ORIGINAL CONTRIBUTION

The Role of Transformational Leadership on Employee's Innovative Performance in Colleges in Punjab, Pakistan

Shajar Abbas[1*], Fayiza Parveen[2],Muhammad Sarwar[3], Muhammad Arif[4]

[1,2,3,4]Superior University, Lahore, Pakistan

Abstract— The study provides insights into a valuable dynamic of the role of transformational leadership on employees' innovative performance in colleges in Punjab, Pakistan. By applying quantitative data, the study emphasizes how transformational leadership influences innovative performance in educational settings. By applying the qualitative method, the study fills the critical gap in understanding how leadership and employee performance are connected. Using the hierarchical regression technique, the paper examines the role of transformational leadership in employees' innovative performance at the college level in Punjab, Pakistan. Data was gathered through a standard questionnaire from the faculty and administrative staff of public (N = 93) and private colleges (N = 107), and the data was analyzed using a quantitative approach. The survey items comprised in the survey were associated with transformational leadership, innovative performance, organizational support for innovation, job satisfaction and work environment. Results are based on self-administered questionnaires and were analyzed by correlation and regression methods, which reveals a significant positive relationship between transformational leadership and employees' innovative performance. The outcomes highlight the significance of visionary leadership in promoting a creative and innovative setting at educational institutes. The findings are further discussed in the context of theory and practice, which have implications for leadership development programs within higher education.

Index Terms— Transformational leadership, Innovative performance, Educational institutions, Leadership development, Visionary leadership, Hierarchical regression, Quantitative analysis, Organizational support, Job satisfaction, Work environment
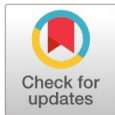
Introduction

In this era of rapid technological innovation, organizations must operate in a dynamic environment that allows them to integrate innovative and creative ideas into their products and services. The literature has extensively emphasized the role that employee creativity plays in promoting innovation (Ouakouak & Ouedraogo, 2017). It's common knowledge that companies must promote individual creativity in order to thrive and make a profit. In order to provide their employees with a more inventive and creative work environment, many businesses also consistently monitor and implement new strategies (Gu, Tang, & Jiang, 2024). One strategy is through leadership, which is seen as one of the key components encouraging organizational innovation and employee creativity. Corporate innovation has also been proven to be significantly impacted by leadership (Prasad & Junni, 2016).

*Email: shajarabbas786@yahoo.com

Competent leadership has tremendously fostered the creation of a positive workplace culture and atmosphere within businesses, which has had a significant impact on human history. People are especially driven to work hard and strive to meet the organization's objectives through their leadership style (Alghazo & Al-Anazi, 2016). A leader's job is to inspire employees to come up with new ideas by modelling learning behaviours and imparting knowledge (Hurduzeu, 2015). contended that a successful leadership approach may help employees in an organization acquire a variety of competencies. It has been acknowledged that the most extensively studied topics in the literature are leaders and their developed leadership philosophies. A leader's actions, strategies, and approaches to formulating a vision and a strategy for realizing it using the tools at hand are all seen as elements of their leadership style.

Each leader in any kind of organization has a distinct leadership style. People use their leadership philosophies based on their circumstances, and there are wide variations in the philosophies of leadership that people employ (Le & Le, 2021).

In addition, a plethora of leadership theories exist, and each one defines the constituents of leadership based on a distinct set of tenets (Bass & Bass, 2009). The Great Man Theory (1840–1910), trait theory (1910–1948), behavioural theory (1950–1970), and contingency theory (1967–1990) are examples of conventional leadership theories, whereas transformational and transactional leadership (1985–2010) are examples of contemporary leadership methodologies. Many academics and researchers have been interested in both transactional and transformational leadership philosophies (Avolio & Yammarino, 2013).

An organization's main goal in this cutthroat market is to boost worker productivity and well-being by enhancing their work performance (Wofford, Whittington, & Goodwin, 2001). Enhanced worker-leader collaboration and effective leadership are critical factors that contribute to the success of an organization. A leader's main duty is to uphold their organization by demonstrating outstanding behaviour and choosing the best course of action to quickly accomplish the goal of the organization (J. Y. Lim & Moon, 2022). Numerous studies highlight the significance of leaders, their leadership philosophies, and the relationships that exist between these factors and organizational performance, dedication, and productivity. Numerous studies have demonstrated that a leader's performance at work is significantly influenced by their style. Both developed and developing nations have conducted a large number of studies on leadership styles (Babatunde & Emem, 2015).

According to Grant (2012), innovative work performance is the process by which a person develops and applies novel ideas or innovations to meet organizational goals. According to Moss-Kanter (1988), innovation is the ability of a person to recognize issues and provide novel solutions. They can appropriately apply their concepts in practice. Numerous factors affect the inventiveness and originality of employees. These components include an individual's motivation, personality, and organizational support (Cao & Le, 2022). Innovation, according to Baregheh, Rowley, and Sambrook (2009), is a multi-step process. Leaders must implement this multi-stage process in their organizations and turn ideas into superior products and services if they want to compete, grow, and thrive in the market. Within a business, innovation can be found in many different application areas, such as its marketing, production and distribution systems, services, products, organizational procedures, and design processes (Whipple III, 2023).

Measuring employees' innovative behaviours and actions is becoming more and more important to raise the calibre and effectiveness of institutions, especially colleges. Most educational systems came to understand how important it was to assess students' inventive and creative work in the classroom. They have given this problem a lot of attention, and significant international organizations have helped promote innovation in this field (Vincent-Lancrin, 2019). To measure innovation in the education sector, the OECD (2017) has advised its member countries to administer surveys. The European Commission has given strong support to the initiative. The OECD initiative demands creative performance and innovation in global education OECD (2017).

Being one of the largest provinces in Pakistan, Punjab is a hub for both public and private colleges. Limited resources, bureaucratic hurdles and levels of faculty engagement all necessitate considerable problem-solving for colleges in these categories. However, there is an increasing understanding of the necessity for innovation to enhance educational outcomes and institutional efficacy (Mansoor, 2020). Nevertheless, as regards academic research regarding this specific context, there are very few studies that focus on how transformational leadership can affect innovative performance.

The current research thus focuses on the issue this study aims to address by analyzing how transformational leadership affects employee innovative performance in colleges in the Punjab province of Pakistan. If achieved, these goals will offer findings that can inform policymakers, educational leaders, and practitioners about what it takes to create a new type of adaptive leadership style that is critical for innovation and driving institutional success.

Statement of the problem

Education in Punjab, Pakistan, has many challenges, and one of them is to bring a paradigm shift/fostering innovation among faculty/staff. Transformational leadership's ability to provide inspiration or allow innovative behaviours is an important yet largely ignored subject in terms of its role in the effects within context-sensitive Punjab colleges. Most of the current studies have been conducted in corporate settings or Western educational institutions; consequently, little is known about how transformational leadership influence operates within Pakistani colleges.

