in three different periods using a time-lag method, and data were collected from 1229 employees for this study. The collected data were analyzed using structural equation modeling (Lisrel 8.54). The findings of the research include 17 hypotheses that were supported, and 1 hypothesis that was not. In addition, it was determined that organizational learning, knowledge management, and job satisfaction mediate the effect of transformational leadership on organizational performance.

Keywords: transformational leadership (TL); knowledge management (KM); organizational performance (OP); job satisfaction (JS); organizational learning (OL); knowledge creation process (KCP)



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1. Introduction

It is widely recognized that sustainable organizational development and performance are significant issues in both private and public organizations. Developments in knowledge management have also increased organizational learning and enabled organizations to develop [1]. Transformational leadership places emphasis on subordinates' values, considerations, and emotions, as it encourages organizational creativity. Employees with the most value are the resources of organizations and leaders that can boost sustainable productivity by taking responsibility and ensuring professional development [2–4]. Transformational leaders have charisma, increase subordinates' intellectual stimulation, and are inspirational [2,3].

Therefore, the main objective of this research was to determine the effects of perceived transformational leadership behaviors in military public institutions on sustainable organizational performance. Additionally, the research aimed to explain the relationships between transformational leadership, knowledge creation processes, organizational learning, job satisfaction, knowledge management, and organizational performance. The military institution was specifically selected for this research. One reason for this is that leadership is an important issue for sustainable and efficient personnel management in military institutions. In addition, the breadth of the fields of operation in military institutions and the differences in the tasks performed in the operation areas require the production and use of a large amount of knowledge. This generated knowledge should be properly managed and

used to ensure sustainable organizational success. The second aim was to determine how transformational leadership affects knowledge management through knowledge creation processes. Thirdly, there is a research gap in investigating the effects of knowledge creation processes on public military institutions. In this study, a research model was developed by conducting a systematic scientific literature review, and this research model was verified using a structural equation model.

Organizations with an extensive knowledge base apply efficient management approaches to ensure sustainable performance in an efficient dynamic business environment [5]. The concept of organizational sustainability is the most important feature required for the success of private or public organizations. Organizational success is determined within a framework of sustainability by covering the economic, social, and environmental perspectives of the organization beyond its outputs, production, and profitability [6]. The conceptualization of intellectual capital is important for public institutions. Knowledge is an intangible asset that enables an organization to be sustainable, survive, and gain a competitive advantage [7].

Effective leadership styles can be significantly influential in increasing knowledge [8], and leadership styles can enhance the development of the decision-making process and organizational strategies [9]. Consequently, knowledge management improves the quality of decision-making, and improves sustainable organizational performance [10]. Leaders should be experts who can inspire, motivate, and guide their subordinates, while also being able to measure their performance under the same conditions, especially through a knowledge management strategy. Additionally, to be experts in knowledge management, subordinates should be given sufficient authority and responsibility. Leadership characteristics are a significant issue in the knowledge management process [11]. Transformational leadership inspires followers and increases sustainable organizational performance beyond expectations [12]. Transformational leadership seems to be associated with many variables within an organization. Research has indicated that transformational leadership influences organizational performance, and is also associated with organizational learning, knowledge management, and organizational innovation [13].

This study attempts to fill the identified scientific and practical gaps in the literature. First of all, there is a gap in research on leadership, knowledge management, and organizational performance in military institutions. Secondly, the issue of leadership in military institutions is discussed as an important issue. Thirdly, there is an urgent need for knowledge in military institutions due to the differentiation of task types in operational areas. Consequently, the current study was conducted in a military institution to test the effects of transformational leadership on the knowledge creation process, organizational learning, knowledge management, job satisfaction, and organizational performance. Additionally, the study tests the effects of knowledge creation process on organizational learning, knowledge management, and organizational performance. Furthermore, current study investigates the effects of organizational learning on organizational performance and knowledge management. Moreover, the study tests the effects of knowledge management on job satisfaction and organizational performance. In addition, the current study tests the effect of job satisfaction on organizational performance. Concurrently, the study examines the mediating effect of organizational learning between transformational leadership and knowledge management, and between transformational leadership and organizational performance. Additionally, the study investigates the mediating effect of knowledge management between transformational leadership and organizational performance, and organizational learning and job satisfaction. Finally, the current study tests the mediating effect of job satisfaction between transformational leadership and organizational performance.

2. Theoretical Background and Literature Review

2.1. Leader—Member Exchange (LMX) Theory

The LMX theory was first described as “Vertical Dyad Linkage” (VDL) [14]. Graen and Uhl-Bien (1995) argued that the LMX theory consists of four stages, wherein each stage is related to and builds upon the previous stages [15]. Leader–member exchange (LMX) theorists argue that leaders in the organization should give more responsibility to their followers, delegate powers, support the sharing of work-related knowledge, and allow participation in decision-making processes [16]. LMX theory is a psychological process variable and plays an intermediary role between transformational leadership and knowledge management [17]. Research has suggested that transformational leadership traits are predictors of leader–member exchange (LMX) theory [18–21]. LMX theory identifies the specific roles, interpersonal exchanges, and related functions of organizational employees. From the perspective of transformational leadership, leaders ensure organizational success by transferring the vision, mission, and goals of the organization to their followers [22]. Consequently, LMX theory suggests that leaders establish mutual norms and social exchanges with their followers [23].

2.2. Transformational Leadership

Leadership approaches should meet the needs and expectations of seasonal and full-time employees. It should be noted that there are differences in the contracts, rules, regulations, and policies applied between the work of full-time and seasonal employees [24]. Bass and Avolio (1994) stated that transformational leadership is an individual-level theory bounded by individuals’ perceptions. Additionally, transformational leadership consists of four dimensions related to the behavioral component, which are idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration [25]. Additionally, research indicates that the “effect of spiritual leadership on the three dimensions of customer-oriented boundary-spanning behaviors is fully mediated by spiritual survival and spiritual well-being”, ([26], p. 637). A transformational leader has charisma, inspires followers, increases intellectual stimulation, and promotes individualized consideration [2,3]. The transformational leader should establish a system that is focused on knowledge, and develop new transformational methods by acquiring data that are explicit and implicit within the organization [27,28]. Transformational leadership is a management style that focuses on ideas and encourages subordinates’ risk-taking behaviors, thus developing a network among individuals [28]. Transformational leaders contribute to subordinates’ motivations, provide for their organizational requirements, establish a knowledge substructure, and develop a knowledge management system, in order to ensure knowledge flow by stimulating individualized opinion and intellectual interest [29]. Additionally, a transformational leader influences subordinates by setting both organizational and individual goals [30]. Leaders demonstrate and utilize leadership models, known as either transactional or transformational leadership, that each possesses unique attributes in the context of leading [25]. Transformational leadership positively influences human development and human interaction, and increases teams’ motivation and organizational efficiency [12,31,32].

