



An Empirical Study on the Influence of Transformational Leadership on Innovation and Knowledge Sharing: A Case Study of Academic Faculty in Bangalore, India.

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Abstract: This study delves into the intricate dynamics of the relationship between transformational leadership and the levels of knowledge-sharing and innovation experienced by faculty in academic settings. Leadership within educational institutions serves as a linchpin, influencing faculty members through directional guidance, strategic plan implementation, and motivational initiatives. Transformational leadership emerges as a prominent and widely adopted style within the academic milieu, known for its efficacy in inspiring elevated performance, presenting intellectual challenges, and attentively addressing the diverse needs of faculty members.

The research underscores the profound impact of transformational leadership on cultivating a culture of knowledge-sharing and innovation within educational contexts. Through a comprehensive exploration of the subject, the study reveals that the transformative leadership style serves as a catalyst, significantly accelerating both innovation and knowledge-sharing among academic faculty. The implications of these findings extend beyond theoretical considerations, offering practical insights into the enhancement of educational environments.

This article contributes to the scholarly discourse and presents a nuanced understanding of the role of transformational leadership in fostering innovation and knowledge-sharing within academic institutions. The robust empirical evidence and insightful analyses presented in this study make it a valuable addition to the body of knowledge, suitable for publication in Scopus-indexed journals where it can further enrich academic discussions and contribute to advancing leadership theories in educational settings.

Keywords: Transformational leadership (TL), Innovation, Knowledge Sharing

1. Introduction

The landscape of education in India, and more specifically in Bangalore, is navigating a complex terrain marked by unique challenges that demand exceptional leadership. As a prominent hub for private educational institutions, Bangalore plays a pivotal role in the nation's growth and development. Government initiatives, coupled with the active participation of private schools, underscore a concerted effort to cultivate and enhance human resources through education. The educational policy of the region is strategically geared towards restructuring the education system, aligning it with national development plans, and placing a strong emphasis on scientific, professional, and technical studies. In light of these dynamics, this investigation delves into the intricate interplay of transformational leadership, knowledge sharing, and innovation as pivotal elements contributing to the dynamic growth of academic settings in Bangalore.

2. Review of Related Literature:

2.1 Transformational Leadership:

Transformational leadership, as conceptualized by Burns (1978), involves empowering an organization to undergo significant transformations, inspiring individuals, and elevating their aspirations toward a collective goal. Robert N. (1985) emphasizes that transformational leadership emerges as the preferred approach, particularly in the challenging landscape of twenty-first-century schools. Leithwood Kenneth (1992) further asserts that this leadership style positively facilitates change in school reorganization initiatives. Bernard M. Bass (2000) characterizes transformational leaders as those who transcend personal interests for the greater good of their group, organization, or society. The transformative impact of such leadership lies in its ability to generate both personal and professional commitment from subordinates, addressing higher-level needs like self-esteem and self-actualization (Bass, 1985). Building upon this foundation, the concept of transformational leadership, introduced by Bass (1985), aligns closely with the potential development process within an organization. Therefore, educational institutions' leadership must embody transformational leadership to foster a positive environment conducive to knowledge management processes and innovative teaching and learning practices in teacher training institutes (Supermane, 2019).

2.2 Innovation:

Nelson and Winter (1977, as cited in Alrowwad et al., 2020) define innovation as "the initiation, adoption, and implementation of ideas or activities that are new to the adopting organization." The literature underscores that innovation significantly influences organisations' survival, competitiveness, and growth (Alrowwad et al., 2020). Grant (2000) contributes to the definition by stating that innovation commences when an organization develops new ideas and applies tested outcomes for improved performance.

2.3 Knowledge Sharing:

Knowledge sharing, illuminated by past literature, emerges as a dynamic process of exchanging knowledge acquired through work or other means within an organizational setting, creating meaning and sense in new environments for enhanced outcomes. Park & Kim (2015) describe knowledge sharing as "the provision or receipt of task information, feedback, and know-how to help others and to collaborate with others to solve problems or develop new ideas, products, or procedures." Van den Hooff and de Ridder (2004), as cited in Masa'deh et al. (2016), define knowledge sharing as "the process where individuals reciprocally exchange their (implicit and explicit) knowledge and together create new knowledge." In the school setting, knowledge sharing manifests as a synergistic process where teachers gain more than they contribute. Whether shared through writing or in dialogues with colleagues, knowledge sharing fosters an environment where ideas are refined, perspectives are broadened, and collective insights contribute to the continuous improvement of educational practices (Chaudhry & Sivakamasundari, 2004).