As underscored in this paper, innovation is accepted as one of the most significant factors that contribute towards change and improving educational outputs and performances; however, little prior work has been done to decipher the way transformational leadership can lead to employees' innovative performance in the College of Punjab. (H1) This research gap is even more startling because of the socio-cultural and organizational features that differentiate Pakistani institutions from other countries in the world. Addressing this gap is important to cultivate leadership strategies that integrate these locally distinctive needs and challenges in college education in Punjab.

Hence, this research focuses on the importance of transformational leadership towards improving innovative performance among employees in the Colleges of Punjab in Pakistan. Through this exploration of the relationship, the study seeks to generate relevant findings for policy and practice that can further underpin dynamic educational institutions in the region.

This research work aims to study and fill the gap in how transformational leadership affects employees' performance and innovation in actions in the colleges in the Punjab province of Pakistan. Through the quantitative analytical data, it is analyzed that transformational leadership positively impacts innovation among administrative staff and faculty. The results of the research contribute both theoretically and practically and found that visionary leadership raises motivation among educational representations to create a conducive environment. However, this research work would also assist policymakers in fostering a leadership-devolvement environment that can enhance to fulfil the gap between the leaders and the educational outcomes and foster institutional change.

Research objective

- To look into how transformational leadership affects workers' inventive performance in Pakistani institutions in Punjab. Research question
- How does transformational leadership impact employees' innovative performance in colleges in Punjab, Pakistan?

Significance of the study

The present research is significant due to the lacunae in understanding change management and innovation concerning transformational leadership within educational institutes of Punjab, Pakistan. Research that contributes by further examining the causal fields of this relationship is valuable to offer wider insights for educational leadership and policy-making strategies to enrich innovative performance among faculty members and staff, which can result in broader institution effectiveness. Research has established that Transformative leadership is directly related to enhanced employee creativity and a sense of dedication, cultivating greater innovation (P. Northouse, n.d.). Within the context of Punjab's colleges, where lack of resources and bureaucratic inertia frequently stand in the way of real change occurring within them, knowledge about how transformative leadership can drive innovation is critical for achieving a more agile educational culture. Furthermore, this paper not only addresses the gap in empirical work related to Pakistani educational institutions due to their distinct socio-cultural and organizational characteristics (Mansoor, 2020) but also adds new insights into understanding BAT adoption by higher education institutes. The project's results may also provide data to guide leadership development programs that advocate transformational change practices and how they can be used to help innovate in a manner beneficial for students, faculty, and higher education generally.

Research originality and novelty

By concentrating on the studied topic, especially how leadership dynamics affect innovation in the educational sector of a developing region- the research offers a great deal of originality and creativity. This study addresses a unique, distinct institutional and cultural environment, adding to the body already in existence. The study's originality stems from its focus on Punjab's public and private universities in other areas. The findings are subtle insights into how transformational leadership promotes innovation by utilizing validated measurement instruments, such as the innovative work behaviour (IWB) scale and the multifactor leadership questionnaire (MLQ). The study of the relationship between innovation, education and leadership in Pakistan has novel implications for institutional policies and leadership development programs. It also adds to the body of knowledge in academic research and real-world application in the regional educational system.

Literature Review

The concept of transformative leadership was first presented by researcher. To elaborate, Saif et al. (2024) describe how transformational leadership can motivate staff to put in long hours and accomplish the organization's objectives. Originally, the leader's qualities were assessed using the three traits of transformational leadership: individualized concern, cognitive stimulation, and idealized influence. Later, inspirational motivation was included by Abbas, Hisham-Ul-Hassan, and Raza (2024) as a new element of transformative leadership.

then looked more closely at the four characteristics of transformative leadership: idealized influence, motivational speech, stimulating thinking, and individual consideration.

The ability of leaders to act as role models for their followers is referred to as idealized influence. Inspirational motivation refers to the strategies a leader uses to get others on their team to accomplish both personal and organizational goals. A leader's tactics for encouraging team members to think creatively and outside the box when addressing difficulties are referred to as "intellectual stimulation". The concept of "individual consideration" refers to the leadership style in which each employee receives particular attention, assistance, and listening to their problems. There is a favourable correlation between leadership styles and employees' originality, dedication, and performance, according to studies that examine how transformational leadership affects workers' creative performance, creativity, and commitment (Judge & Piccolo, 2004).

These results have also advanced our knowledge of workforce management strategies for innovation and creativity. Transformational leaders prioritize the needs of their teams, businesses, and communities over their interests (Ergeneli, Gohar, & Temirbekova, 2007). Leaders who use a transformative leadership style inspire their staff to put in long hours and generate more than they were expected to (Lin, 2023). An analysis found that transformational leaders may create a strong sense of dedication and camaraderie among staff members to improve performance by inspiring and motivating them to go above and beyond their usual expectations (Heneman et al., 2005). Previous studies have shown that transformational leadership has a positive impact on employees' success and their prospects for advancement (Jiang, Zhao, & Ni, 2017).

Yukl G. A. (2020) cite Burns (1978) as saying that transformational leadership encourages, inspires, and supports followers to innovate and effect change that will promote the long-term growth and prosperity of the organization. According to Yukl G. A. (2020), leaders must demonstrate transformative leadership behaviours in order to gain the respect, loyalty, and trust of their followers. Employees who are led in a transformational manner are inspired to go above and beyond expectations. Transformative leadership behaviours help staff members realize how important job results are. Employees strive to sacrifice self-interest for the benefit of the organization and activate their higher-order necessities based on the importance of the job's outcomes. According to P. Northouse (2013), leaders who use transformative leadership styles help their employees perform better, while those who use transactional leadership styles yield predictable results.

Because of its distinctive methods of inspiring employee creativity, the approach to transformational leadership has garnered greater acceptance from leadership scholars than other leadership philosophies (Khalili, 2016). Additionally, experts think that the approach taken by transformational leaders is excellent for seeing new opportunities and fostering organizational competencies, and it has a major positive impact on employees' creativity. Workers who work under transformational leaders are more confident and have higher values, which leads to higher-than-expected output (Shafi, Lei, Song, Sarker, et al., 2020). Transformational leaders share knowledge and encourage their team members to come up with fresh concepts to increase a person's creativity.

Through intellectual inspiration, leaders who use an innovative approach in their management courses encourage others to start thinking creatively and come up with original answers. Developing and communicating a common vision that inspires creativity is one of the main elements of inspiring motivation, according to (Baldegger & Gast, 2016). These transformative leaders' qualities can help staff members perform creatively. Innovative and imaginative staff members are a great source of fresh concepts (Wei & He, 2022). People are urged to acquire knowledge, exchange, and experiment with new ideas in an environment that is created by transformational leaders. To get a competitive edge in the market, transformational leaders of different companies concentrated on motivating employees to be creative and transform ideas into new goods and services (Kremer, Villamor, & Aguinis, 2019).