2.3. Knowledge Management System

Knowledge management is considered a versatile, multidimensional, and controversial concept [27]. In today’s world, increasing globalization affects the production of knowledge, and the examination of changes in the competitive environment demonstrates that knowledge management is a necessity [33]. Knowledge management has the effect of making organizations faster, more innovative, efficient, and effective. In addition, the concept of management is a term that describes the interaction of knowledge in the organization with environmental effects [34]. The ability of an organization to create and use knowledge is considered to be the most important source of sustainable competitive advantage within knowledge-centered institutions [35]. Knowledge is becom-

ing the most significant resource in the world's economy, and it provides a competitive advantage. Knowledge management provides a solution to the challenging paradox of organizations [36]. In today's knowledge-based society, some processes are important to knowledge management, as well as to increasing the production of knowledge, ensuring the flow of knowledge, and interpreting data to accomplish organizational goals [27]. Therefore, knowledge management enables the flow of knowledge that realizes essential competencies within the organization, in order to create, store, share, and evaluate knowledge [37]. The knowledge management infrastructure consists of the organization's structure, technology, and culture. Knowledge management is a process that consists of four sub-dimensions: acquisition, conversion, application, and protection [38]. Research has indicated that the knowledge management process comprises the capture, transferal, and use of knowledge [39]. The knowledge management process consists of acquiring (collecting knowledge), collaborating (sharing knowledge), integrating (combine knowledge), and experimenting (measuring knowledge) [40].

2.4. Organizational Performance

Organizational performance is seen as the ultimate dependent variable for researchers in many fields, and is used to measure the fundamental productivity of organizations [41]. The measurement methods that are used to measure organizational performance in different studies differ significantly [42]. Leadership characteristics influence the behaviors of subordinates towards accomplishing organizational goals. Therefore, leadership styles can improve organizational performance [43]. Different leadership approaches are required to increase organizational efficiency and effectiveness under changing global conditions. Previous leadership models are now inadequate in today's world, leading to failures when managing complex organizations [44]. Furnham (2002) argued that the appropriate measurement method depends on the quality of leadership [45]. In the study conducted by Lim and Ployhart (2004) on Singapore's army, it was revealed that transformational leadership positively affected team performance [46].

2.5. Organizational Learning

Organizational learning is defined as a process of the creation and acquisition, dissemination, application, and sharing of knowledge within an organization [47]. According to Nevis et al. (1995), organizational learning is influenced by participatory leadership, systemic thinking, and vision sharing [48]. Additionally, according to research by Garcia-Morales et al. (2006), sharing a vision and team learning are the main issues that affect organizational learning [47]. Organizational learning is a type of leadership in which training is designed and implemented for followers. In other words, organizational learning is the responsibility of the leader. Leaders should create a new environment in which followers can improve their performance, create a vision, and engage in team learning [49].

Organizational learning refers to an organization's ability to maintain or improve performance, and includes knowledge acquisition, sharing, and utilization [50]. The process of organizational learning incorporates the knowledge created by individuals to increase the organizational knowledge repository. Organizational learning is a dynamic process that relies on interaction in a community, in which individuals convert tacit knowledge into explicit knowledge in the organization [27]. The development of the organization's abilities and knowledge repository increases the organization's capability and facilitates organizational learning [49,51].

2.6. Knowledge Creation Process

Knowledge management is considered an input–output cycle. The process of knowledge management is a phenomenon in which knowledge is used through appropriate methods for accomplishing organizational goals and transforming knowledge into intellectual capital [52]. Lee and Choi (2003) investigated the knowledge creation process adapted from the SECI model, which consists of socialization, externalization, combination,

and internalization. The SECI model is a theory that explains the knowledge creation process in four dimensions, and was developed by Nonaka and Takeuchi (1995) [53]. The process of socialization describes how tacit knowledge is transformed into recent tacit knowledge through sharing experiences. The process of externalization converts tacit knowledge into recent explicit knowledge. When tacit knowledge is converted into explicit knowledge, it becomes essential to recent knowledge. The combination process indicates that that explicit knowledge is transformed into more complex explicit knowledge. The process of internalization is that in which explicit knowledge is transformed into tacit knowledge, and individuals access knowledge that is shared in group discussion, meetings, etc., which is then converted into tacit knowledge [54].

2.7. Job Satisfaction

Job satisfaction is explained as “a pleasurable or positive emotional state, resulting from the appraisal of one’s job or job experiences”, ([55], p. 1304). Job satisfaction demonstrates the effective working and emotional satisfaction levels of individuals in their job. Additionally, job satisfaction is recognized as a multidimensional global concept [56]. Job satisfaction and its implications affect job-related variables. Job satisfaction increases the level of motivation, organizational citizenship behavior, job involvement, job performance, etc. On the other hand, it decreases the level of absenteeism, turnover, etc. [56–58]. It is observed that more effective organizations meet the needs of their employees, and the more they value their employees, the more work performance increases [59]. Accordingly, the fact that many types of research have been conducted on job performance has revealed that it is important to evaluate both individual job performance and job satisfaction [60].

3. Hypotheses Development and Research Model

Studies have revealed that leadership influences organizational learning by creating psychological safety and openness [51,61,62]. Transformational leadership is a style adopted by leaders to motivate their subordinates to take into account all stakeholders of the organization. The transformational leader knows how to effectively manage knowledge, which is a critical factor in increasing efficiency in organizational learning. He/she is a leader who encourages individuals to create, use, renew, evaluate, distribute and apply information in the knowledge management process [63]. According to Templeton et al. (2006), organizational learning is defined as processes that positively induce change within the organization, both intentionally and/or unintentionally. Additionally, they stated that these processes include information acquisition, information interpretation, and information distribution [64]. According to Amitay, there is a relation between transformational leadership and organizational learning [65]. Hence, the current study proposes the following hypothesis:

Hypothesis 1. *Transformational leadership delineates a positive impact on organizational learning.*

Organizational learning is important in the processes of producing, distributing, and developing knowledge [66]. It has been observed that the knowledge generation process is divided into two major processes. The first stage is the production of knowledge within the organization, and is supported by the organizational learning process. In the second stage, organizational learning assists in the integration of knowledge into the organization, and the sharing, usage, and distribution of knowledge [67]. The creation, distribution, and usage of knowledge are important factors, while organizational learning influences knowledge management within many organizations [68]. Organizational learning is an important resource, providing a competitive advantage within the knowledge economy created by the knowledge society. Knowledge management is an important precursor to organizational learning in terms of enhancing sustainable organizational performance. Knowledge management and organizational learning are factors that enable organizations to be innovative and profitable in the long term [69,70]. According to Ud-din’s (2017) study, there is an association among transformational leadership, knowledge

management, and organizational learning [71]. Hence, the current study proposes the following hypothesis:

Hypothesis 2. *Organizational learning delineates a positive impact on knowledge management.*

Transformational leadership encourages and increases organizational learning through self-confidence, inspirational motivation, and intellectual stimulation in the organization [72]. According to the literature, there are positive relationships among transformational leadership, knowledge management, and organizational learning. Consequently, it has been determined that “transformational leadership has a positive effect on follower performance through knowledge management and organizational learning; knowledge management does not only directly and positively impact follower performance but also has a positive but indirect effect through organizational learning and organizational learning has a direct and positive effect on follower performance”, ([73], p. 12).