2.4 Relationship between the Variables and Research Hypotheses:

2.4.1 Transformational Leadership and Innovation:

Numerous studies underscore the pivotal role of leadership, particularly transformational leadership (TL), as a key indicator of innovation (Jung et al., 2006). TL has been identified as a powerful driver of employees' capabilities and motivation for innovative behaviours (Bass, 1985; Basu and Green, 1997; Conger, 1999, cited by Choi et al., 2016). Transformational leadership not only establishes a positive environment but also fosters the abilities necessary to stimulate innovation capability (Le & Lei, 2019). In the ever-changing landscape of the twenty-first century, leadership is essential for organizational survival and competitiveness, urging leaders to adapt, take the initiative, and cultivate leadership and innovation skills (Buekens, 2013; Vargas, 2015, as cited in Li et al., 2018). When imbued with innovative traits, the organisational culture promotes values such as

learning, development, and participative decision-making (Hurley and Hult, 1998, as cited in Li et al.). Transformational leadership has exhibited its influence on innovative academic settings globally, offering valuable insights and guidelines for applying transformational leadership traits in fostering organizational innovation within academic institutions (Li et al., 2018).

2.4.2 Transformational Leadership and Knowledge Sharing:

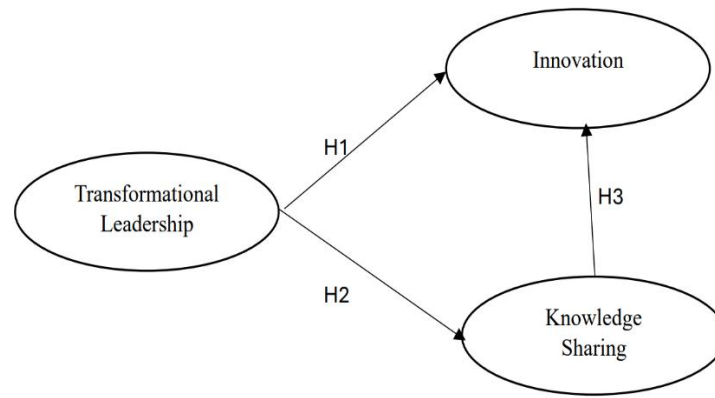
The substantial relationship between transformational leadership and knowledge sharing is evident in previous research, extending beyond organizational contexts. A study in the Jordanian Higher Council of Youths emphasizes that organizational performance relies not only on tangible assets but significantly on human knowledge, underscoring the connection between transformational leadership and knowledge sharing (Masa'deh et al.). Leaders, acting as role models and establishing incentives for knowledge-sharing, play a crucial role in accelerating the knowledge-sharing process (Masa'deh et al., 2016). This understanding applies to the academic scenario, where the school principal serves as a catalyst for knowledge-sharing behaviours. Transformational leadership has consistently demonstrated its ability to shape an informed and supportive culture, influencing employees' knowledge-sharing behaviours through the enhancement of values, assumptions, and beliefs associated with knowledge (Le & Lei, 2017). Leadership behaviours and traits significantly impact the promotion or hindrance of knowledge-sharing behaviours among employees.

