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Exploring the Impact of Transformational Leadership on Innovative Behavior in Saudi Universities

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Abstract

Transformational leadership plays a crucial role in fostering innovation and innovation-related behaviors within organizations. Despite its recognized importance, there are no empirical studies directly linking transformational leadership with innovative behavior. This research aims to explore the direct impact of transformational leadership on innovative behavior in the context of Saudi universities. Drawing on existing literature, the study framework was developed and the hypotheses were tested using a descriptive method, incorporating a survey of employees from Saudi universities. The response rate was 60%. The results indicated high levels of perceived transformational leadership among the respondents. Furthermore, the study found that idealized influence and intellectual stimulation positively affect inspirational motivation, problem sensitivity intellectual stimulation, and proactiveness, although these factors did not impact originality, except intellectual stimulation. The study provides practical implications for decision-makers and provides theoretical insights, along with suggestions for future research.

Keywords: Innovative behavior, Transformational leadership, Saudi universities, Intellectual stimulation

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Introduction

In an era marked by fierce competition, creativity plays a crucial role in enhancing a firm's competitive advantage. It involves generating new and valuable ideas related to products, services, processes, and organizational procedures [1]. Creativity often encompasses the use of diverse skills, knowledge, and experiences by employees to come up with innovative solutions for decision-making, problem-solving, and task completion. In particular, the service industry emphasizes creativity, as employees collaborate in teams to shape a shared understanding of customer needs and market designs. Leadership, particularly transformational leadership, is a pivotal factor influencing creativity. Transformational leaders motivate their subordinates to exceed expectations and inspire them to perform at their best. This type of leadership broadens followers' goals, boosts their confidence, and encourages them to achieve beyond predefined targets [2].

Innovative behavior refers to the generation and implementation of new products, services, or processes [3]. It begins with the identification of challenges and the development of creative solutions. Innovative individuals create tangible prototypes or models that can be mass-produced and used productively. In the service industry, employees' innovative behavior can manifest in ways that improve customer experience, service delivery, or safety. In the educational sector, this could include redesigning activities or enhancing the overall experience for students.

Problem statement

Despite widespread agreement on the crucial role of leadership in fostering innovation, there is a notable gap in research examining how transformational leadership influences employees' innovative behavior. Although leadership has been acknowledged as an essential driver of innovation, the integration of leadership and innovation research is still limited [4]. This study aims to bridge this gap by investigating the direct effect of transformational leadership on employees' innovative behavior. Prior research suggests that transformational leadership is positively correlated with innovation. Furthermore, employees' perceptions of their leaders' transformational behaviors are strongly linked to their own desired outcomes [5-7]. Understanding the psychological processes that translate leadership actions into innovative behavior is essential, as these behaviors are crucial for fostering a high-performance work environment [8]. The study of how leaders motivate employees' innovative behavior is key to unlocking organizational potential and enhancing innovation.

This research intends to explore the mechanisms through which transformational leadership influences employees' innovative behavior, with a focus on the higher education sector. By investigating this relationship, the study seeks to provide valuable insights into how transformational leadership can be leveraged to enhance innovation in academic environments.

Literature review

Leadership

Leadership is broadly defined as the ability to influence and persuade others to achieve specific goals or objectives [9]. The essence of leadership lies in motivating and convincing people to act in a way that aligns with a leader's vision, thereby reaching the predetermined goals. This ability to influence others is central to the definition of leadership, as various conceptualizations of leadership often emphasize similar ideas, especially the shift from a production-based structure to a customer-focused one. Voon *et al.* [10] describe leadership as an interactive process between the leader and their followers, where the leader's goal is to guide the group toward achieving management's defined objectives. Essentially, leadership can be understood as the capacity to direct and influence a group of individuals to reach common goals.

Kent [11] highlights that leadership is a dynamic process involving interaction between the leader and followers, which drives change, and development, and motivates behaviors and actions within a group. The leader is expected to motivate subordinates toward achieving objectives, control and coordinate tasks, and ultimately guide them to successful outcomes [9]. Leaders are the individuals followed by a group, whose aim is to reach both personal and collective goals.