According to previous research, there is a relation between transformational leadership and knowledge management through organizational learning. Additionally, there is an association between transformational leadership and organizational performance [13,74], and transformational leadership behaviors affect organizational performance through organizational learning [63]. Hence, the current study proposes the following hypothesis:

Hypothesis 3. *Organizational learning mediates the effects of transformational leadership on knowledge management.*

According to Jennex’s (2005) research, it has been determined that retaining, sharing, and re-using knowledge creates a successful business environment, and it was also demonstrated that there is an association between transformational leadership and knowledge management [75]. According to research, there is a relation between transformational leadership and knowledge management, and there is also a relation between transformational leadership and its processes, which are knowledge creation, transferal, utilization, and retention [76–78]. According to Le and Lei (2019), transformational leadership is significantly correlated with knowledge sharing [79]. According to Nouri et al.’s (2016) investigations, transformational leadership behaviors have an effect on knowledge management [80]. Additionally, the significance of transformational leadership skills is that they enable knowledge resources to be managed, used, distributed and developed more efficiently and effectively. Supermane’s (2019) research indicated that knowledge management plays a significant role as a mediator between transformational leadership, and teaching and learning innovation [81]. According to Hayat et al.’s (2015) research, transformational leadership has the strongest effect on knowledge management and its processes when compared with transactional and laissez-faire leadership styles [82]. Hence, the current study proposes the following hypothesis:

Hypothesis 4. *Transformational leadership delineates a positive impact on knowledge management.*

The effective and efficient use of knowledge management in organizations increases organizational performance. Accordingly, knowledge management is considered a driver of organizational performance and innovation [83]. When knowledge management is used correctly and appropriately in organizations, it increases the organizational performance [84]. According to research, there is an association between knowledge sharing and organizational performance [85]. Hence, the current study proposes the following hypothesis:

Hypothesis 5. *Knowledge management delineates a positive impact on organizational performance.*

According to research findings, transformational leadership has a significant impact on the knowledge management process and organizational performance. Further, the knowledge management process partially mediates the relation between transformational leadership and organizational performance [86]. According to Obeidat and Zyod’s study, there is an effect of transformational leadership on performance that is mediated by

knowledge management [87]. This study indicated that quality management and transformational leadership improve knowledge management. Additionally, transformational leadership acts as a mediator within knowledge management, and quality management partially mediates the effects of knowledge management on organizational performance [88]. Hence, the current study proposes the following hypothesis:

Hypothesis 6. *Knowledge management mediates the effects of transformational leadership on organizational performance.*

According to Berson et al. (2002), the leader plays a significant role in simplifying organizational learning, and they explained the importance of the leader's characteristics and actions in motivating organizational learning. Consequently, their investigation demonstrated that organizational learning plays a mediating role, and positively influences organizational performance [89]. According to some researchers, there is an association between transformational leadership and organizational learning. Additionally, there is a positive relation between organizational learning and organizational performance. Furthermore, organizational learning has a mediating effect on the relation between transformational leadership and organizational performance [4,90–93]. Hence, the current study proposes the following hypothesis:

Hypothesis 7. *Organizational learning mediates the effects of transformational leadership on organizational performance.*

According to Orabi's (2016) research, there is an association between transformational leadership and organizational performance. Additionally, "research indicates that this type of leadership can collectively impact employee behavior and commitment leading to improvements in the work climate and knowledge sharing", (p. 672). In addition, the research indicated that there is a relation between transformational leadership and organizational performance. Furthermore, there is a relation among the sub-dimensions of transformational leadership, which include idealized influence, inspirational motivation, intellectual stimulation, and individual consideration and performance [94]. According to the investigation, transformational leaders improve followers' performance [95,96]. Hence, the current study proposes the following hypothesis:

Hypothesis 8. *Transformational leadership delineates a positive impact on organizational performance.*

Many studies have indicated that transformational leadership has a positive effect on the knowledge creation process. However, research has revealed that transformational leadership encourages employees, subordinates, and followers to create, use, and share knowledge [4,8,97,98]. Additionally, according to investigations, transformational leadership affects the knowledge creation process [99,100]. Hence, the current study proposes the following hypothesis:

Hypothesis 9. *Transformational leadership delineates a positive impact on the knowledge creation process.*

Knowledge creation is a dynamic process wherein employees capture and share implicit and explicit knowledge within an organization. However, knowledge creation processes have an important effect on the knowledge management process and characteristics [27,101]. According to B. Choi and H. Lee's (2002) research, the knowledge management and knowledge creation processes are significantly different. Additionally, research indicates that the knowledge management and knowledge creation processes in different organizations are significantly different [102]. Knowledge creation and transformation processes should provide the knowledge required in military operation zones to ensure organizational success [103]. Hence, the current study proposes the following hypothesis:

Hypothesis 10. *The knowledge creation process delineates a positive impact on knowledge management.*

The knowledge creation process affects organizational capacity and performance [104–107]. Knowledge creation processes increase organizational performance by providing a competitive advantage [27]. Knowledge creation processes are an important factor in the operational use of knowledge within the organization. Knowledge creation processes create the knowledge management infrastructure with the knowledge created by the knowledge creation processes [53]. The knowledge creation process affects firm performance [108]. Hence, the current study proposes the following hypothesis:

Hypothesis 11. *The knowledge creation process delineates a positive impact on organizational performance.*

The ability to generate new knowledge constitutes the basic infrastructure of organizational learning [109]. Organizational learning describes the process of individual and collective learning in the organization. Hence, the acquisition of external knowledge affects the organizational learning process [110]. “Socialization, Externalization, Combination, and Internalization (SECI) affect organizational learning and the results of the organization”, ([111], p. 309). The knowledge creation process affects organizational learning [112]. Hence, the current study proposes the following hypothesis:

Hypothesis 12. *The knowledge creation process delineates a positive impact on organizational learning.*

In order to provide sustainable knowledge management in the organization, it is necessary for managers to motivate employees to produce knowledge as individuals. Motivation enables the development of knowledge production and sharing processes, while also increasing job satisfaction in the organization [113]. According to certain research findings, technological knowledge management infrastructure, structural knowledge management infrastructure, and cultural knowledge management infrastructure have an impact on job satisfaction [114]. Research has indicated that knowledge management has effects on job satisfaction, and effective knowledge management increases job satisfaction [115–120]. Hence, the current study proposes the following hypothesis:

Hypothesis 13. *Knowledge management delineates a positive impact on job satisfaction.*