2.4.3 Innovation and Knowledge Sharing:

Organizations grappling with internal and external challenges seek innovative approaches to adapt, leading to a realization that knowledge sharing among staff members is instrumental in achieving innovation. Leadership behaviours, particularly transformational leadership, strongly influence the organizational environment and, by extension, knowledge-sharing behaviours among faculty members. Empowering institutions to assimilate, impart, and utilize knowledge innovatively, leaders play a vital role in cultivating a conducive environment for innovation (Mushtaq and Bokhari, 2011, as cited in Masa'deh et al.). Studies consistently demonstrate the positive influence of TL on employees' innovative behaviour (Bass, 1991; Jung et al., 2003). Research confirms a significant relationship between TL, knowledge sharing, and innovative employee behaviour (Choi et al., 2016). A study by Le and Lei (2019) further establishes a positive relationship between transformational leadership and knowledge sharing, contributing to the promotion of innovation. Knowledge-sharing emerges as a crucial component influencing innovation capability in organizations, with leaders playing a pivotal role in supporting knowledge-sharing activities and vibrant skills (Le et al., 2020). A study in Chinese firms emphasizes the positive correlation between knowledge sharing and innovative performance, underscoring the vital role of knowledge-based dynamic capabilities in driving innovation (Han & Chen, 2018). Schools, as organizations, can benefit from focusing on supporting knowledge-sharing activities, fostering innovation capability, and recognizing the nuanced dynamics of knowledge sharing and innovation in the education sector (Z. Yang et al., 2018).

2.5 Research Framework

Drawing from an in-depth examination of existing literature, the hypotheses for this study were formulated, laying the foundation for developing the conceptual framework. The comprehensive review of past literature provided valuable insights into the relationships between key variables, guiding the establishment of hypotheses that underpin the theoretical framework guiding this research. The ensuing conceptual framework encapsulates the interplay between transformational leadership, knowledge sharing, and innovation, offering a structured and theoretically grounded basis for investigating these dynamic relationships within the context of academic settings.



3. Research Method

Utilizing a survey methodology, the researcher gathered data from a sample of 509 teachers representing ten secondary and higher secondary academic institutions in Bangalore, India. The research employs quantitative methods and statistical tools, including confirmatory factor analysis and structural equation modelling, to analyze the collected data. The study categorizes institutions based on size—small, medium, and large—and systematically examines the relationships among transformational leadership, knowledge sharing, and innovation.

3.1 Respondents and Sampling Procedure:

The participants in this study comprise teachers from ten English-medium private schools in Bangalore, India. A survey questionnaire designed to measure the constructs of transformational leadership, knowledge sharing, and innovation was administered to the respondents.

3.2 Collection of Data and Data Collection Technique:

Data were collected through both primary and secondary sources. The pre-designed questionnaire was administered using Google Forms, offering an efficient and streamlined data collection technique.

3.3 Variables, Scale Items, and Measurement Scales:

Three primary constructs were identified and measured: Transformational Leadership, Innovation, and Knowledge Sharing. The study explores teachers' experiences with transformational leadership through carefully crafted items within each scale.

Measurement Scale: A 5-level agreement Likert scale (ranging from Strongly Agree to Strongly Disagree) was employed to administer the questionnaire, providing a nuanced assessment of participants' perceptions and experiences.

3.3.1 Transformational Leadership: (Griffith, 2004)

Understanding School Goals: My Principal comprehensively understands school goals and effectively communicates strategies to achieve them.

Providing Direction: The Principal offers a clear sense of direction by aligning actions with school goals.

Encouraging Instruction Discussions: The Principal fosters an environment where staff members are encouraged to engage in discussions about instructional methods.

Promoting Collaboration: The Principal actively promotes teamwork and collaboration among the staff.

Open Communication: I feel comfortable engaging in open and candid discussions with the Principal regarding any concerns.

Respectful Treatment: The Principal consistently treats me with respect.

Positive Consideration of Suggestions: The Principal positively considers and values the suggestions put forth by staff members.

Recognition of Good Performance: Recognition is given by the Principal when I perform well in my role.

Encouraging Innovation: The Principal actively encourages the generation of new ideas for enhancing the learning experience.

Opportunities for Development: Opportunities to contribute to the development of a school improvement plan are provided by the Principal.

3.3.2 Innovation: (Sattayaraksa & Boon-itt, 2018)

Emphasis on Innovation: The Principal underscores the importance of innovation and growth within the school.

Strategic Prioritization: Strategic emphasis is placed on integrating new teaching techniques into educational practices.

Focus on Student Results and Enrollments: The Principal directs attention toward innovating areas related to student outcomes and increasing enrolments.

Collaboration with External Partners: Collaboration with external partners, including networking with other schools and the community, is actively promoted by the Principal for sourcing innovative ideas.

Transformation of Ideas into Activities: The Principal encourages the translation of innovative ideas into meaningful classroom activities.

Exploration of New Methods: Assistance is provided by the Principal to explore new working methods, techniques, or instruments for achieving optimal results.