Rad and Yar Mohammadian (2006) support this concept by demonstrating that participative leadership, while generally seen as a positive trait, can fail in certain organizational contexts. Their study revealed that a leader with a participative style may not always lead to success, as the organization may remain stagnant and fail to progress. In these cases, the leader's failure to inspire and direct effectively can lead to lower job satisfaction, higher employee turnover, and burnout. Conversely, leaders who adopt a more supportive and clear communication style tend to improve employee performance and job satisfaction. Organizations with such leaders show better outcomes in terms of both productivity and employee morale.

Transactional leadership theories suggest that leadership is an exchange of rewards or benefits between the leader and their followers [12]. The vertical-dyad linkage model and the multiple-screen model propose that leadership and followership operate through bargaining where power is not exerted over others but used to achieve mutual goals [13]. These exchanges may be tangible (such as pay or benefits) or psychological (such as recognition or approval). However, these relationships are often short-term and transactional, focusing more on the exchange than on building a lasting influence.

Transformational leadership, first introduced by Bums in 1978 and later expanded by Bass [14], focuses on inspiring and motivating followers to exceed their expected performance levels. Transformational leaders are known for their ability to communicate a compelling vision and inspire commitment to organizational goals [15]. Avolio [12] emphasizes that transformational leadership helps individuals achieve their mission and renew their commitment to organizational objectives, fostering an environment of growth, innovation, and continuous improvement.

Transformational leadership

Transformational leadership occurs when leaders inspire and motivate their followers to exceed their expectations, leading them toward higher performance to accomplish organizational goals. This leadership style encourages individuals to develop and perform at a higher level by promoting innovation and creativity within teams. As noted by George and Jones (2005), transformational leaders influence followers in three key areas: fostering personal growth, establishing high levels of trust, and motivating them with a sense of purpose.

One crucial aspect of transformational leadership is understanding the psychological mechanisms through which leaders affect creativity and innovative behavior in their followers. While previous research suggests that the psychological processes influencing creativity have not been fully explored, Shalley *et al.* [16] and Shin and Zhou [17] indicated that transformational leadership plays a key role in enhancing creative behavior. A potential mediator in this relationship is psychological empowerment, where employees experience increased intrinsic motivation, a sense of competence, and autonomy in their work, which can be facilitated by transformational leaders.

Transformational leaders are effective in achieving higher levels of innovation and performance because of their four main components: idealized influence, individualized consideration, inspirational motivation, and intellectual stimulation [18, 19]. Idealized influence is divided into two elements: idealized influence attributed, which involves the leader's charisma and values, and idealized influence behavior, which involves the leader's ethical actions.

Key dimensions of transformational leadership

1. Individualized Consideration: Individualized consideration involves leaders providing personal attention and focusing on the development needs of each follower. Leaders who practice this dimension spend time understanding individual aspirations, challenges, and skill sets, offering coaching and mentoring to help them grow [6]. This form of leadership promotes a supportive environment where trust is built, and continuous learning is encouraged. Leaders recognize that followers have diverse needs and offer tailored support to help them succeed.
2. Intellectual Stimulation: Intellectual stimulation involves challenging followers to think creatively and question established practices. Transformational leaders encourage followers to explore new ideas and innovate by stimulating their critical thinking [20]. This component helps followers approach problems in novel ways, fostering a culture of creativity and continuous improvement within the organization.
3. Inspirational Motivation: Inspirational motivation refers to the ability of a leader to articulate a compelling vision that aligns with the personal goals and values of followers. Transformational leaders communicate a clear and engaging vision that resonates with their team, motivating them to pursue the vision with enthusiasm. By using a blend of emotional and logical appeals, they help followers see how their efforts contribute to the greater organizational goals while also fulfilling their ambitions [6].

In essence, transformational leadership is crucial for driving innovation and creativity. By fostering an environment where individuals are empowered, intellectually stimulated, and motivated by a clear vision, transformational leaders can encourage their followers to surpass their usual limits and contribute to the organization's success.