According to research, organizational culture, organizational learning, and knowledge management have mediating effects on job satisfaction. In the other words, knowledge management positively mediates the relationship between organizational learning and job satisfaction [121]. Organizational learning has an effect on job satisfaction, while knowledge management acts as a mediator [122]. According to Javed (2012), employee satisfaction will increase when a sustainable learning process is established in organizations. Additionally, “the relationship between employees’ knowledge practices, adaptability, learning behavior and employees job satisfaction is still need to be work out”. Organizational learning has effects on job satisfaction through knowledge management ([123], p. 6). Hence, the current study proposes the following hypothesis:

Hypothesis 14. *Knowledge management mediates the effects of organizational learning on job satisfaction.*

Leadership, which is the main element of sustainable human resource management, increases organizational trust, organizational commitment, and job satisfaction [124]. Organizations need to ensure that employees work more productively and efficiently. Therefore, one of the ways that managers can be effective in increasing employee satisfaction is to use the right leadership style [125]. Transformational leadership provides a higher level of job satisfaction by establishing an enhanced interpersonal relationship between the manager and the subordinate [126]. According to a review of the literature, transformational leadership affects job satisfaction [124–128]. Hence, the current study proposes the following hypothesis:

Hypothesis 15. *Transformational leadership delineates a positive impact on job satisfaction.*

According to the research, one “commonly held opinion is that a satisfied worker is a productive worker. A satisfied work force will create a pleasant atmosphere within the organization to perform well”. Therefore, job satisfaction has a significant impact on organizational performance [129]. Job satisfaction has a positive impact on employee performance [130–132]. In addition, there is a relation between job satisfaction and performance, and there are also moderators (autonomy, norm, moral obligation, cognitive accessibility, etc.) and mediators (success, task, goal, etc.) between the variables [133]. Job satisfaction has a positive effect on performance [134]. According to an investigation, job satisfaction has a positive impact on organizational performance [135]. Hence, the current study proposes the following hypothesis:

Hypothesis 16. *Job satisfaction delineates a positive impact on organizational performance.*

Transformational leadership has an effect on organizational performance, while job satisfaction plays a mediating role [136]. According to one study, job satisfaction does not mediate the effect of transactional leadership on performance. On the other hand, another study states that it does [137]. Additionally, Tentema et al. (2019) also argued that job satisfaction mediates the relationship between transformational leadership and performance [138]. Hence, the current study proposes the following hypothesis:

Hypothesis 17. *Job satisfaction mediates the effects of transformational leadership on organizational performance.*

Organizational learning is one of the “significant factors in order to achieve sustainable organizational performance in a rapidly changing business environment”, ([5], p. 1). According to research, organizational learning has a positive impact on innovation, competitiveness, and organizational performance [139]. DiBella et al. (1996) described “organizational learning as the capacity (or processes) within an organization to maintain or improve performance based on experience”, ([50], p. 363). In addition, studies in the literature indicate that organizational learning affects organizational performance [5,13,47,50,59,70,90]. Hence, the current study proposes the following hypothesis:

Hypothesis 18. *Organizational learning delineates a positive impact on organizational performance.*

The research model is shown in Figure 1.

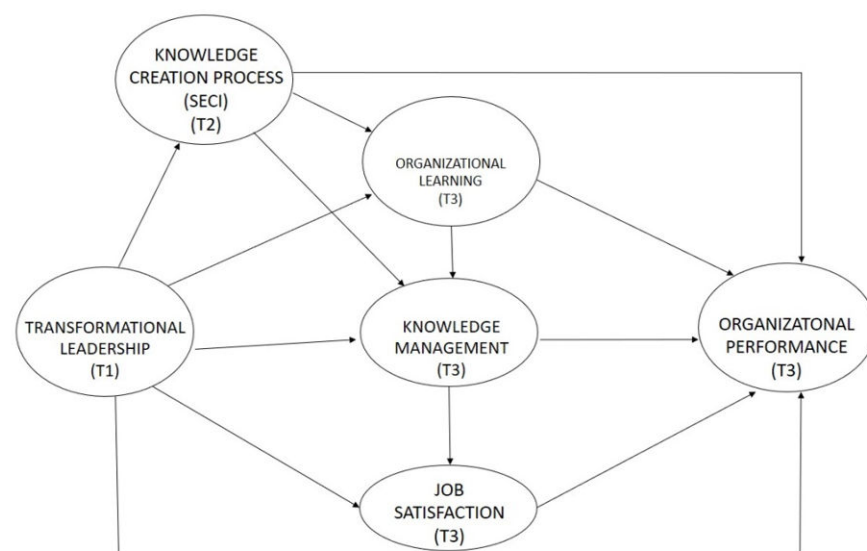


Figure 1. Research model.

4. Methodology

4.1. Setting and Sample

Leadership traits occupy a special position in public military institutions. In public military institutions, the characteristics of the leader have a direct impact on the success of field operations. This research was carried out specifically to assess the effects of transformational leadership characteristics in public military institutions. The current study utilized a judgmental sampling procedure to collect data. Questionnaires were distributed to all employees via the intranet. The time-lag method was used in the study and the questionnaire was distributed to the participants in 3 waves. The time separation between wave 1, wave 2, and wave 3 was 21 days. In the first wave, the transformational leadership items and demographic questions were distributed to all employees and data were collected from 1773 respondents. In the second wave, the knowledge creation processes items were distributed to the 1773 respondents who responded in wave 1, and data were collected from 1480 out of 1773 respondents. In the third wave, knowledge management, job satisfaction, organizational learning, and organizational performance items were distributed to the 1480 respondents who responded to the previous waves, and data were collected from 1229 out of 1470 respondents. Finally, a total of 1229 matched responses were subjected to data analyses. The demographic breakdown of the sample is shown in Table 1 below. As shown in Table 1, the majority (43.8%) of the respondents were between 30 and 39 years old; 51.7% had a secondary or high school diploma, and 27.8% had tenures of between 15 and 19 years.

Table 1. Demographic breakdown of the sample (n 1229).

Age (year)	Frequency	Percent
18–29	214	17.4
30–39	538	43.8
40–49	401	32.6
50–59	73	5.9
60+	3	2
Total	1229	100.0
Education		
Secondary or high school	636	51.7
University first degree	185	15.1
Graduate degree	256	20.8
Master degree	145	11.8
Doctoral (Ph.D) graduate	7	.6
Total	1229	100.0
Tenure		
0–9	293	23.8
10–14	317	25.8
15–19	342	27.8
20–24	195	15.9
25+	82	6.7
Total	1229	100.0
Marker variable		
Urban	332	27
Rural	897	73

4.2. Instrumentation

The aim of this study was to investigate the effects of transformational leadership on organizational performance through knowledge management, and the relationships among transformational leadership, knowledge, organizational learning, job satisfaction, knowledge creation processes, and organizational performance.

In the demographic part of the questionnaire, the participants were asked about their years of service in the organization, their education level, and their age.