3.3.3 Knowledge Sharing: (Liao et al., 2007 & Wickramasinghe, 2015)

Encouragement of Skill Sharing: The Principal actively encourages me to share newly acquired skills with my colleagues.

Opportunities for Information Discussion: Regular opportunities are provided by the Principal for faculty members to discuss and share new information, facilitating mutual learning.

Valuing Knowledge Sharing: The Principal recognizes the importance of sharing knowledge among colleagues within the school.

Promotion of Skill Sharing: When requested, the Principal actively promotes the sharing of working skills among colleagues.

Establishment of Information Systems: Adequate systems for collecting, storing, and sharing information among faculty members are maintained by school leadership.

Continuous Review of Best Practices: School leadership consistently reviews and updates its best practices.

Utilization of Existing Knowledge: The Principal effectively utilizes the existing knowledge within the staff to make informed decisions in the workplace.

4. Analysis and Interpretations:

The effectiveness of Confirmatory Factor Analysis (CFA) in assessing the envisaged factor structure has been endorsed by numerous scholars, establishing its recognition as a robust statistical method (Gallagher & Brown, 2013). This study uses Confirmatory Factor Analysis (CFA) to scrutinize the collected valid data based on seven predefined criteria. Skewness and kurtosis are utilised as measures to assess data normality among the 509 survey participants. Values approaching zero for both statistics signify a distribution resembling that of a normal distribution, indicating the data's suitability for subsequent statistical examinations. Therefore, it is affirmed that the study ensures the data's appropriateness for further statistical analyses.

The CFA outcomes validate that the proposed model aligns well across diverse indicators. The CMIN/DF ratio denotes a favourable fit, while the Goodness of Fit Index (GFI) and Adjusted Goodness of Fit Index (AGFI) propose satisfactory compatibility with the data. Moreover, the Normed Fit Index (NFI) signifies a superior fit, and both the Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) underscore the model's adequacy and fit, respectively. The fourth metric, the Root-Mean-Square Error of Approximation (RMSEA), gauges the incongruity between the model and the observed covariance matrix, with lower values indicating a more desirable fit. Structural equation modelling was used (Costa 2018) to further detect and confirm the research's detailed and specific empirical data. These findings affirm that the model conforms effectively to the empirical data.

4.1. Analysis of the Proposed Model in the Study Using Structural Equation Modelling

Table 4.1: Table Displaying the Descriptive Statistics of Various Constructs Under Study

Code	mean	sd	Level of Agreement
TL1	4.55	0.7	Strongly Agree
TL2	4.51	0.63	Strongly Agree
TL3	4.33	0.7	Strongly Agree
TL4	4.58	0.61	Strongly Agree
TL5	4.29	0.86	Strongly Agree
TL6	4.6	0.57	Strongly Agree
TL7	4.22	0.74	Strongly Agree
TL8	4.25	0.75	Strongly Agree
TL9	4.5	0.65	Strongly Agree
TL10	4.39	0.72	Strongly Agree
Total	4.42	0.69	Strongly Agree
Inn 1	4.52	0.57	Strongly Agree
Inn 2	4.43	0.63	Strongly Agree
Inn 3	4.19	0.76	Agree
Inn 4	4.42	0.66	Strongly Agree
Inn 5	4.4	0.65	Strongly Agree
Inn 6	4.49	0.62	Strongly Agree
Total	4.41	0.64	Strongly Agree
Kn_Sh_1	4.37	0.67	Strongly Agree

Kn_Sh_2	4.34	0.69	Strongly Agree
Kn_Sh_3	4.39	0.63	Strongly Agree
Kn_Sh_4	4.39	0.64	Strongly Agree
Kn_sh_5	4.3	0.7	Strongly Agree
Kn_Sh_6	4.33	0.67	Strongly Agree
Kn_Sh_7	4.38	0.63	Strongly Agree