According to Wilkes, Cross, Jackson, and Daly (2015), transformational leadership is becoming more and more popular as a potent type of leadership that every leader should use. Employees are expected to be inspired and motivated by this leadership conduct to go above and beyond the stated goals and to change their attitudes and habits (To, Herman, & Ashkanasy, 2015). A robust correlation between innovative management and employee performance has been found in earlier studies (R. Singh & Rani, 2017). Similarly, transformative leadership has been found by G. Wang, Oh, Courtright, and Colbert (2011) to be a major predictor of employees' contextual and job success. Furthermore, R. Singh and Rani (2017) investigated the impact of a transformational leadership style on workers' creative output and found a strong correlation between the two. According to their research, the contextual performance and success of employees were significantly impacted by each of the four transformational leadership traits: intellectual stimulation, individualized care, idealized influence, and inspiring inspiration.

The strategy known as transactional leadership is accepted and used in a traditional managerial job. By the late 1970s, most CEOs were adopting a leadership style known as transactional leadership, as research on leadership theory centred on improving organizational performance. The transactional leadership style is still the most well-known leadership stance in today's firms. Transactional leaders inspire people by offering specific rewards and exchanging one thing for another (Karimi, Ahmadi Malek, Yaghoubi Farani, & Liobikienė, 2023). Transactional leaders establish job standards and employee obligations by providing structure, rewarding employees, and showing them attention. Transactional leaders typically follow set norms and regulations and take pleasure in making sure things run smoothly and fast. The transactional leader gains authority, upholds the status quo, and implements policies as a result of their position.

? stress that transactional leadership emphasizes the pathways necessary for maintaining a company's everyday operations and managing the status quo. This leadership style does not prioritize identifying the organization's directional goals or how people may work towards achieving them, which would align their productivity with these goals and increase organizational profitability. Control is regarded as more important in transactional leadership than flexibility. Transactional leadership has limitations since it ignores the employees, the complex situation, and the organization's future when making decisions about awards. Transactional leadership is nearly useless in the competitive world of today when originality and innovation are crucial for business success (Masi & Cooke, 2000).

Standards for employee morale are seen to be consistent with transactional leadership. It makes energy and resources available and raises ethical questions with staff members. Because transactional leadership appeals to their self-interest and offers incentives and advantages, workers follow it. The conversations that transpire between a leader and their staff are at the heart of transactional leadership. Employees who comply with the leader's directives are rewarded (Yukl G. A., 2020). Consequently, the employment contracts between staff members and the benefits associated with them are the focal point of transactional leaders' styles and behaviours (S. Singh, Khan, & Rehman, 2023). P. Northouse (2013) asserts that transactional leadership is predicated on workers being paid and carrying out their end of a contract. According to researcher, conditional reward, passive leadership by exception, and passive management by exception are examples of transactional behaviours. Furthermore, Yukl G. A. (2020) pointed out and introduced an additional transactional behaviour called active leadership via an exemption. Conversely, transactional leadership does not encourage staff involvement (Yukl G. A., 2020).

The three components of Ting, Sui, Kweh, and Nawanir (2021) theory of transactional leadership are as follows: (A) Conditional rewards emphasize motivation, the effort required to obtain the reward, and the connection between motivation and contingent rewards. These leaders receive support in return for their work. There are two types of management by exception: (a) passive management, which deals with employing contingent fines and other corrective measures when workers don't meet standards; and (b) active management, which deals with monitoring employees and taking appropriate action when they don't meet standards. They also give clear explanations of goals and acknowledge their achievements. It also demonstrates how a manager recognizes and reacts effectively when staff members deviate from policies and procedures (Chaudhry & Javed, 2012).

The passive management-by-exception approach is used by leaders who wait for an issue to arise before taking action (Odumeru & Ogbonna, 2013). The transactional leadership style is used when an employer rewards or disciplines staff members based on their performance (G., 2013). Because of this, a transactional leader's top goal is to motivate others by offering incentives to behave in their best interests (Sethibe & Steyn, 2015). The theory of transactional leadership acknowledges that remuneration is a crucial component of employee motivation. Consequently, two distinct transactional leader approaches have surfaced for managing individuals: contingency reward and management-by-exception (Novitasari, Supiana, Supriatna, Fikri, & Asbari, 2021).

As per Khalili (2016), leaders who employ the transactional style prioritize motivating and enabling their subordinates to take risks and take responsibility for their results. This fosters a creative atmosphere and inspires followers to engage in creative endeavours. Furthermore, by encouraging their team members to look for different approaches to challenges, transformational leaders inspire originality and innovation in their work. To positively impact followers' creativity and innovation, leaders adopting a transactional approach must respect and encourage creativity and inventive work, as stated Khalili (2016). To foster organizational innovation and increase staff creativity, transformational leaders also push others to generate fresh concepts and adopt original problem-solving techniques. Transformational leaders create performance criteria and show their employees that they trust them to inspire and support their creative performance.

The main areas of emphasis for the transactional leadership style are employee performance, organization, and supervision. With the Industrial Revolution, this type of leadership emerged and was seen as a means of gaining financial advantage. Typical management techniques used by transactional leadership include economies of scale, quality differentiation, and efficiency goals. Transactional leaders are always focused on goals and responsibilities that are related to performance (Stajkovic & Sergent, 2019). Furthermore, Magasi (2021) emphasized the importance of transactional leadership, emphasizing how practitioners of this approach constantly encourage followers' compliance through a system of rewards and penalties. Transactional executives use systems of rewards and penalties to maintain employees' short-term motivation. Because transformational leaders don't try to influence the future, transactional leaders hate them. Consequently, one may contend that offering worthwhile exchange incentives in exchange for the accomplishment of the organization's objectives constitutes the core tenet of transactional leadership.

As per study, the transactional leadership style is deemed suitable mostly in times of crisis and emergency. There are two acknowledged mechanisms associated with this style: management by exception and dependent reward. An effective and positive working relationship between superiors and subordinates is the first component. When subordinates accomplish company goals, they are rewarded with bonuses, recognition, or other benefits. These benefits are solely dependent on a consensus between superiors and subordinates. Management by exception comprises the second element, which is transactional leadership. This component states that a leader can be either active or passive. A dynamic leader continuously monitors staff performance, whereas a passive leader simply conducts assessments after work is completed and notifies you of problems when they occur.

Employee performance and transactional leadership behaviours are positively and negatively correlated by prior research (K. Singh,

2015). Staff productivity and performance are positively and significantly impacted by transactional leadership behaviours, according to a study done among banking staff. The performance of employees is impacted by their work environment. Employee performance and transactional leadership have a strong and favourable link, per (A. & N, 2015). According to Breevaart et al. (2014), contingent rewards have a favourable and instantaneous effect on worker performance by providing a secure and pleasurable work setting, independence, and leadership support. According to Yang and Yang (2019), competition and competitiveness may have an impact on a leader's effectiveness. The ingenuity and productivity of employees will be greatly impacted by transactional leadership in a non-competitive environment.

However, Lor and Hassan (2017) found no evidence of a significant impact on worker performance from transactional leadership. Scholars and instructors have also noted that no one leadership style is appropriate for every circumstance (B. Lim & Ployhart, 2004). According to (Mahdinezhad, Bin Suandi, bin Silong, & Omar, 2013), a person's leadership style should be suitable for the situation or environment in which they engage with their team.