Transformational leadership was measured by a multi-factor transformational leadership questionnaire consisting of 21 items in 4 dimensions—idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration—as developed by Bass and Avolio (2000) [3]. The transformational leadership questionnaire uses a 5-point scale (1—strongly disagree, 5—strongly agree). The questionnaire was subsequently used by Al-Husseini et al. (2019) and has a Cronbach’s alpha value of 0.89 [76].

Knowledge management was measured by the knowledge management capability scale, which consists of the 4 dimensions of knowledge acquisition, knowledge conversion, knowledge dissemination, and knowledge application. The questionnaire is based on a 7-point scale (1—strongly disagree, 7—strongly agree) and consists of 12 theory-based items adapted from Gold et al. (2001), Ju et al. (2006), and Lee and Sukoco (2007) [38,140,141]. Subsequently, the questionnaire was used by Thanyasunthornsakun (2012), and has a Cronbach’s alpha value of 0.852 [142].

Organizational learning was measured by 4 items developed by García-Morales et al. (2012). The questionnaire uses a 5-point scale (1—strongly disagree, 5—strongly agree). Its Cronbach’s alpha is 0.71 [143].

Job satisfaction was measured via 6 items developed by Brayfield and Roth (1951) [144]. It was subsequently used by Curry et al. (1986), and its Cronbach’s alpha was calculated as 0.865. The questionnaire uses a 5-point scale (1—strongly disagree, 5—strongly agree) [145].

The knowledge creation process was measured using the organization knowledge creation process questionnaire, which includes the 4 dimensions of socialization, externalization, combination and internalization, and 25 theory-based items. The questionnaire was developed by Huang and Wang (2003), and has a Cronbach’s alpha value of 0.807 [146]. The questionnaire uses a 5-point scale (1—strongly disagree, 5—strongly agree). It was subsequently used by Naicker et al. (2014) and Ruvania et al. (2015) [147,148].

Organizational performance was measured by 6 items developed by Brewer and Selden (2000), which have a Cronbach’s alpha value of 0.7. The questionnaire uses a 5-point scale (1—strongly disagree, 5—strongly agree) [149].

5. Results

Assessment of the measurement model was carried out, according to the criteria of Henseler [150], by analyzing the Cronbach’s alpha (α), convergent validity, and discriminant validity values. As shown in Table 2, the values of the Cronbach’s alpha (α) and the composite reliability were greater than the criteria threshold of 0.70. Moreover, the average variance extracted (AVE) for all reflective constructs was below the cutoff value of 0.50. These results demonstrate good reliability and convergent validity [151].

The scale items, reliabilities, CR, AVE, and confirmatory factor analysis results are shown in Table 2.

Table 3 shows all descriptive statistics and correlations between variables. As can be seen in the table, transformational leadership has a relation with knowledge management, organizational learning, job satisfaction, organizational performance, and knowledge creation processes. Transformational leadership is found to have the highest-level correlation coefficient with organizational performance. In addition, job satisfaction and organizational performance are also highly correlated.

Table 2. Scale items, reliabilities, CR, AVE, and confirmatory factor analysis results.

Scale Item	Standardized Loadings	t-Values	Cronbach's Alpha	Composite Reliability	AVE
1. Transformational Leadership			0.974	0.976	0.672
Acts in ways that build my respect.	0.81	34.72			
Instils pride in being associated with him/her.	0.81	34.22			
Talks about his/her important values and beliefs.	0.68	27.12			
Goes beyond self-interest for the good of the group.	0.74	30.15			
Considers the moral and ethical consequences of decisions.	0.84	36.31			
Emphasizes the importance of having a collective sense of mission.	0.85	36.94			
Displays a sense of power and confidence.	0.88	38.99			
Talks optimistically about the future.	0.84	36.62			
Talks enthusiastically about what needs to be accomplished.	0.83	35.84			
Articulates a compelling vision of the future.	0.47	17.34			
Expresses confidence that goals will be achieved.	0.86	37.56			
Develops a team attitude and spirit among members of staff.	0.89	39.73			
Re-examine critical assumptions to question whether they are appropriate.	0.84	36.57			
Gets me to look at problems from many different angles.	0.85	36.82			
Suggests new ways of looking at how to complete assignments.	0.86	37.61			
Seeks different perspectives when solving problems.	0.85	37.11			
Encourages me to rethink ideas that have never been questioned before.	0.76	31.18			
Spends time teaching and coaching.	0.88	39.20			
Treats me as an individual rather than just as a member of a group.	0.69	27.56			
Considers me as having different needs, abilities and aspirations to others.	0.76	31.55			
Helps me to develop my strength.	0.84	36.72			
2. Knowledge Management			0.951	0.952	0.624
Your organization has directories or e-mail to support people to find an internal expert on a specific issue.	0.78	-			
In your organization, people can easily access and call for the specialized knowledge held by others.	0.66	24.59			

Table 2. Cont.

Scale Item	Standardized Loadings	t-Values	Cronbach's Alpha	Composite Reliability	AVE
In your organization, people easily access knowledge generated/modified during a particular task from another functional area via formal supporting mechanisms (e.g., intranet or knowledge-base).	0.75	28.81			
In your organization, people within and across units have meetings (both formal and informal) to share and exchange their knowledge/experiences.	0.76	29.06			
Your organization supports meetings, sharing, exchanging and interpreting knowledge/experiences with each other to generate the best practices that people can apply to their tasks.	0.85	33.51			
Your organization has the systems (such as mentoring, coaching, and on-the- job-training) to support people in sharing, exchanging, and interpreting knowledge/experiences with supervisors/experts within and across units.	0.85	33.32			
Your organization creates a work environment using job rotation, training, or special assignments to make individuals aware of other people or department duties.	0.82	31.89			
Your organization has functional units or individuals responsible for collecting, assembling, and distributing up-to-date information and knowledge to people throughout the organization.	0.83	32.27			
Your organization uses the storytelling or case study technique to share and distribute organizational success and failure to its people.	0.80	31.09			
In your organization, knowledge/experiences that are shared, exchanged, and interpreted in meetings are documented for others to access and utilize later.	0.80	30.80			
Your organization has various formal mechanisms for supporting people within and across units to share, exchange, and interpret knowledge/experiences (e.g., knowledge base, web technology, blog, e-learning and e-communities).	0.80	30.88			
In your organization, people can clearly see how different pieces of knowledge combine and fit together.	0.77	29.34			
3. Organizational Learning			0.905	0.908	0.712
The organization has acquired and used much new and relevant knowledge that provided competitive advantage over the last three years.	0.87	-			
The organization's members have acquired some critical capacities and skills that provided competitive advantage over the last three years.	0.89	43.11			
Organizational improvements have been influenced fundamentally by new knowledge entering the organization over the last three years.	0.82	36.61			
The organization was a learning organization.	0.79	34.55			
4. Job Satisfaction			0.863	0.928	0.724
I like my job better than the average worker does.	0.78	-			

Table 2. Cont.