4.2. Outer model/Measurement model

Table 4.2: Table Displaying the Outer Model

	Innovation	Knowledge sharing	Transformational leadership
Inn1	0.724		
Inn2	0.731		
Inn3	0.705		
Inn4	0.816		
Inn5	0.826		
Inn6	0.829		
KnSh1		0.818	
KnSh2		0.859	
KnSh3		0.854	
KnSh4		0.837	
KnSh5		0.802	
KnSh6		0.825	
KnSh7		0.812	
TL1			0.544
TL2			0.718
TL3			0.659
TL4			0.660
TL5			0.700
TL6			0.767
TL7			0.790
TL8			0.694
TL9			0.769
TL10			0.795

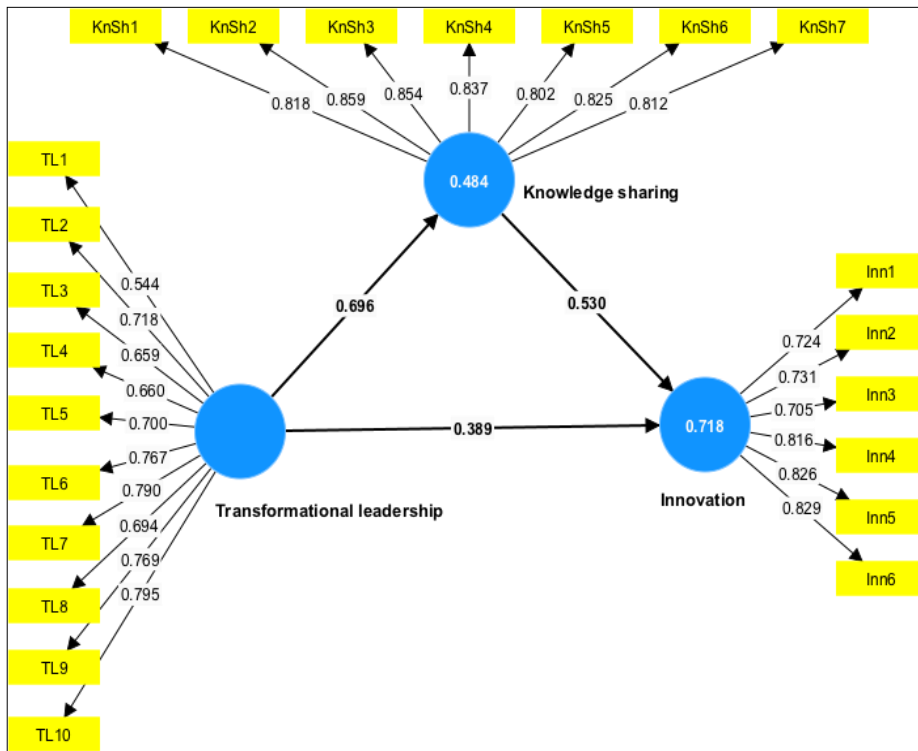


Figure 4.1: Outer Model/Measurement model

4.3: Construct reliability and validity

Table 4.3: Construct Reliability and Validity

	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
Innovation	0.865	0.899	0.598
Knowledge sharing	0.925	0.939	0.689
Transformational leadership	0.891	0.911	0.509

Table 4.4: Fornell-Larcker criterion: Discriminant validity

	Innovation	Knowledge sharing	Transformational leadership
Innovation	0.774		
Knowledge sharing	0.800	0.830	
Transformational leadership	0.757	0.696	0.713

4.5: Model Quality metrics

Table 4.5: R-square results

	R-square	R-square adjusted
Innovation	0.718	0.717
Knowledge sharing	0.484	0.483

Table 4.6: f-square results

	f-square
Knowledge sharing -> Innovation	0.512
Transformational leadership -> Innovation	0.276
Transformational leadership -> Knowledge sharing	0.940

4.7: Path coefficients: Direct effect of Innovation, Transformational Leadership and Knowledge Sharing.