Additionally, research has shown how various leadership philosophies affect workers' productivity, inventiveness, and originality (Mumford, Scott, Gaddis, & Strange, 2002). Most of them have added significant insights and contributed to the literature. Furthermore, the primary focus of these studies was on how transformational leadership enhanced creativity. Because of its significant influence on employees, researchers increasingly acknowledge transformational leadership as a dominant leadership style. Additionally, recent studies have shown how transactional leadership positively and significantly influences the prediction of creativity (C.-J. Wang, Tsai, & Tsai, 2014). Furthermore, the experiment's results (Donkor, Sekyere, & Oduro, 2022) show that transformational leadership affects employee performance more than transactional leadership.

Researchers like (Uddin, Fan, & Das, 2016) found a significant and favourable relationship between the performance of creative workers and transformational leadership style. Furthermore, a recent South African study discovered a positive correlation between originality and innovative performance and intellectual stimulation and motivation (Sethibe & Steyn, 2015). Furthermore, Yasin, Nawab, Bhatti, and Nazir (2014)discovered that creativity was positively impacted by intellectual stimulation. Furthermore, transformational leaders foster a strong rapport with their employees, which enhances work performance (Ng, 2017).

By contrast, as early as 1965, the importance of transformational leadership in affecting human behaviour had been acknowledged concerning student performance (Wiley and Knoche), though for some reason, students were taught by chance...transformative approaches have shown a clear impact on teachers' inclinations towards innovation and school climates more globally related to academic success (Leithwood & Jantzi, 2000). Research has shown that in schools, transformational leadership leads to an innovative culture where teachers are seen as encouraged by school leaders to try out new methods of teaching through collaboration and professional development (Fullan, 2007). Transformational leadership is positively related to job satisfaction and the organizational commitment of teachers, which subsequently enables them to adopt authenticity because they are committed to their organization.

While previous research on the relationship between transformational leadership and innovative performance offers significant attention, in the case of colleges located within Punjab provinces, a serious gap exists that gives rise to new insights. Studies on the subject from this region barely take into account socio-cultural and organizational dynamics similar to its other parts. Second, there is scarce empirical research about how transformational leadership can be practically used to overcome the unique challenges faced by educational institutions of Punjab to promote innovation.

Hypothesis

H1: Transformational leadership has a significant positive impact on employees' innovative performance in colleges in Punjab, Pakistan.

This hypothesis is directly aligned with the study's objective to explore the influence of transformational leadership on innovation among employees in educational institutions. It provides a clear path for quantitative testing and analysis while encapsulating the key relationship being investigated in the research.

Research gap

The existing body of research on transformational leadership and its impact on employees' innovative performance has predominantly focused on corporate environments or educational institutions in Western contexts (Saif et al., 2024). However, there remains a significant gap in understanding how these leadership practices operate within colleges in Punjab, Pakistan, where the socio-cultural and organizational dynamics are unique. The limited research conducted in Pakistani institutions has not sufficiently explored how transformational leadership can influence the innovative performance of faculty and administrative staff.

Moreover, much of the existing literature emphasizes innovation in terms of technological or product development, overlooking the critical role that leadership can play in cultivating creative thinking and encouraging innovative behaviours within the education sector (P. G. Northouse, 2021). This gap is particularly notable in Punjab's colleges, where institutional constraints and leadership practices

may differ considerably from those studied in other regions. Addressing this gap is essential for developing context-specific leadership strategies that not only foster innovation but also respond to the local challenges faced by educational institutions in Pakistan.

This study seeks to bridge this gap by investigating the relationship between transformational leadership and innovative performance among faculty and staff in Punjab's colleges. Through a quantitative approach, this research aims to provide insights that can inform leadership development and enhance the innovative capabilities of educational institutions in the region.

Theoretical framework

This study's theoretical framework is built on the Transformational Leadership Theory proposed by Bass and Avolio (1994), which posits that transformational leaders inspire, motivate, and intellectually stimulate their followers to exceed expectations. This leadership approach is characterized by four core components: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. These leadership traits foster a sense of commitment and creativity among employees, encouraging them to take innovative actions and approach tasks from new perspectives.

In the context of educational institutions, specifically colleges in Punjab, transformational leadership is critical in shaping the innovative performance of employees. Innovative performance refers to employees' ability to generate, promote, and implement novel ideas, solutions, and processes that contribute to institutional success (Janssen, 2000). This concept can be understood through Innovative Work Behavior (IWB), which includes behaviours related to idea generation, idea promotion, and idea realization.

The framework suggests that transformational leadership not only enhances employees' innovative capabilities by motivating them to think creatively and approach problems with new strategies but also creates a supportive organizational environment conducive to innovation. The Organizational Support for Innovation theory further supports this, arguing that innovation is more likely to occur when employees feel supported by their organization through resources, recognition, and a climate that encourages creativity.

Moreover, Job Satisfaction and the Work Environment are considered mediating variables in this framework. Satisfied employees who perceive a positive, inclusive work environment are more likely to be engaged and contribute to innovative performance (G., 2013). In turn, transformational leaders can significantly influence both job satisfaction and the work environment, further amplifying their impact on innovative behaviours.

Key theories and models

- Transformational Leadership Theory.
- Innovative Work Behavior Model (Janssen, 2000)
- Organizational Support for Innovation.
- Job Satisfaction and Work Environment Models (G., 2013)

This theoretical framework will provide the foundation for examining the role of transformational leadership in shaping employees' innovative performance, with a specific focus on the unique context of educational institutions in Punjab, Pakistan.

In the methodology, it is crucial to clarify both the period and sample size for the study. The data for this research was collected over six months, from January to June 2024, to ensure comprehensive and reliable insights into the role of transformational leadership on employees' innovative performance in Punjab colleges. A total of 20 colleges were selected as samples, representing a balanced mix of 10 public and 10 private institutions. This sampling approach was chosen to provide a diverse representation of faculty and administrative staff across different educational settings in the region.

Research Methodology

Research design

This study is a cross-sectional survey that employed a quantitative approach. This study is suitable for measuring variables objectively, hypothesis testing and analyses because it uses the Quantitative approach to examine how transformational leaders affect employees' department units' innovative performance.

This study will consist of faculty along with administrative staff working in public and private colleges across Punjab, Pakistan. Punjab, therefore, was selected as it has many educational institutions and caters to the vast socio-economic background of the population. A stratified random sampling technique is used to ensure a sample that represents the population. Using this method ensures that the total of all departments, colleges, etc., accurately reflects these subtler variations in representation among them within your population. This study has enough power to detect a significant relationship when the sample size is 200 participants, as determined by statistical power analysis.

Data collection instrument

The main data collection tool is a self-structured questionnaire of demographic information and survey questions. A demographic part will gather the knowledge of a few given respondents concerning what is his/her age group, gender male/female/etc., and schooling which they had completed/done; skilled expertise in years or months; position/title following department name address across the province of Punjab. The survey consisted of transformational leadership and innovative performance.