Scale Item	Standardized Loadings	t-Values	Cronbach's Alpha	Composite Reliability	AVE
I am seldom bored with my work.	0.22	7.69			
I would not consider working for another job.	0.69	25.80			
Most days I am enthusiastic about my job.	0.88	35.51			
I feel fairly well satisfied with my job.	0.94	39.10			
I find real enjoyment in my work.	0.93	38.50			
5. SECI (Knowledge Creation Process)			0.977	0.977	0.634
After hearing a new idea or concept, I tend to compare it with my experience to help me comprehend the meaning.	0.76	-			
I understand others' thoughts better by repeating what they said and asking them "Is this what you mean?"	0.58	21.19			
I will tell others what I think to make sure my understanding is the same as theirs.	0.70	26.02			
When I have finished saying something, I will ask the other person if it is necessary to repeat to make sure he/she understands exactly what I mean.	0.68	24.89			
When communicating with others, I will give others time to think about what we just discussed.	0.81	30.56			
When others can't understand me, I am usually able to give him/her examples to help explaining.	0.82	31.03			
Most of the time, I can transcribe some of the unorganized thoughts into concrete ideas.	0.77	28.92			
I can describe professional or technical terms with conversational language to help communication in a team.	0.79	29.59			
I tend to use analogy when expressing abstract concepts.	0.78	29.29			
When I try to express abstract concepts, I tend to explain with examples.	0.82	31.20			
I will help others to clearly expressing what he/she has in mind by encouraging them to continue what they are saying.	0.84	32.25			
When others cannot express themselves clearly, I usually help them clarify their points.	0.84	32.04			
In team discussion, I will actively share my experience with others.	0.83	31.55			
In my work team, my teammates and I will share life or work experience with each other.	0.83	31.42			
During group discussion, I try to find out others' opinions, thoughts and other information.	0.85	32.70			
During discussion, I will bring out some concepts, thoughts or ideas.	0.81	30.79			
I often encourage others to express their thoughts.	0.78	29.41			
Before team discussion, I will collect necessary information and show it to my teammates.	0.84	32.17			
I like to get to know the people whom I will work with before going into a project together.	0.83	31.69			

Table 2. Cont.

Scale Item	Standardized Loadings	t-Values	Cronbach's Alpha	Composite Reliability	AVE
During the discussion, I tend to help organize ideas and make conclusion to facilitate the discussion	0.84	31.96			
When coming across problems, I tend to use my experience to help solving problems.	0.85	32.58			
After every event, I have the habit of organizing and making summary of what happened.	0.79	29.58			
During discussion, I will organize everyone's thoughts in my mind.	0.78	29.39			
I like to collect new information, and making connection of new and old knowledge to work up new concepts.	0.85	32.42			
I like to organize ambiguous concepts into structure.	0.77	28.80			
6. Organizational Performance			0.891	0.868	0.621
My organization has made good use of my knowledge and skills in looking for ways to become more efficient.	0.80	-			
In the past 2 years, the productivity of my work unit has improved.	0.79	31.18			
The work performed by my work unit provides the public a worthwhile return on their tax dollars.	0.77	29.95			
In general, people of my race/national origin group are treated with respect in my organization.	0.76	29.27			
Overall, how would you rate the quality of work performed by your current coworkers in your immediate work group.	0.67	25.22			
My organization provides fair and equitable treatment for employees and applicants in all aspects of personnel management without regard to their political affiliation, race, color religion, national origin, sex, marital status, age, or handicapping condition.	0.73	27.20			

Table 3. Means, standard deviations, and correlations.

Variables	Mean	SD	1	2	3	4	5	6
Transformational leadership (T1)	3.5726	0.78082	1					
Knowledge creation process (T2)	3.8105	0.70256	0.376 **	1				
Organizational learning (T3)	4.9463	1.29191	0.460 **	0.441 **	1			
Knowledge management (T3)	3.5533	0.73335	0.457 **	0.502 **	0.738 **	1		
Job satisfaction (T3)	3.7174	0.82721	0.414 **	0.426 **	0.688 **	0.629 **	1	
Organizational performance (T3)	3.7939	0.78116	0.501 **	0.475 **	0.758 **	0.714 **	0.797 **	1

Correlations are significant at the 0.01 level (2-tailed) **.

Means, standard deviations, and correlations are also shown in Table 3.

Data on model fit indexes were obtained regarding the structural model established in the research. According to Table 4, the fit indices obtained from the model are within acceptable limits [152–157].

Table 4. Model fit statistics.

Goodness of Fit Index	Acceptable Limit	Model Value
χ^2/df (1)	<5 moderate fit <3 well fit	12,674.70/2614 = 4.85
IFI (2)	>0.90	0.99
CFI (2)	>0.90	0.99
NFI (2)	>0.90	0.98
NNFI (2)	>0.90	0.99
RFI (2)	>0.90	0.98
S-RMR (3)	<0.10	0.044
RMSEA (3)	<0.08	0.056
AIC (4)	For the compared models, the model with the smallest value is selected.	12,996.695

The model fit statistics are shown in Table 4.

The square root of the average variance extracted (AVE) in each latent construct should be more than other correlation values among the latent variables. Each square root of AVE is represented on the diagonal in Table 5. The results provide evidence of discriminant validity [158]. None of the correlation coefficients were equal to or higher than 0.90, providing further evidence for discriminant validity [159].

Table 5. Discriminant validity: the Fornell and Larcker (1981) criterion.

Constructs	VIF	TL	KM	OL	JS	KCP	OP
TL	1.369	(0.820)					
KM	2.544	0.454 **	(0.790)				
OL	2.743	0.459 **	0.738 **	(0.844)			
JS	2.070	0.427 **	0.599 **	0.677 **	(0.851)		
KCP	1.414	0.375 **	0.502 **	0.429 **	0.429 **	(0.796)	
OP	DV	0.464 **	0.693 **	0.807 **	0.807 **	0.470 **	(0.788)

Note: (1) values in parentheses are square root of AVEs; (2) ** correlation is significant at the 0.01 level (two-tailed).

Variance inflation factor analyses were conducted to test the issue of multicollinearity (see Table 5). Multicollinearity was not a problem, since all the variance inflation factor (VIF) values were less than 5 [160,161].

Structural equation modeling reveals results pertaining to the study hypotheses (see Table 6). The *t*-value between transformational leadership and organizational learning (12.67), as well as the path coefficient (0.37), are significant. Therefore, hypothesis 1 is supported. The *t*-value between organizational learning and knowledge management (22.65), as well as the path coefficient (0.69), are significant. Therefore, hypothesis 2 is supported.