Table 4.7: Mean, STDEV, T values, p values

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Knowledge sharing -> Innovation	0.530	0.528	0.047	11.299	0.000**
Transformational leadership -> Innovation	0.389	0.390	0.047	8.319	0.000**
Transformational leadership -> Knowledge sharing	0.696	0.699	0.027	25.691	0.000**

**P < 0.01, Significant

4.8: Specific Indirect effect/ Mediating effect of knowledge sharing between TL and Innovation

Table 4.8: Results of the specific indirect effect

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Transformational leadership -> Knowledge sharing -> Innovation	0.369	0.369	0.038	9.725	0.000**

**P < 0.01, Significant

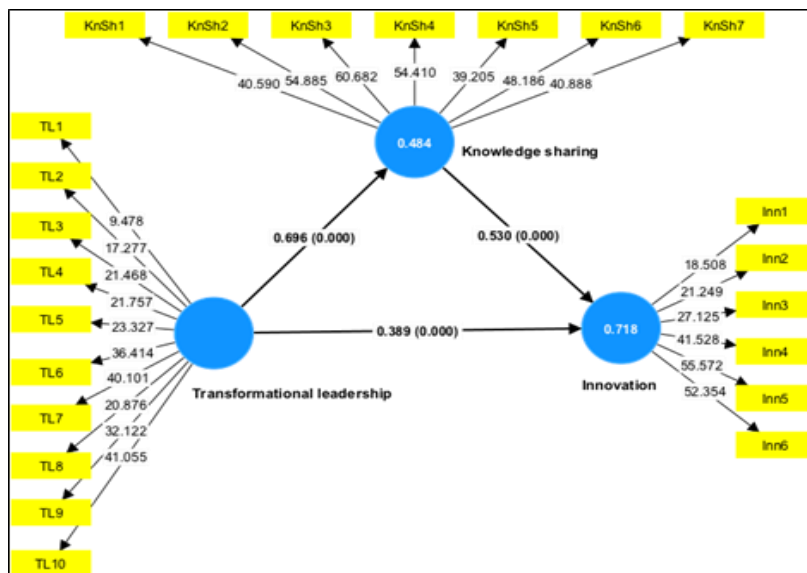


Figure 4.2: Structural model

5. Hypothesis Testing:

The primary aim of the study is to scrutinize the potential impact of transformational leadership on enhancing teacher effectiveness. This involves delving into various variables to gain insights into the prevailing dynamics of private schools in Bangalore, with a particular emphasis on faculty perceptions of leadership influences.

Throughout the study, statistical tests robustly substantiate all three hypotheses. These findings affirm the existence of direct and noteworthy relationships between transformational leadership and Innovation (H1), transformational leadership and Knowledge Sharing (H2), and Knowledge Sharing and Innovation (H3).

Table 5.14: Hypotheses Testing Result of the Structural Model

Hypothesis	path coefficient (β)	t-value	p-value	Testing result
H ₀₁ : There is a significant relationship between transformational Leadership and Innovation.	0.471	8.29*	0.00*	Supported
H ₀₂ : There is a significant relationship between transformational leadership and knowledge sharing.	0.582	4.34*	0.00*	Supported
H ₀₃ : There is a significant relationship between knowledge sharing and Innovation.	0.341	11.32*	0.00*	Supported

Hypothesis 1:

H₀: There is no significant relationship between transformational leadership and Innovation.

H₁: There is a significant relationship between transformational leadership and Innovation.

The observed significant relationship between transformational leadership and Innovation aligns with previous research findings. The primary hypothesis posited in this study, aiming to establish a direct and significant relationship between transformational leadership and Innovation, is supported. Statistical interpretations derived from bootstrapping results indicate a t-value of 8.29 and a p-value of 0.00. These values surpass the respective threshold values of 1.96 and 0.01. With a p-value less than 0.01, signifying significance at a 1% level, we infer a substantial relationship between transformational leadership and Innovation.

Hypothesis 2:

H₀: There is no significant relationship between transformational leadership and knowledge sharing.

H₁: There is a significant relationship between transformational leadership and knowledge sharing.

The noted significant relationship between transformational leadership and knowledge sharing aligns with prior research in this domain. The hypothesis posited in this study to establish a direct and significant relationship between transformational leadership and knowledge sharing is substantiated. Bootstrapping results reveal a t-value of 4.34 and a p-value of 0.00. These values surpass the threshold values, with the p-value less than 0.01, indicating significance at a 1% level. Therefore, we conclude that there is a significant relationship between transformational leadership and knowledge sharing.

Hypothesis 3:

H₀: There is no significant relationship between knowledge sharing and Innovation.

H₁: There is a significant relationship between knowledge sharing and Innovation.