Inspirational motivation and innovation

Transformational leaders use inspirational motivation to encourage their teams to pursue higher achievements than they would by relying solely on their self-interest. By employing emotional appeals and symbolic actions, these leaders motivate employees to generate and implement new ideas. When such leaders provide support throughout the idea-generation process, followers feel encouraged to share and apply their novel work-related concepts [21], leading to a more innovative work environment.

Defining innovative behavior

Creativity and innovation are often used interchangeably, but they represent different stages in the process. Creativity involves the generation of new ideas, while innovation is the process that includes both idea generation and the implementation of those ideas [22]. Innovation is often described as a multi-step process, where innovative behavior involves recognizing problems, developing novel solutions, and applying them effectively within the organization. This process is vital both at the individual level (for personal development) and at the organizational level (to initiate structural or procedural changes) [23].

Innovation is not just about creating new ideas; it encompasses introducing and applying these ideas to improve the performance of an organization [24]. Thus, innovative behavior is seen as a series of actions taken by an individual to turn new ideas into practical applications that benefit the organization.

The role of transformational leadership in innovation

Research examining the link between transformational leadership and innovative behavior is relatively scarce [23], but there is strong evidence suggesting that transformational leadership can positively influence innovation. Key studies by Afsar *et al.* [6], Bums [25], Bass [26], and Avolio and Bass (1995) suggest that transformational leadership fosters a sense of shared mission, self-confidence, and vision, all of which contribute to increased creativity and innovation. These leaders inspire employees by arousing intellectual stimulation and intrinsic motivation, both of which support innovative behavior [27-29].

This study builds on the existing body of literature to propose hypotheses that explore how transformational leadership influences innovative behavior. Using a deductive approach, it seeks to test these hypotheses within the context of a positivist research framework, contributing to a deeper understanding of the leadership-innovation dynamic in organizations (**Figure 1**).

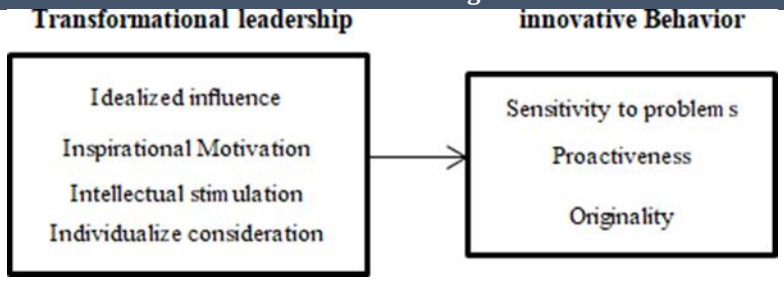

Figure 1. The study framework

Materials and Methods

For this study, data were gathered through a self-administered survey targeting employees from Saudi public universities. The original questionnaire in English was translated into Arabic, followed by a back-translation procedure to ensure consistency [30]. A convenience sampling method was employed to distribute 120 questionnaires, with telephone reminders sent twice to increase the response rate. Out of these, 80 complete questionnaires were collected, yielding a 60% response rate.

Instruments

To calculate transformational leadership, the study utilized the Multifactor Leadership Questionnaire [31], which is widely recognized in the field for evaluating transformational leadership. The questionnaire includes five subscales, each with four items. These subscales are:

Idealized Influence: For example, "My supervisor instills pride in me for being associated with him or her."

Inspirational Motivation: For example, "My supervisor talks enthusiastically about what needs to be accomplished."

Intellectual Stimulation: For example, "My supervisor re-examines ways of doing things to see if they are up to standard."

Individualized Consideration: For example, "My supervisor spends time teaching and coaching."

The responses for each item were rated on a five-point frequency scale, from 1 (never) to 5 (almost always). Since previous studies [32] found high intercorrelations among the transformational leadership subscales, the study also assessed innovative behavior through three dimensions:

Sensitivity to Problems: For example, "If I have a problem at work, I look in multiple directions for unconventional solutions."

Proactiveness: Describing the leader's ability to initiate tasks and responsibilities independently.

Originality: For example, "I can complete my work in a novel way."