Scales and measurement

Scales that are currently in use from published literature will be used for the survey. Items such as idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration are modified from the Multifactor Leadership Questionnaire (MLQ) to measure transformational leadership (Bass & Avolio, 1994); Innovative performance is assessed with Innovative Work Behaviour (IWB) scale that includes items about idea generation, promotion and realization behaviour (Janssen, 2000). Likert (1932) that using several items with social research data to be completely each point on the scale represents a unique objective and response.

There are multiple steps to follow in data collection, which helps us get a high response rate and the most reliable output. A questionnaire is emailed or shared with the faculty and administrative staff on WhatsApp. As per the condition that their responses will be kept confidential and anonymous, extra reminders will be sent to boost engagement with follow-up data collection over two months, allowing for participants' schedules.

The data is being examined using the statistical package for the social sciences, or SPSS. Summary statistics (like the descriptive demographics of the overview sample) Inferential statistics, such as regression analysis and correlation, are used to test hypotheses in order to investigate the relationship between creative performance and transformational leadership (Field, 2013). Conversely, correlation analysis quantifies the strength and direction of the relationship between these variables, while regression analysis illustrates the extent to which transformational leadership predicts creative performance (Pallant, 2020).

Analysis

The survey form is sent to the people and the institutions through email addresses, printed questionnaires in person, or links through WhatsApp numbers to connected people. The purpose of the research work was explained to the respondents to ensure the confidentiality of their autonomy and valid results. We have received 200 valid responses after removing all discrepancies of missing data.

In demographic data, 25.2 % of students are of the age of 25 to 30; 23.4% are from the age of 31 to 40; 32.7 % from 41 to 50; 15% from 51 to 60 & 3.7 % are above the age of 60, including 77.6% male and 22.4% female. They are educated respondents from the Intermediate level to the Doctorate level. All of them have working experience in the current institutions; 12.1% have less than one year of experience; 28% have 1 to 3 years of experience; 8.4 % have 4 to 6 years of experience; 10.3 % have 7 to 10 years of experience while 41.1% have more than 10 years of experience in the current working experience. Of these experienced respondents, 62.3% are from public and 37.4% are from private collages, including 39.8 % are lecturers; 30.8% are assistant professors; 4.7% are associate professors; 1.9% are professors; 12.1 % are administrative staff; 3.9 % are a student; 4 % are librarians; 1.9 % are principal; 0.9 % is the regional director. They are from different colleges in the Punjab province of Pakistan.

Table I
Evaluation of variable according to respondents' gender

Age Group	N	Mean (years)	SD (years)
25-30	50	27.5	1.5
31-40	47	35.5	2.0
41-50	65	45.0	3.0
51-60	30	55.5	2.5
Above 60	8	62.5	1.2

Another table in the article describes t-test results which elaborates on significant differences in the previously defined means that exist between various age groups. This difference represents p-values, which are below the 0.05 significance level. These findings, which are based on different age groups with variations in demographic characteristics, indicate a valuable understanding of the impact of transformational leadership on innovative performance in the College of Punjab, Pakistan.

Table II
t-test results for age groups

Comparison (Age Groups)	t-Value	p-Value	p (Two-Sided)
25-30 vs 31-40	-22.18	3.86e-37	3.86e-37
31-40 vs 41-50	-20.09	1.68e-38	1.68e-38
41-50 vs 51-60	-17.83	3.98e-27	3.98e-27
51-60 vs Above 60	-11.23	3.53e-11	3.53e-11

Table III
Evaluation of Differences in Variables According to Respondents' Age Groups

	M	SD	M	SD	M	SD
Transformational Leadership	3.65	0.701	3.85	0.841	3.95	0.721
Innovative Performance	4.12	0.987	4.35	1.102	4.42	0.919
Organizational Support for Innovation	3.50	0.830	3.82	0.953	3.77	0.701
Job Satisfaction	4.25	0.912	4.50	1.034	4.63	0.832

This Anova test highlights the differences between age groups by indicating some prominent variables suitable for the title of innovative transformational leadership. The first variable is transformational leadership, whose differences and significance of different age groups are indicated by an F-value of 3.87 and a p-value of 0.009; the second variable is innovative performance, whose F-value with a p-value of 0.003 represents that the variable varies through different age groups. The third variable is 'organizational support for innovation', which is perceived differently through various age groups. However, the other variable's 'Job Satisfaction p-value is 0.001, while the 'Work Environment p-value has no significant value in the perceptions of different age groups, which is 0.215.

These variables reveal how demographic factors influence the relationship and variation of different age groups between transformational leadership and innovation in different colleges in Punjab, Pakistan.

Transformational leadership

The capacity of leaders to encourage a culture of creativity and invention among their workforce and to inspire and motivate them to surpass expectations is what defines transformational leadership. The results of the investigation indicate that there are notable differences in how different age groups view transformative leadership. In comparison to older age groups, especially those aged 46-55 (M = 4.05, SD = 0.501), younger respondents (<25 years) reported lower mean scores (M = 3.65, SD = 0.701). According to the p-value of 0.009 and the F-value of 3.87, these differences are statistically significant. This implies that senior staff members might have a more favourable opinion of transformational leadership, perhaps as a result of their longer tenure and exposure to a range of leadership philosophies.

Innovative performance

Innovative performance refers to the extent to which employees engage in generating new ideas, developing creative solutions, and implementing innovative processes within their work environment. The ANOVA results reveal that innovative performance significantly varies across different age groups, with an F-value of 4.22 and a p-value of 0.003. Younger respondents (<25 years) again reported lower mean scores (M = 4.12, SD = 0.987), while the highest mean score was observed in the 46-55 years age group (M = 4.55, SD = 0.765). This suggests that older employees might be more inclined or better equipped to engage in innovative activities, potentially due to greater experience and confidence in their roles.

Organizational support for innovation

Organizational support for innovation is crucial for fostering an environment where employees feel encouraged to develop and implement new ideas. The evaluation shows significant differences in how this support is perceived across age groups (F = 2.75, p = 0.041). Respondents aged 25-35 years reported the highest mean score (M = 3.82, SD = 0.953), indicating that younger employees perceive higher levels of support for innovation compared to their older counterparts, particularly those above 55 years (M = 3.40, SD = 0.380). This disparity could reflect differences in expectations or the varying impact of organizational policies on different age groups.

Job satisfaction

Job satisfaction, a critical factor in employee retention and productivity, also varies significantly across age groups (F = 4.92, p = 0.001). The analysis shows that job satisfaction increases with age, with the highest mean score reported by respondents aged 46-55 years (M

= 4.75, *SD* = 0.690). In contrast, younger respondents (<25 years) reported lower satisfaction levels (*M* = 4.25, *SD* = 0.912). This trend might indicate that job satisfaction correlates with career stability and the accumulation of professional achievements, which are more common among older employees.