The current study underscores the significant relationship between knowledge sharing and innovation. Bootstrapping results yield a t-value of 11.32 and a p-value of 0.00, surpassing the threshold values. With a p-value less than 0.01, indicating significance at a 1% level, we infer a substantial relationship between knowledge sharing and Innovation.

6. Recommendations:

The implications derived from the findings of this study hold practical significance on multiple fronts. Primarily, the results underscore a compelling need for an increased presence of transformational leaders within academic institutions. The study illuminates the substantial role of transformational leadership in fostering innovation across educational establishments in Bangalore, India. Given the positive correlation between transformational leadership and faculty innovation, as well as knowledge-sharing behaviours, principals' adoption of this leadership style is advocated to enhance their influence on faculty members.

Existing literature, coupled with the study's outcomes, consistently highlights the affirmative influence of transformational leadership on innovation, underscoring its pivotal role in steering organizational success and sustainability. Moreover, the study emphasizes the intertwined significance of transformational leadership and knowledge sharing in driving innovation. The findings accentuate that transformational leaders cultivate a culture of knowledge sharing, wielding a profound influence on generating novel ideas and processes, particularly during challenging periods. It is noteworthy that the study was conducted amidst the challenges posed by the COVID-19 pandemic.

In this context, the study underscores the critical role of transformational leadership in fostering a culture of knowledge sharing, thereby propelling faculty improvement across diverse sectors within academic institutions. The unequivocal revelation from the study's findings is that explicit knowledge sharing exerts a positive impact on the innovation capability of faculty members, leading to enhanced overall performance. Consequently, the study advocates for the encouragement of transformational leadership in academic settings, positing it as a catalyst for realizing the optimal potential within the system.

7. Limitations:

The research exclusively focused on secondary and higher secondary educational settings, presenting an avenue for future exploration of similar relationships in higher education and diverse industries within Bangalore. While the study provides valuable insights within its specified scope, there remains untapped potential to extend these investigations into broader educational domains and various sectors.

Additionally, it is essential to acknowledge the study's limitation in geographical scope, as it concentrated solely on one specific city in India. Consequently, caution should be exercised in generalizing the findings to other cities or states characterized by distinct economic structures and cultural contexts. Recognizing this limitation prompts the need for further research encompassing a more diverse range of locales to ensure a comprehensive understanding of the dynamics between transformational leadership, knowledge sharing, and innovation in varied regional settings.

8. Conclusion:

This study embarked on a comprehensive exploration of the intricate dynamics within the educational landscape of Bangalore, India. The research, focused on the interplay of transformational leadership, knowledge sharing, and innovation, sheds light on the vital role these elements play in the growth and development of academic institutions, particularly in the private sector. The findings of this investigation hold paramount significance in shaping the trajectory of educational leadership and practices.

The study substantiates the critical need for a surge in transformational leaders within academic institutions, emphasizing Bangalore's pivotal role in the nation's educational landscape. Transformational leadership, identified as a catalyst for fostering innovation and knowledge sharing, emerges as a linchpin for steering organizational success and sustainability. The positive correlation observed between transformational leadership, faculty innovation, and knowledge-sharing behaviours underscores the transformative impact of this leadership style on educational institutions.

Notably, the study's relevance is underscored by its conduct amidst the challenging backdrop of the COVID-19 pandemic. The role of transformational leadership in cultivating a culture of knowledge sharing, thereby propelling faculty improvement, gains heightened significance during times of unprecedented challenges. The

study advocates for the endorsement of transformational leadership in academic settings, positioning it as a driving force for realizing the optimal potential within the educational system.

However, the study does acknowledge its limitations. Focused solely on secondary and higher secondary educational settings in Bangalore, there is a call for future research to expand these investigations into higher education and diverse industries within the city. Additionally, the study's geographical concentration prompts caution in generalizing findings to other cities or states with distinct economic and cultural contexts. This recognition underscores the necessity for future research to encompass a broader range of locales, ensuring a more nuanced understanding of the relationships between transformational leadership, knowledge sharing, and innovation across diverse regional settings.

In essence, this research contributes valuable insights to the discourse on educational leadership and organizational dynamics, paving the way for further exploration and application of these principles in the multifaceted realm of academic institutions. The implications derived from this study resonate not only within the context of Bangalore but extend to inform and inspire leadership practices in educational settings globally.

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