Results and Discussion

Factor analysis

To assess the construct validity of the transformational leadership dimensions, a factor analysis was performed on the 20 items related to leadership behaviors. The results, displayed in **Table 1**, indicate that all the items loaded onto five distinct factors with eigenvalues greater than 1.0. These five factors explained 71.74% of the variance, well above the recommended level of 60%. Additionally, all factor loadings were above the minimum threshold of 0.50, and no cross-loadings exceeded 0.50, confirming the robustness of the factor structure.

Table 1. Rotated factor loadings for transformational leadership variables

Item No:	Components	1	2	3	4
Idealized influence					
My supervisor instills pride in me for being associated with him/her.	0.775	0.055	0.167	0.264	
My supervisor goes beyond self-interest for the good of the group.	0.717	0.217	0.187	-0.094	
My supervisor acts in ways that build my respect.	0.691	0.349	0.089	0.074	
My supervisor displays a sense of power and confidence.	0.670	0.117	0.087	0.002	
Inspirational motivation					
My supervisor talks enthusiastically about what needs to be accomplished.	0.128	0.757	0.263	-0.036	
My supervisor talks about a great vision of the future.	0.294	0.756	0.160	0.362	
My supervisor expresses confidence that goals will be achieved.	0.138	0.741	0.364	0.194	
My supervisor talks optimistically about the future.	0.373	0.714	0.118	0.252	
Intellectual stimulation					
My supervisor re-examines ways of doing things to see if they are up to standard.	0.163	0.123	0.833	0.236	
My supervisor gets me to look at problems from many different angles.	0.108	0.161	0.780	0.151	
My supervisor seeks differing perspectives when solving problems.	0.216	0.360	0.664	-0.078	

My supervisor suggests new ways of looking at how to complete assignments.	0.183	0.349	0.712	0.165
Individualized consideration				
My supervisor spends time teaching and coaching.	0.095	0.137	0.091	0.817
My supervisor considers me as having different needs and abilities from others.	0.136	0.264	0.154	0.779
My supervisor helps me to develop my strengths.	0.108	0.161	0.171	0.658
My supervisor sees me as having different aspirations from others.	0.216	0.360	0.213	0.701

Total variance explained (%): 71.74%
Kaiser-Meyer-Olkin (KMO): 0.836
Bartlett's test of sphericity: 958.549

Factor analysis of innovative behavior variables

Table 2 presents the results of the factor analysis for the innovative behavior variables. The items for innovative behavior were loaded onto three components/factors, with eigenvalues greater than 1.0. These factors account for 65.36% of the variance in the data, which exceeds the recommended threshold of 0.60. All factor loadings were above the minimum value of 0.50, and no cross-loading values exceeded 0.50. The first factor of innovative behavior encompasses four out of the five items, the second factor includes four items, and the third factor comprises four variables. As depicted in **Table 2**, the factor loadings for innovative behavior items are distributed across three distinct factors.

Table 2. Factor analysis of innovative behavior

Variables	Factor 1	Factor 2	Factor 3
Sensitivity to problems			
I explore multiple directions for unconventional solutions when facing a problem at work.	0.843	0.203	0.301
I seek new ideas and offer various solutions to problems.	0.838	0.094	0.076
I use diverse methods to approach problem-solving.	0.741	0.303	0.305
I can identify the causes of problems.	0.722	0.369	0.389
I can anticipate problems before they occur.	0.766	0.301	0.300
Proactiveness			
The leader takes initiative in completing tasks and responsibilities.	0.053	0.845	0.163
The opinion is presented as a concrete goal for developing action steps.	0.225	0.736	0.108
I offer innovative and unconventional solutions to problems.	0.298	0.713	0.216
I encourage the ideas of subordinates, even if they seem unusual.	0.398	0.635	0.163
Originality			
I can complete my work in a new and different way.	0.245	0.301	0.753
I avoid repeating the same approaches others use to solve business problems.	0.381	0.210	0.661
I am eager to identify the weaknesses and limitations in my work.	0.309	0.289	0.862
I am skilled in discussion, debate, and persuasion.	0.269	0.334	0.701
Variance explained	65.36%		
Kaiser-Meyer-Olkin measure of sampling adequacy	0.830		
Bartlett's test of sphericity	319.649		

Table 2 presents the results of the factor analysis for innovative behavior, where the factors represent Sensitivity to Problems, Proactiveness, and Originality. The factor loadings indicate the strength of association for each item with the respective factors. The total variance explained by the factors is 65.36%, with an adequate Kaiser-Meyer-Olkin measure and a significant Bartlett's test of sphericity.