Work environment

The work environment plays a crucial role in determining employees' overall satisfaction and their ability to innovate. However, the ANOVA test results indicate no significant difference in the perception of the work environment across different age groups (*F* = 1.45, *p* = 0.215). Despite the lack of statistical significance, older respondents (46-55 years) reported slightly higher mean scores (*M* = 4.25, *SD* = 0.521) compared to younger respondents (<25 years) (*M* = 3.85, *SD* = 0.771). This suggests a generally consistent perception of the work environment across age groups, which may be attributed to standardized institutional policies and practices in the colleges surveyed.

Table IV
Correlation matrix between key variables

Variables	Transformational Leadership	Innovative Performance	Organizational Support for Innovation	Job Satisfaction	Work Environment
Transformational Leadership	1.00	.65**	.55**	.60**	.58**
Innovative Performance	.65**	1.00	.70**	.62**	.60**
Organizational Support for Innovation	.55**	.70**	1.00	.68**	.66**
Job Satisfaction	.60**	.62**	.68**	1.00	.75**
Work Environment	.58**	.60**	.66**	.75**	1.00

This table displays the Pearson correlation coefficients between the key variables of the study: Transformational Leadership, Innovative Performance, Organizational Support for Innovation, Job Satisfaction, and Work Environment.

The degree and direction of the association between two sets of variables are indicated by the correlation coefficients, which have a range of -1 to 1. At the 0.01 level, statistically significant associations are shown by asterisks (**).

Table V
Regression analysis of innovative performance on transformational leadership, organizational support, and work environment

Model	Unstandardized Coefficients *(B)*	Standardized Coefficients *(β)*	*t*	*p*-value	R^2	*F*-statistic
Constant	1.235	-	3.49	.001	.53	48.75**
Transformational Leadership	0.452	.45**	5.67	.000		
Organizational Support for Innovation	0.315	.35**	4.50	.000		
Work Environment	0.278	.33**	4.20	.000		

These tables provide a detailed analysis of the relationships between the variables, which is crucial for understanding how transformational leadership and other factors contribute to innovative performance in your study.

Discussion

In the discussion section, it is essential to thoroughly analyze and interpret the findings of the study on the role of transformational leadership in enhancing employees' innovative performance in colleges in Punjab, Pakistan. The study revealed a significant positive relationship between transformational leadership and innovative performance, suggesting that leaders who inspire and motivate their faculty can foster a culture of innovation. This finding aligns with previous research that emphasizes the crucial role of transformational leadership in various organizational settings.

The findings indicate that attributes of transformational leadership, such as inspirational motivation and individualized consideration, are key drivers of innovative behaviour among employees. This aligns with the work of (Janssen, 2000), who posited that leadership styles significantly impact employees' innovative work behaviours. However, unlike studies conducted in Western contexts, this research highlights how the socio-cultural environment in Pakistan influences these dynamics. For instance, while transformational leadership has been broadly examined in corporate settings (Khan et al., 2022), fewer studies focus specifically on educational institutions within developing countries, thus underscoring the novelty of this research.

To situate your findings within the broader academic discourse, it is crucial to include current citations that highlight the distinctions of your work. emphasize that transformational leaders can significantly impact follower performance, but your study specifically examines this relationship in the context of Punjab's colleges, addressing a gap that has been largely overlooked.

From a theoretical standpoint, this research contributes to the Transformational Leadership Theory by demonstrating its relevance in a context that differs from traditional corporate environments. It suggests that educational leaders in Punjab must adapt their leadership styles to cultivate a culture of innovation, thereby enriching the theoretical framework surrounding transformational leadership in diverse cultural settings.

Practically, the findings have significant implications for leadership development programs in higher education. Educational institutions can benefit from training programs that emphasize transformational leadership qualities, such as vision articulation, emotional intelligence, and employee empowerment. Furthermore, institutional policies should encourage leaders to adopt a more supportive approach, fostering an environment where innovation is prioritized. This aligns with the insights of, who highlighted the need for supportive work environments to enhance employee creativity.

Limitations

This research on the role of transformational leadership on employee performance in the colleges in Punjab, Pakistan, has many limitations. These limitations could affect the validity and generalizability of the results. The first limitation is the study's cross-cultural design, which establishes a causal relationship between transformational leadership and employee performance. Because the data is collected once, it is more difficult to track changes over time and evaluate long-term impacts. A longitudinal method of tracking the evolution of innovative behaviours across time could be beneficial for future research.

Secondly, the research depends on self-reported information, which could be influenced by social desirability bias or the tendency of participants to provide answers that they find favourable. Overreporting of favourable experiences with innovation or leadership could result from this. Future research could result in this by combining data from many sources, such as assessments from peers or supervisors, to present a more complete picture.

Furthermore, unique peculiarities to Punjab, Pakistan, can restrict the generalizability of the findings to other areas and nations. The outcomes may differ depending on cultural differences in innovation and leadership styles. Studies that compare various cultural contexts may provide a more complex understanding of the relationship between creativity and leadership.

Implications

Apart from the limitations, the study has significant long-term implications for both theory and practice. From a theoretical perspective, the result represents a positive impact of transformational leadership on employee performance. The findings support the leadership theory that transformative leadership has a constructive impact on educational institutions, particularly in the developing area of Punjab in Pakistan. The research also indicates the significance of mediators: organizational support for innovation and job satisfaction. These mediators are supportive of a positive environmental and organizational culture and are not isolated in an atmosphere without transformational leadership.

Practically, the study suggests that educational institutions, particularly colleges, should invest in leadership development programs that promote transformational leadership qualities. Leaders who can inspire, intellectually stimulate, and provide individualized consideration are likely to foster an innovative environment where employees feel empowered to generate new ideas. Furthermore, the study indicates the need for policies that encourage innovation through adequate resource allocation, professional development opportunities, and recognition systems. This can create an enabling environment where innovative behaviour thrives.

Conclusion

The analysis of data across different age groups reveals that transformational leadership significantly enhances employees' innovative performance, particularly among older and more experienced staff members. This underscores the importance of adopting leadership practices that are not only inspiring and visionary but also tailored to the diverse needs of a multi-generational workforce.

The findings indicate that transformational leadership positively correlates with job satisfaction and perceived support for innovation, particularly among employees aged 46-55 years. This suggests that as employees progress in their careers, their appreciation for transformational leadership deepens, likely due to their accumulated experience and understanding of the impact of effective leadership on their professional growth and innovative capabilities.

Moreover, the study highlights the importance of organizational support in fostering an innovative climate. Younger employees, particularly those in the 25-35 years age group, are more responsive to such support, indicating that institutions must be mindful of the

evolving expectations of their workforce. This is crucial for maintaining a dynamic and innovative environment that encourages creativity and continuous improvement across all levels of the organization.

In conclusion, transformational leadership plays a vital role in enhancing employees' innovative performance, job satisfaction, and perception of organizational support for innovation in colleges across Punjab. To maximize these benefits, educational institutions should focus on developing leadership programs that are inclusive and responsive to the varying needs of their employees across different age groups. By doing so, they can create a more innovative, supportive, and satisfied workforce, ultimately leading to better educational outcomes and institutional success, transformational leadership and innovative performance, suggesting that experience and maturity may influence these perceptions. These findings underscore the importance of tailoring leadership approaches to cater to the diverse needs of employees across different age groups to foster a more innovative and supportive work environment in colleges across Punjab, Pakistan.

