The Mediating Role of Knowledge Sharing in Enhancing the Impact of Spiritual and Authentic Leadership on Organizational Innovation in Higher Education

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Abstract: This study aimed to investigate the influence of spiritual and authentic leadership styles on organizational innovation in Saudi universities. We examined how the influence of these leadership styles fluctuates, depending on the extent of knowledge sharing. Then we built a suggested model, using (SEM) for data analysis. The results of the study concluded that spiritual and authentic leadership have a positive influence on organizational innovation. in addition to the positive influence of knowledge sharing on organizational innovation. However, knowledge sharing plays a positive mediating role between spiritual leadership and organizational innovation, whereas this trend was not found for authentic leadership.

1. Introduction

Worldwide, higher education faces many challenges related to technological, political, and social development issues, globalization and its interrelations, and competitiveness and its requirements. The quick transformations that are being undertaken to achieve sustainable development in the Saudi Arabia require universities to play critical roles in change through adjusting the focus of their primary duties, including teaching, research, and community service (Elrehail et al., 2018), to include specific curricula, models, practices, and strategies and reorienting university leaders to use the latest management and organizational practices (Sutanto, 2017). Professional, creative, and innovative leadership plays an important part in the success of university programs because the specific leadership style affects the behavior of creative workers (De Jong and Den Hartog, 2007). Innovation is essential for enhancing performance and maintaining the competitive advantage of an institution (Salim and Sulaiman, 2011), and leadership affects both innovation and organizational performance (Samad, 2012).

Universities worldwide strive to monopolize the spotlight and attention, and they strive for competitive advantages by Investments in innovation, as innovation is important for effective universities, and it is a vital topic of interest in organizational studies (Gaspar and Mabic, 2015). Based on theoretical literature review, the use of innovative practices usually depends on the interaction between many individual and institutional factors (Hoidn and Kärkkäinen, 2014; Zhou, 2015). Previous studies on higher education have emphasized the essential role of leadership style in knowledge sharing (Li et al., 2014), as appropriate leadership has the possible to foster organizational innovation by motivating staffs and promoting favorable settings to develop creative skills (Li et al., 2014; Xue et al., 2011). However, although previous studies have improved our knowledge of the factors influence organizational innovation in universities, there are still gaps in theoretical literature that are worth highlighting before attainment any strong conclusions in this regard.

Firstly, most previous studies have addressed effective methods of transformational leadership, but they have neglected new leadership approaches, such as spiritual and authentic leadership (Al-Husseini and Elbeltagi, 2016). Recently, these leadership models have gained substantial attention from leadership scholars, as they understand the benefits for institutions and leaders in achieving desirable outcomes (Walumbwa et al., 2008). Spiritual leadership promotes organizational learning and encourages collaboration rather than individual learning (Zavareha et al., 2013). For authentic leadership, it fosters openness and promotes building trustworthy environments between leaders and subordinates, which is essential for creativity and innovation (Walumbwa et al., 2008). Authentic leadership is a beneficial leadership style because authentic leaders build their legitimacy on moral grounds and mutual respect with subordinates. In addition to authentic and spiritual leadership, knowledge sharing contributes to maximizing the potential of institutions to innovate (Ritala et al., 2015; Wang and Wang, 2012). Innovation and creativity are an output of the available information and knowledge about a specific field (Lee et al., 2015; Ritala et al., 2015). So, sharing

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information between workers increases creativity and innovation in institutions (Elrehail et al., 2018). Although knowledge sharing in universities seems to have a possible impact, previous research has not given it due attention. Theoretical literature related to higher education.

This study contributes to bridging the aforementioned gap by investigating the influence of spiritual and authentic leadership on organizational innovation in Saudi universities. It provides a modern vision of many effective leadership approaches and styles that are important to organizational innovation in Saudi universities and investigates the impact of interactions between spiritual and authentic leadership styles and knowledge sharing in Saudi universities. In so doing, this study elucidates a correlation that has not been addressed before, providing an actionable reference framework for all practitioners and academic leaders.