The *t*-value between transformational leadership and knowledge management (3.20), as well as the path coefficient (0.07), are significant. Therefore, hypothesis 4 is supported. The *t*-value between knowledge management and organizational performance (5.76), as well as the path coefficient (0.19), are significant. Therefore, hypothesis 5 is supported. The *t*-value between transformational leadership and organizational performance (3.77), as well as the path coefficient (0.07), are significant. Therefore, hypothesis 8 is supported. The *t*-value between transformational leadership and knowledge creation process (12.54), as well as the path coefficient (0.37), are significant. Therefore, hypothesis 9 is supported. The *t*-value between knowledge creation process and knowledge management (7.79), as well as the path coefficient (0.17), are significant. Therefore, hypothesis 10 is supported. The *t*-value between knowledge creation process and organizational performance (1.81), as well as the path coefficient (0.03), are not significant. Therefore, hypothesis 11 is not supported. The *t*-value between knowledge creation process and organizational learning (11.02), as well as the path coefficient (0.32), are significant. Therefore, hypothesis 12 is supported. The *t*-value between knowledge management and job satisfaction (17.63), as well as the path coefficient (0.56), are significant. Therefore, hypothesis 13 is supported. The *t*-value between transformational leadership and job satisfaction (6.24), as well as the path coefficient (0.17), are significant. Therefore, hypothesis 15 is supported. The *t*-value between job satisfaction and organizational performance (20.27), as well as the path coefficient (0.53), are significant. Therefore, hypothesis 16 is supported. The *t*-value between organizational learning and organizational performance (9.46), as well as the path coefficient (0.29), are significant. Therefore, hypothesis 18 is supported.

Table 6. Hypotheses tests results.

H	Independent Variable	Dependent Variable	<i>t</i> -Value	Path Coefficient	<i>p</i>	Supported/Not Supported
H1	Transformational leadership->	Organizational learning	12.67	0.37	<0.001	Supported
H2	Organizational learning->	Knowledge management	22.65	0.69	<0.001	Supported
H4	Transformational leadership->	Knowledge management	3.20	0.07	<0.001	Supported
H5	Knowledge management->	Organizational performance	5.76	0.19	<0.001	Supported
H8	Transformational leadership->	Organizational performance	3.77	0.07	<0.001	Supported
H9	Transformational leadership->	Knowledge creation process	12.54	0.37	<0.001	Supported
H10	Knowledge creation process->	Knowledge management	7.79	0.17	<0.001	Supported
H11	Knowledge creation process->	Organizational performance	1.81	0.03	<0.001	Not supported
H12	Knowledge creation process->	Organizational learning	11.02	0.32	<0.001	Supported
H13	Knowledge management->	Job satisfaction	17.63	0.56	<0.001	Supported
H15	Transformational leadership->	Job satisfaction	6.24	0.17	<0.001	Supported
H16	Job satisfaction->	Organizational performance	20.27	0.53	<0.001	Supported
H18	Organizational learning->	Organizational performance	9.46	0.29	<0.001	Supported

The structural equation model is shown in Figure 2.

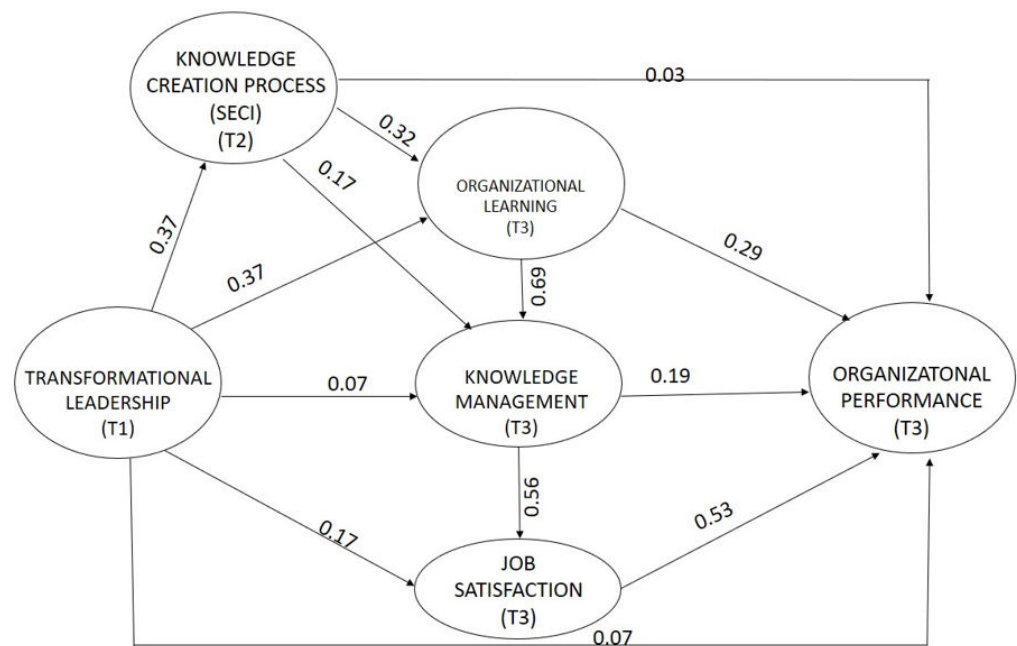


Figure 2. Results of the structural equation model.

5.1. Mediation Tests

Organizational learning has mediating effects on the relation between transformational leadership and knowledge management. Transformational leadership has been observed to positively affect knowledge management through organizational learning ($p < 0.05$). Therefore, hypothesis 3 is supported. Knowledge management has mediating effects on the relation between transformational leadership and organizational performance. Transformational leadership has been observed to positively affect organizational performance through knowledge management ($p < 0.05$). Therefore, hypothesis 6 is supported. Organizational learning has mediating effects on the relation between transformational leadership and organizational performance. Transformational leadership has been observed to positively affect organizational performance through organizational learning. Therefore, hypothesis 7 is supported. Knowledge management has mediating effects on the relation between organizational learning and job satisfaction. Organizational learning has been observed to positively affect job satisfaction through knowledge management ($p < 0.05$). Therefore, hypothesis 14 is supported. Job satisfaction has mediating effects on the relation between transformational leadership and organizational performance. Transformational leadership has been observed to positively affect organizational performance through job satisfaction (<0.05). Therefore, hypothesis 17 is supported.

The structural model results are shown in Tables 7 and 8

Table 7. Structural model results (direct, indirect, total effects, and R2).

H	Path	Direct Effect	Indirect Effect	Total Effect	R2	p
H3	TL- > OL- > KM	0.191	0.394	0.586	0.586	<0.001
H6	TL- > KM- > OP	0.282	0.359	0.641	0.548	<0.001
H7	TL- > OL- > OP	0.247	0.394	0.641	0.641	<0.001
H14	OL- > KM- > JS	0.380	0.152	0.532	0.505	<0.001
H17	TL- > JS- > OP	0.263	0.378	0.641	0.671	<0.001

Table 8. Structural model results (PV, SE, ZV, and limits).