Future recommendations

To further advance research on the role of transformational leadership in employees' innovative performance, several potential directions for future studies are outlined. First, longitudinal studies could provide a more in-depth understanding of how transformational leadership impacts innovation over time, tracking changes in employee performance and leadership behaviours. A longer-term view could reveal patterns of leadership effectiveness that are not immediately visible in cross-sectional studies.

Second, comparative studies across different sectors (e.g., private vs. public, urban vs. rural colleges) could uncover variations in how transformational leadership influences innovation, helping to generalize the findings beyond Punjab's educational sector. Cross-cultural research would also be beneficial, exploring how cultural dimensions interact with leadership and innovation.

Another direction could involve examining mediating or moderating variables—such as organizational support, employee engagement, or job satisfaction—to better understand the mechanisms by which leadership fosters innovation. Additionally, employing multi-source data from peers or supervisors instead of relying solely on self-reports could mitigate biases and yield more comprehensive insights.

Finally, experimental or intervention-based studies that assess the effectiveness of leadership development programs in enhancing transformational leadership behaviours could contribute practical recommendations for educational leadership policies.

References

A., W., & N, P. (2015). Analyzing the relationship between transformational and transactional leadership style on employee performance in pt. tx bandung. *Journal of Business and Management*, *4*(5), 561–568.

Abbas, S., Hisham-Ul-Hassan, K., & Raza, S. (2024). The role of transformational leadership on employees innovative performance in colleges in punjab. *INTERNATIONAL JOURNAL OF HUMAN AND SOCIETY*, *4*(1), 46-63.

Alghazo, A. M., & Al-Anazi, M. (2016). The impact of leadership style on employee's motivation. *International Journal of Economics and Business Administration*, *2*(5), 37-44.

Avolio, B. J., & Yammarino, F. J. (2013). *Transformational and charismatic leadership: The road ahead*. Leeds, EN: Emerald Group Publishing.

Babatunde, O., & Emem, I. (2015). The impact of leadership style on employee's performance in an organization. *Public Policy and Administration Research*, *5*(1), 193-206.

Baldegger, U., & Gast, J. (2016). On the emergence of leadership in new ventures. *International Journal of Entrepreneurial Behavior & Research*, *22*(6), 933-957.

Baregheh, A., Rowley, J., & Sambrook, S. (2009). Towards a multidisciplinary definition of innovation. *Management Decision*, *47*(8), 1323-1339.

Bass, B. M., & Bass, R. (2009). *The Bass handbook of leadership: Theory, research, and managerial applications*. Simon and Schuster.

Breevaart, K., Bakker, A., Hetland, J., Demerouti, E., Olsen, O. K., & Espevik, R. (2014). Daily transactional and transformational leadership and daily employee engagement. *Journal of Occupational and Organizational Psychology*, *87*(1), 138-157.

Cao, T. T., & Le, P. B. (2022).
European Journal of Management and Business Economics, title = Impacts of transformational leadership on organizational change capability: A two-path mediating role of trust in leadership(ahead-of-print).

Chaudhry, A. Q., & Javed, H. (2012). Impact of transactional and laissez faire leadership style on motivation. *International Journal of Business and social science*, *3*(7).

Donkor, F., Sekyere, I., & Oduro, F. A. (2022). Transformational and transactional leadership styles and employee performance in public sector organizations in Africa: A comprehensive analysis in Ghana. *Journal of African Business*, *23*(4), 945-963.

Ergeneli, A., Gohar, R., & Temirbekova, Z. (2007). Transformational leadership: Its relationship to culture value dimensions. *International Journal of Intercultural Relations*, *31*(6), 703-724.

Field, A. (2013). *Discovering statistics using ibm spss statistics.* sage, Oaks, California.

Fullan, M. (2007). *Leading in a culture of change*. Hoboken, NJ: John Wiley & Sons.

G., Y. (2013). *Leadership in organizations* (Tech. Rep.). U.S: Pearson Prentice Hall.

Grant, R. M. (2012). Shifts in the world economy: The drivers of knowledge management. In *Knowledge horizons* (p. 27-53). Routledge.

Gu, Q., Tang, T. L.-P., & Jiang, W. (2024). Does moral leadership enhance employee creativity? employee identification with the leader and leader-member exchange (lmx) as two mediators: Discovery from china's emergent market. In *Monetary wisdom* (p. 277-294). Elsevier.

Heneman, K., Block-Joy, A., Zidenberg-Cherr, S., Donohue, S., Garcia, L., Martin, A., … Steinberg, F. M. (2005). A "contract for change" increases produce consumption in low-income women: a pilot study. *Journal of the American Dietetic Association*, *105*(11), 1793-1796.

Hurduzeu, R. (2015). The impact of leadership on organizational performance. *SEA-Practical Application of Science*, *3*(07), 289-293.

Janssen, O. (2000). Job demands, perceptions of effort-reward fairness and innovative work behaviour. *Journal of Occupational and organizational psychology*, *73*(3), 287-302.

Jiang, W., Zhao, X., & Ni, J. (2017). The impact of transformational leadership on employee sustainable performance: The mediating role of organizational citizenship behavior. *Sustainability*, *9*(9), 1567.

Judge, T. A., & Piccolo, R. F. (2004). Transformational and transactional leadership: A meta-analytic test of their relative validity. *Journal of Applied Psychology*, *89*(5), 755.

Karimi, S., Ahmadi Malek, F., Yaghoubi Farani, A., & Liobikienė, G. (2023). The role of transformational leadership in developing innovative work behaviors: The mediating role of employees' psychological capital. *Sustainability*, *15*(2), 1267.

Khalili, A. (2016). Linking transformational leadership, creativity, innovation, and innovation-supportive climate. *Management decision*, *54*(9), 2277-2293.

Kremer, H., Villamor, I., & Aguinis, H. (2019). Innovation leadership: Best-practice recommendations for promoting employee creativity, voice, and knowledge sharing. *Business horizons*, *62*(1), 65-74.

Le, T. T., & Le, B. P. (2021). Mediating role of change capability in the relationship between transformational leadership and organizational performance: An empirical research. *Psychology Research and Behavior Management*, 1747-1759.

Leithwood, K., & Jantzi, D. (2000). The effects of transformational leadership on organizational conditions and student engagement with school. *Journal of educational administration*, *38*(2), 112-129.

Likert, R. (1932). A technique for the measurement of attitudes. *Archives of psychology*, *22*(140), 1-55.

Lim, B., & Ployhart, R. E. (2004). Transformational leadership: Relations to the five-factor model and team performance in typical and maximum contexts. *Journal of applied psychology*, *89*(4), 610.

Lim, J. Y., & Moon, K.-K. (2022). Transformational leadership and employees' helping and innovative behaviors: Contextual influences of organizational justice. *International Journal of Manpower*, *43*(4), 1033-1053.

Lin, Q. (2023). Transformational leadership and innovative work behavior: The role of identification, voice and innovation climate. *International Journal of Hospitality Management*, *113*, 103521.