2. Background and Hypotheses Development

Organizational innovation is important factor for achieving institutional success and competition. In light of previous studies, it was found that organizational innovation does not go beyond fulfilling two basic conditions for ideas, products, or procedures which are said to be innovative. The first condition is modernity or novelty, and the second is usefulness and beneficiary, Researchers we mean by modernity or novelty is authenticity or the unexpected, and usefulness and benefit is convenience, adaptation, or feasibility (Werlang and Rossetto, 2019) Sullivan and Ford (2010) confirm the validity of this conclusion. However, Morris (2006) defined innovation as a process of making, developing, acquiring, and implementing a new idea, product, serving, or practice with the purpose of improving efficiency, effectiveness, and competitive advantage in a way that adds value to the foundation and stakeholders. A review of the literature also shows the presence of many alternatives concepts and models. Innovation can be represented in new production process technology, or a new product, service, structure, management system, plan, or program related to staff (Liao and Wu, 2010).

Werlang and Rossetto (2019) demonstrated a combination of personal factors that foster organizational innovation: flexibility, work independence, openness to others, self-confidence, activity, and motivation. Gilson et al., (2005) emphasized the prospect of promoting organizational innovation through contextual and organizational factors available in the work environment. Previous studies have identified many individual and institutional influences that affect innovations in higher education foundations, including styles of leadership, methods, and knowledge exchange (Hoidn and Kärkkäinen, 2014; Zhou, 2015). Effective leadership styles are perceived as one of the most important aspects influential organizational innovation, considering the prominent role of leaders in producing creative ideas, setting goals, and creating an overarching culture of innovation in the institution. Spiritual leadership is seen as a manifestation of ethical dimensions in all areas of employment drive workers to do their jobs lovingly and enthusiastically. In addition, it may have an effect on promoting organizational innovation and encouraging employees to adopt it, on account of its ability to convert the workplace into a more productive environment (Jihye and Wang, 2020). Other authors see spiritual leadership as behaviors, values, and attitudes that motivate workers To have a feeling of spiritual survival by organization sense and membership (Aydin and Ceylan, 2009). This entails creating a vision that gives a meaning to the lives and careers of workers, as well as establishing a social and Organizational culture on the basis of love and altruism and a sense of organizational membership (Fry, 2003; Sendjaya, 2007). Fry (2003) believes that the dimensions of spiritual leadership represent the values and attitudes of the spiritual leader and are represented in vision, altruism, hope, and faith (Chen and Yang, 2012; Fry et al., 2011; Kaya, 2015; Shafighi et al., 2013). The first dimension of spiritual leadership is represented in the vision of the leader, which refers to the intended future development of the institution as it serves three important functions: defining the general trend of change, simplifying many decisions, and coordinating the actions of workers quickly and efficiently. Accordingly, there must be a strong vision that reflects ideals, gives meaning to work, and boosts hope and faith (Kaya, 2015). The second dimension of spiritual leadership is represented in hope and faith. Hope combines a desire with an expectation for self-fulfillment along with a confidence that what is needed and expected will come true and be fulfilled (Kaya, 2015), whereas faith is the source of conviction that the institutional vision will be fulfilled (Fry, 2003). Thus, workers have hope and faith in the vision, and they are eager to face obstacles, hardship, and suffering to achieve their goals (Jeon, 2011). The third dimension of spiritual leadership is love and altruism, which is a combination of basic values, assumptions, understandings, and ways of thinking that are considered a common right among workers (Fry et al., 2011).

Thus, the significance of spiritual leadership lies in creating a vision for workers for serving others, promoting Organizational culture on the basis of love and altruism, achieving organizational commitment, continuous improvement, and increasing productivity (Benefiel el al., 2014; Bindlish et al., 2012). Institutions that adopt spiritual leadership styles and patterns enhance organizational productivity and organizational innovation, encourage creativity and innovation in work through outstanding performance and innovative ideas. Accordingly, we will expand the current

endeavors in research by studying the influence of spiritual leadership on organizational innovation in public Saudi universities. Hence, we express the following hypothesis.

Hypothesis I (H1): There is a positive influence of spiritual leadership on organizational innovation in Saudi universities.