	Predicted Value	S. Error	Z Value	p	95% Confidence Interval	
					Lower Limit	Upper Limit
TL- > OL- > KM	0.394	0.025	15.727	<0.001	0.345	0.443
TL- > KM- > OP	0.359	0.024	15.226	<0.001	0.313	0.405
TL- > OL- > OP	0.394	0.025	15.919	<0.001	0.346	0.4443
OL- > KM- > JS	0.152	0.017	8.715	<0.001	0.118	0.186
TL- > JS- > OP	0.378	0.026	14.793	<0.001	0.328	0.428

5.2. Common Method Bias Test

It is recognized that self-report data may give inflated results. In order to eliminate this issue, the current study adopted a time-lagged data collection procedure. The time-lagged approach minimizes the possibility of inflated results. In addition, a marker variable was added to the data collection procedure. The marker variable was coded as place of residence (1 = Urban, 0 = Rural). The marker variable was then equated to the test model. The test did not reveal any collinearity or significant confounding impact on the study variables. Furthermore, Harman's single factor test was employed to restrict all study items to a single measure. The results revealed that 39.7% of the variance was accounted for by a single construct. The cut-off point for Harman's single factor test is 50% variance, and our variance level is well below this [161].

6. Discussion, Implications, and Conclusions

6.1. Discussion

The most important contribution of the study is its empirical examination of the conceptual model shown in Figure 1. Its first major contribution is the determination that transformational leadership increases organizational performance through knowledge management. Another contribution, which formed the basis of the research, is that it was conducted empirically in a public institution. It could be inferred that transformational leadership is an important factor in increasing efficiency in public institutions. Public institutions generally have a large number of employees, standard salary wages, complete and accurate individual performance evaluations are not made, etc. Due to these factors, increasing organizational performance and maintaining it at a sustainable level may pose some challenges. When the research model in Figure 2 was examined, it was determined that organizational learning has a significant effect on knowledge management. At the same time, it has a significant impact on organizational learning and knowledge creation processes in transformational leadership. Furthermore, it was determined that job satisfaction has the greatest effect on organizational performance. Additionally, this study indicates how the leaders in the organization could improve their leadership skills and increase organizational performance as transformational leaders. In addition, previous studies in the literature provided the examined paths of the model. Transformational leadership positively affects organizational learning and increases the level of organizational learning [89]. In addition, transformational leadership directly and indirectly influences organizational performance through innovation. Furthermore, innovation also has an effect on organizational performance [4]. Previous research shows that organizational learning has a positive effect on knowledge management. These effects increase the efficiency of generating, developing and distributing knowledge. Moreover, knowledge integration and application, vision, and knowledge creation support organizational innovation. Knowledge creation and application initiate organizational innovation [66]. Transformational leadership behaviors have positive effects on the processes of retaining, sharing, and re-using knowledge [75]. Effective and efficient knowledge management in organizations improves organizational performance. In addition, knowledge management is vital in determining the organizational performance. The applications and methods used to share the produced information with the knowledge users are also crucial. Knowledge users

should be able to easily access the generated knowledge, and generate new knowledge by exploiting this knowledge [83]. Knowledge management mediates the relationship between transformational leadership and organizational performance. When transactional leadership and transformational leadership characteristics are compared, it can be determined that transformational leadership affects organizational performance more than transactional leadership, while transactional leadership has less effect on knowledge management [86]. Transformational leadership behaviors improve followers' performance, as well as organizational performance [95,96]. Furthermore, transformational leadership boosts organization and employee performance by initiating discussions on task-related issues, and improves organizational citizenship behavior [95]. Furthermore, transformational leadership has an effect on the knowledge creation process [99,100]. The knowledge creation process is at the heart of knowledge management [53]. Job satisfaction additionally has a significant effect on organizational performance [135]. The current research results are consistent with previous studies and extant literature.

6.2. Managerial Implications

This study aimed to provide some guidelines for managers. In addition, this research makes substantial contributions to theory and practical applications related to the domains of transformational leadership. The research empirically assesses how managers' transformational leadership behaviors affect knowledge creation processes, organizational learning, knowledge management, job satisfaction, and organizational performance. Managers could draw many inferences from our research. First, our research focused on the effects of transformational leadership behavior on organizational performance through knowledge creation processes, organizational learning, knowledge management, and job satisfaction. Transformational leadership has important effects in creating and disseminating knowledge throughout the organization. On the other hand, knowledge affects the effectiveness and efficiency of an organization, and increases organizational performance. Secondly, the study has demonstrated that transformational leadership is a significant factor in terms of the knowledge creation process, organizational learning, knowledge management, job satisfaction, and organizational performance. Managers could improve organizational performance by improving their managerial skills. Managers should use the characteristics of transformational leadership to ensure organizational achievement, and create a more productive work environment. Knowledge is the most substantial factor that increases organizational performance in the fastest way. Additionally, employees are knowledge-producers, who will produce better-quality knowledge in a better work environment. Transformational leadership contributes to the development of the corporate mission and vision by positively affecting the individual vision and mission. It should not be forgotten that not only managerial behaviors, but also employee relations and behaviors, affect organizational performance. The relations of the employees with each other should be mediated by the leaders, and a better work environment should be provided.

6.3. Conclusions, Limitations, and Future Research Directions

Leader-member exchange theory (LMX) and transformational leadership features are interconnected, as transformational leadership positively influences followers' job attitudes and behaviors [22]. In this research, the effects of transformational leadership on organizational performance through knowledge management were investigated using structural equation modeling. This study was approached from the perspective of transformational leadership, in order to increase efficiency in human resource management in public institutions. The leadership approach, which is an important factor in sustainable organizational success, emphasizes the importance of knowledge and variables associated with the emerging information age. The rapid processing of knowledge, and the production of new knowledge more efficiently than before, reveal the need to train decent leaders. Transformational leaders focus on solving complex and intractable problems by drawing on their previous experiences. The experiences of leaders are the intangible property of

organizations. Organizations aim to transfer these experiences to future generations by storing them. Therefore, this study was conducted in this field, and its results indicate that transformational leadership affects organizational learning, knowledge creation processes, and knowledge management. In other words, transformational leadership has a positive effect on knowledge and variables related to knowledge in public institutions. Namely, knowledge grows as a result of transformational leadership in the organization. Additionally, transformational leadership positively affects organizational performance and job satisfaction. Thus, transformational leadership increases the level of job satisfaction while providing individual development. Furthermore, many academic studies indicate that happy workers are also productive workers. The ultimate goal of organizations is to become more effective and efficient by increasing their performance. The current performance levels of organizations are in line with the levels of knowledge they have collected so far, and the ways they use this knowledge. If organizations want to improve their performance, they should adapt to the conditions of the information age.

Certain limitations should be considered when interpreting these results. Firstly, questionnaire data based on self-reports might be subject to social desirability bias (SDB), common method variance (CMV), and response distortion resulting from ego defensive tendencies [162]. The results may be different when focusing on different cultures, and organizational structures need to be taken into account by researchers. For this reason, this study adopted a time-lagged approach to minimize the issue of CMV. As a result, CMV was not an issue in the current study. Additionally, the current research investigated transformational leadership in relation to organizational learning, knowledge management, the knowledge creation process, job satisfaction and organizational performance. Future studies should integrate organizational culture [163], organizational creativity [164], and organizational commitment [165] to replicate and augment the study model.

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