Lor, W., & Hassan, Z. (2017). The influence of leadership on employee performance among jewellery artisans in malaysia. *International Journal of Accounting & Business Management*, *5*(1), 14-33.

Magasi, C. (2021). The role of transformational leadership on employee performance: A perspective of employee empowerment. *European Journal of Business and Management Research*, *6*(6), 21-28. doi:https://doi.org/10.24018/ejbmr.2021.6.6.1137

Mahdinezhad, M., Bin Suandi, T., bin Silong, A. D., & Omar, Z. B. (2013). Transformational, transactional leadership styles and job performance of academic leaders. *International Education Studies*, *6*(11), 29-34.

Mansoor, A. H. D. . B. H., A. (2020). The impact of transformational leadership on organizational innovation in higher education sector of pakistan. *Pakistan Journal of Social Sciences*, *40*(1), 251-265. doi:https://doi.org/10.1177/2158244019899085

Masi, R. J., & Cooke, R. A. (2000). Effects of transformational leadership on subordinate motivation, empowering norms, and organizational productivity. *The International Journal of Organizational Analysis*, *8*(1), 16-47.

Mumford, M. D., Scott, G. M., Gaddis, B., & Strange, J. M. (2002). Leading creative people: Orchestrating expertise and relationships. *The Leadership Quarterly*, *13*(6), 705-750.

Ng, T. W. (2017). Transformational leadership and performance outcomes: Analyses of multiple mediation pathways. *The leadership quarterly*, *28*(3), 385-417.

Northouse, P. (n.d.). *Leadership: Theory and practice*. Oaks, CA: Sage publications.

Northouse, P. (2013). *Leadership: Theory and practice*. Oaks, CA: Sage publications.

Northouse, P. G. (2021). *Leadership: Theory and practice*. Oaks, CA: Sage publications.

Novitasari, D., Supiana, N., Supriatna, H., Fikri, M. A. A., & Asbari, M. (2021). The role of leadership on innovation performance: Transactional versus transformational style. *JIMFE (Jurnal Ilmiah Manajemen Fakultas Ekonomi)*, *7*(1), 27-36.

Odumeru, J. A., & Ogbonna, I. G. (2013). Transformational vs. transactional leadership theories: Evidence in literature. *International review of management and business research*, *2*(2), 355.

OECD. (2017). *Measuring innovation in education. a journey to the future.* Retrieved from https://shorturl.at/yHKKC

Ouakouak, M. L., & Ouedraogo, N. (2017). Antecedents of employee creativity and organisational innovation: An empirical study. *International Journal of Innovation Management*, *21*(07), 1750060.

Pallant, J. (2020). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS*. England, UK: Routledge.

Prasad, B., & Junni, P. (2016). CEO transformational and transactional leadership and organizational innovation: The moderating role of environmental dynamism. *Management Decision*, *54*(7), 1542-1568.

Saif, N., Goh, G. G. G., Rubin, A., Shaheen, I., Murtaza, M., et al. (2024). Influence of transformational leadership on innovative work behavior and task performance of individuals: The mediating role of knowledge sharing. *Heliyon*, *10*(11).

Sethibe, T., & Steyn, R. (2015). The relationship between leadership styles, innovation and organisational performance: A systematic review. *South African Journal of Economic and Management Sciences*, *18*(3), 325-337.

Shafi, M., Lei, Z., Song, X., Sarker, M. N. I., et al. (2020). The effects of transformational leadership on employee creativity: Moderating role of intrinsic motivation. *Asia Pacific Management Review*, *25*(3), 166-176.

Singh, K. (2015). Leadership Style and Employee Productivity: A Case Study of Indian Banking Organizations. *Journal of Knowledge Globalization*, *8*(2).

Singh, R., & Rani, A. (2017). *Human behaviour: in group, emotional intelligence & organisational culture*. Chennai, IN: Notion Press.

Singh, S., Khan, E., & Rehman, A. (2023). The impact of transformational leadership on innovative work behavior, the mediating role of employee engagement and psychological capital in Karachi hospitals. *International Journal of Business and Economic Affairs*, *8*(3), 112-126.

Stajkovic, A., & Sergent, K. (2019). *Management and leadership, what can mbd do in my workday*. Madison, WI: First Research Paradigms Applied.

Ting, I. W. K., Sui, H. J., Kweh, Q. L., & Nawanir, G. (2021). Knowledge management and firm innovative performance with the moderating role of transformational leadership. *Journal of Knowledge Management*, *25*(8), 2115-2140.

To, M. L., Herman, H., & Ashkanasy, N. M. (2015). A multilevel model of transformational leadership, affect, and creative process behavior in work teams. *The leadership quarterly*, *26*(4), 543-556.

Uddin, M. A., Fan, L., & Das, A. K. (2016). A study of the impact of transformational leadership, organizational learning, and knowledge management on organizational innovation. *Management dynamics*, *16*(2), 42-54.

Vincent-Lancrin, S. (2019). What has changed in the classroom? educational research and innovation, oecd publishing, paris. In (chap. Educational Research and Innovation). Paris: OECD Publishing.

Wang, C.-J., Tsai, H., & Tsai, M. (2014). Linking transformational leadership and employee creativity in the hospitality industry: The influences of creative role identity, creative self-efficacy, and job complexity. *Tourism management*, *40*, 79-89.

Wang, G., Oh, I.-S., Courtright, S. H., & Colbert, A. E. (2011). Transformational leadership and performance across criteria and levels: A meta-analytic review of 25 years of research. *Group & organization management*, *36*(2), 223-270.

Wei, X., & He, Y. (2022). [retracted] exploration on the role of transformational leadership linkage psychological empowerment in stimulating employees' innovation behavior in an uncertain environment: Based on entrepreneurship perspective. *Occupational Therapy International*, *2022*(1), 9259180.

Whipple III, W. A. (2023). *Unlocking the gates of change: Exploring the impact of transformational leadership on openness toward organizational change* (Tech. Rep.). England, UK: University of New Hampshire.

Wilkes, L., Cross, W., Jackson, D., & Daly, J. (2015). A repertoire of leadership attributes: An international study of deans of nursing. *Journal of Nursing Management*, *23*(3), 279-286.

Wofford, J. C., Whittington, J. L., & Goodwin, V. L. (2001). Follower motive patterns as situational moderators for transformational leadership effectiveness. *Journal of Managerial Issues*, 196--211.

Yang, H., & Yang, J. (2019). The effects of transformational leadership, competitive intensity and technological innovation on performance. *Technology Analysis & Strategic Management*, *31*(3), 292-305.

Yasin, G., Nawab, S., Bhatti, K. K., & Nazir, T. (2014). Relationship of intellectual stimulation, innovations and SMEs performance: Transformational leadership a source of competitive advantage in SMEs. *Middle-East Journal of Scientific Research*, *19*(1), 74-81.

Yukl G. A., . G. W. L. (2020). *Leadership in organizations.* (Tech. Rep.). Boston: Pearson Education, Inc.,.