Given the unexpected changes that many institutions have suffered from and the emergence of ethical issues in uneasy work environments, authentic leadership has gained much attention from researchers, practitioners, and academics in recent years as a modern ethical approach to leadership (Bento and Ribeiro, 2013). Studies have delved into the establishing of basic assumptions of the theory on how to develop authentic leadership, its primary characteristics, and the dimensions adopted in measuring it. This has made authentic leadership one of the most important theories of modern the third millennium leadership, and is a serious attempt to attain organizational goals (Zama Hani el al., 2011). Walumbwa et al. (2008) defined authentic leadership as "a style of leadership behavior that enhances work capacities to achieve the greatest possible self-awareness, ethical internal perspective, balanced processing of information and relational transparency between the leader and subordinates." Al-Jaradat el al. (2020) suggested that the behavior of authentic leaders promotes positive self-development of employees and achieves sustainable results for worker performance in unstable environments.

Walumbwa et al. (2008) determined four dimensions of authentic leadership behavior: self-awareness, internal moral perspective, relational transparency, and balanced processing. Self-awareness refers to the understanding a leader has of their strengths and weaknesses in their treatment of others and realizing their perceptions and the influence of these on them depending on surrounding variables (Walumbwa et al., 2008). Opatokun et al. (2013) point out that self-awareness refers to the leader's ability to understand and adhere to their own impartially. Kernis (2003) believes that the internal moral perspective is the leader's ability to act according to their beliefs and values and not to satisfy others, as authentic leaders seek to harmonize between their genuine self and their behavior. Walumbwa et al. (2008) consider the moral perspective to be the consistency between the leader's principles and their intentions and behaviors. Peus et al. (2012) added that the internal moral perspective determines a leader's behavior depending on ethical standards, beliefs, and values. The third dimension of authentic leadership behavior is relational transparency, which is represented by openness, honesty, and truthfulness in the appreciation of the true self of others. This transparency creates a work environment that promotes innovation and creativity (Peterson et al., 2012). The fourth and final dimension, which linked to the balanced processing of information, reflects the neutrality of decision-making, and the skill of leaders to objectively analyze information and explore the opinions of others before making their decisions (Opatokun et al., 2013).

Authentic leadership is positively linked to both organizational citizenship behavior and the participation of workers in work (Leroy et al., 2012; Walumbwa et al., 2010). A study by Walumbwa et al. (2008) showed that authentic leadership helps improve the positive psychological capital, the ethical atmosphere at work, and employee performance. Also, Darvish and Rezae (2011) and Xiong and Fang (2014) suggested a positive relationship between authentic leadership and both employee satisfaction and obligation to performance, whereas a study by Leroy et al. (2012) concluded that authentic leadership has a positive impact emotional organizational commitment by mediating the integrity of the leader's behavior and the correlation between authentic leadership and innovation. Zhou et al. (2014) revealed a positive relationship between authentic leadership and innovation by mediating positive emotions among workers, whereas Elrehail et al. (2018) did not reveal any influence of authentic leadership on innovation in the higher education segment. Despite the limited number of studies about the influence of authentic leadership on innovation in higher education foundations (Cerne et al., 2013), the lack of a prevailing culture of innovation in these institutions provides an opportunity for authentic leaders to influence their institutions by adopting specific innovation strategies that contribute to developing creativity in workers and creating innovative ideas. According to Zhou et al. (2014), authentic leadership plays a fundamental role in worker innovation and creativity, and it positively affects the development of new ideas, leading to creativity, and innovation. The more authentic leadership is, the more employee creativity increases (Malik et al., 2016). Authentic leadership changes the perspective of workers and motivates them to think of innovative solutions (Al-Jaradat et al, 2020). Therefore, we formulate a second hypothesis:

Hypothesis II (H2): Authentic leadership has a positive influence on organizational innovation in Saudi universities.