Reliability analysis

Reliability refers to the extent to which a set of measurements produces consistent results when assessing the same variables. In this study, Cronbach's alpha was used as the primary diagnostic tool to evaluate reliability, as it is one of the most commonly used measures for assessing internal consistency. According to Hair *et al.* (2010), a Cronbach's alpha value of 0.70 is generally considered the lower threshold for acceptable reliability, although values as low as 0.60 are acceptable for exploratory research. Nunnally [33] also suggested that an alpha value above 0.60 can be regarded as reliable.

The reliability analysis results, presented in **Table 3**, indicate that all scales demonstrated a satisfactory level of reliability, with Cronbach's alpha values exceeding the recommended minimum of 0.60. Therefore, it can be concluded that the measures employed in this study possess an acceptable level of reliability.

Table 3. Reliability

Construct	Variable	Number	Cronbach's	Mean	Standard

		of items	alpha		deviation
Transformational leadership	Idealized influence	4	0.756	3.80	0.816
	Inspirational motivation	4	0.882	3.87	0.803
	Intellectual stimulation	4	0.761	4.00	0.842
	Individualize consideration	4	0.729	4.02	0.964
Innovative behavior	Sensitivity to problems	5	0.743	3.89	0.886
	Proactiveness	4	0.843	3.90	0.964
	Originality	4	0.763	3.95	0.886

Descriptive statistics for transformational leadership variables

Table 4 presents the average scores and standard deviations for the four transformational leadership dimensions: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. According to the table, inspirational motivation was the most emphasized dimension (mean = 3.89, standard deviation = 0.803), followed by idealized influence (mean = 3.69, standard deviation = 0.816). Intellectual stimulation was ranked third (mean = 3.67, standard deviation = 0.842), while proactiveness (mean = 3.49, standard deviation = 0.886) and sensitivity to problems (mean = 3.42, standard deviation = 0.964) were rated lower.

Analysis of correlations

Table 4 provides the correlation results between the study variables. The analysis of these correlations was performed to understand how the variables are related and to check for potential multicollinearity issues. Table 4 presents the correlation matrix for the variables examined in this study. This matrix helps in assessing the proposed relationships and serves as an early check for multicollinearity. The analysis shows that no correlations are near 1.0 or even close to 0.8 or 0.9, suggesting that multicollinearity is not a concern in this dataset.

Table 4. Person's correlation coefficient for all variables

Variables	Idealized influence	Inspirational motivation	Intellectual stimulation	Individualize consideration	Sensitivity to problems	Proactiveness	Originality
Idealized influence	1.00						
Inspirational motivation	0.663**	1.00					
Intellectual stimulation	0.555**	0.568**	1.00				
Individualize consideration	0.524**	0.552**	0.430**	1.00			
Sensitivity to problems	0.614**	0.651**	0.576**	0.544**	1.00		
Proactiveness	0.324**	0.341**	0.237*	0.126	0.254*	1.00	
Originality	0.330**	0.297**	0.437**	0.265**	0.285**	0.571**	1.00

**P < .01 *P < .05 **P < .01 *P < .05

The relationship between transformational leadership and innovative behavior

This section examines the first hypothesis of the study, which posits that the five transformational leadership variables (idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration) are positively related to innovative behavior.

The findings indicate that intellectual stimulation had the strongest impact on innovative behavior, particularly sensitivity to problems (ß = 0.365, P < 0.000). Following that, the idealized influence was also significantly related (ß = 0.343, P < 0.05). Inspirational motivation showed a weaker negative relationship (ß = -0.290, P < 0.07), and individualized consideration exhibited a negative but less significant effect (ß = -0.285, P < 0.065) (**Table 5**).

Table 5. Transformational leadership and innovative behavior (sensitivity to problems)

Variables	Sensitivity to problems	Sig.
Idealized influence	0.343	0.05
Inspirational motivation	0.290	0.07
Intellectual stimulation	0.365	0.000
Individualize consideration	0.285	0.065
R*	0.187	
Adjusted R*	0.095	

Δ R*	0.187
F change	3.08

Note: Level of significant: *P < 0.10, **P < 0.05, ***P < 0

The relationship between transformational leadership and innovative behavior (Proactiveness)

The results indicate that intellectual stimulation had the most significant impact on innovative behavior, specifically proactiveness (ß = 0.365, P < 0.000). This was followed by individualized consideration (ß = 0.320, P < 0.04), inspirational motivation (ß = -0.330, P < 0.05), and finally, idealized influence (ß = 0.185, P < 0.67) (**Table 6**).

Table 6. Transformational leadership and innovative behavior (sensitivity to problems)

Variables	Proactiveness	Sig.
Idealized influence	0.185	0.67
Inspirational motivation	0.330	0.054
Intellectual stimulation	0.378	0.05
Individualize consideration	**0.**0320	0.04
R*	**0.**187	
Adjusted R*	0.095	
Δ R*	**0.**187	
F change	3.08	

Note: Level of significant: *P < 0.10, **P < 0.05, ***P < 0

The relationship between transformational leadership and innovative behavior (Originality)

The results indicate that intellectual stimulation had the most significant impact on originality (ß = 0.344, P < 0.053), followed by individualized consideration (ß = 0.285, P < 0.062). Inspirational motivation (ß = 0.243, P < 0.073) and idealized influence (ß = 0.167, P < 0.449) also showed effects, although at lower significance levels (**Table 7**).

Table 7. Transformational leadership and innovative behavior (sensitivity to problems)

Variables	Originality	Sig.
Idealized influence	0.243	0.073
Inspirational motivation	0.167	0.449
Intellectual stimulation	0.344	0.053
Individualized consideration	0.285	0.062

$R^2 = 0.187$

Adjusted $R^2 = 0.095$

$\Delta R^2 = 0.187$

F Change = 3.08

Note: Level of significance: *P < 0.10, **P < 0.05, ***P < 0.01

This research aimed to explore the connection between transformational leadership (which includes idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration) and innovative behavior among employees. The study was conducted with a sample of 80 employees from Saudi universities. The major findings are summarized as follows:

The results confirmed that transformational leadership, which incorporates idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration, is positively related to innovative behavior. These findings are consistent with previous studies, such as the work by Afsar *et al.* [6]. Transformational leaders empower their employees by delegating authority and encouraging participative decision-making. This approach fosters a sense of collective identity and cohesion, motivating employees to take on tasks and responsibility. These leaders also make necessary changes to organizational systems to achieve visionary goals, while providing employees with the autonomy to make decisions related to their work. By offering personal support and assisting employees in achieving their goals, transformational leaders can empower them both psychologically and professionally.

Theoretical implications

The study contributes to the understanding of the factors that drive innovative behavior within organizations. Specifically, transformational leadership helps improve employees' sensitivity to problems and their ability to convince others to implement creative ideas. By stimulating employees' intellectual capacity, transformational leaders inspire them to engage in innovative activities and solutions.

Practical implications

The findings provide practical insights into enhancing innovative behavior through transformational leadership within the context of Arab cultures, particularly in Saudi Arabia. The results are valuable for decision-makers in Saudi universities, consultants, and governmental institutions. Leaders who adopt transformational leadership practices can help foster a more innovative and dynamic work environment within educational institutions.

Limitations and future research

While the study offers valuable insights, it has certain limitations. First, the research was conducted within the context of public universities in Saudi Arabia, and data were collected at one point in time, which limits the ability to generalize the findings. Future research could expand the scope by including data from other sectors or regions and adopting a longitudinal approach to assess changes over time. Secondly, the reliance on questionnaires for data collection might introduce common method bias, which could influence the results. Future studies should incorporate multiple data collection methods to mitigate this bias and enhance the robustness of the findings.

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