Besides to leadership styles and patterns, knowledge sharing has a major influence on institutional innovation (Wang and Wang, 2012). Since universities are based primarily on learning and innovation, knowledge sharing is a needful practice to achieve the mission and goalmouths of universities (Mcinerney and Mohr, 2007), and the concept of knowledge sharing is seen as "a set of behaviors that involve exchanging information and proposals between employees

and team members, providing relevant and important ideas, and helping others" (Elrehail et al., 2016, 2013). Usually, in innovations, institutions are likely to depend heavily on the knowledge, experience, and skills of workers in the value creation operation (Ritala et al., 2015). At the organizational level of universities, knowledge sharing achieves significant value by improving efficiency organizational through continuous improvement of the best organizational practices. The true value of workers lies in how much knowledge is created In the course of their labor and not in how much labor is done (Campbell, 2009). To fulfill the tasks of organizational innovation in an institution, employees need to take advantage of the tacit knowledge, including skills and experiences, that their colleagues have, or make use of the knowledge contained therein (Jantunen et al., 2008). Accordingly, an institution adopting knowledge sharing is expected to generate innovative, useful ideas for developing real job opportunities inside and outside the institution (Alzghoul et al., 2016). If the outcome of knowledge sharing is the creation of novel and innovative knowledge to improve institutional performance, universities need to share knowledge to achieve the greatest possible benefit from their intellectual capital and effectively compete in the global market (Sohail and Daud, 2009). Accordingly, knowledge is not a point of strength in itself, rather knowledge sharing is. Some studies indicate that knowledge sharing has a positive influence on innovation in higher education institutions (Elrehail et al., 2018) and that the continuity of knowledge in an institution will lead to a faster response to client needs and requirements at lower transaction costs, leading to a wide variety of changes within the institution (Vaccaro et al., 2012). Thus, knowledge sharing plays a vital role in promoting organizational innovation, and this leads us to our third hypothesis:

Hypothesis III (H3): Knowledge sharing has a positive influence on organizational innovation in Saudi universities.

In addition to the influence of direct knowledge sharing on organizational innovation, leadership style is one of the leading factors influencing knowledge sharing. Knowledge sharing plays a role in easing the role of leadership to achieve its goals (Bradshaw et al., 2015). It also enables the leader to direct the path of the institution (Han et al., 2016). Many studies have addressed the impact of leadership style and pattern on knowledge sharing, finding a positive relationship between leadership patterns and knowledge sharing among workers (Javaid et al., 2020). However, a study by Elrehail et al. (2018) showed that knowledge sharing has no mediating role between authentic leadership and innovation in higher education. In a context where knowledge sharing is the prevailing pattern within the institution, there are real opportunities for leadership to receive more solutions, opinions, proposals, and innovative ideas from employees involved in decision-making (Rawung et al., 2015). Leadership with spiritual and authentic behavior is also the most capable of solving problems, achieving goals, and making desired changes thanks to the sufficient experience of its workers, with a high grade of knowledge sharing (Loebbecke et al., 2016). Therefore, on the basis of all of the above, the authentic leader is likely to be more innovative and creative, especially when they share knowledge, which is the norm in universities. Accordingly, we formulate two other hypotheses.

Hypothesis IV (H4): There is an intermediary role for knowledge sharing between spiritual leadership and organizational innovation in Saudi universities.

Hypothesis V (H5): There is an intermediary role for knowledge sharing between authentic leadership and organizational innovation in Saudi universities.

3. Methodology

We used a descriptive, analytical approach. A organized questionnaire was developed for information collection and analysis and testing hypotheses about the variables included in the proposed framework by referring to previous literature. Figure 1 shows the study model and its component variables and the correlation and influence between its variables.

The study population consisted of all public Saudi universities, and the study sample was chosen from government Saudi universities located within the Saudi capital, Riyadh. The analysis unit consisted of (186) academy Table 1 shows the personal and functional characteristics of the analysis unit members. The primary reason for choosing academic leaders is that they exemplify the most important component of being a source of organizational innovation in universities. Accordingly, 287 questionnaires were distributed to the personnel of the analysis unit, from which 227 questionnaires were retrieved, and 41 invalid questionnaires were excluded from the analysis process because of the broad range of missing values (Hair et al., 2010). Therefore, the number of complete and valid questionnaires for the analysis process was 186 questionnaires.
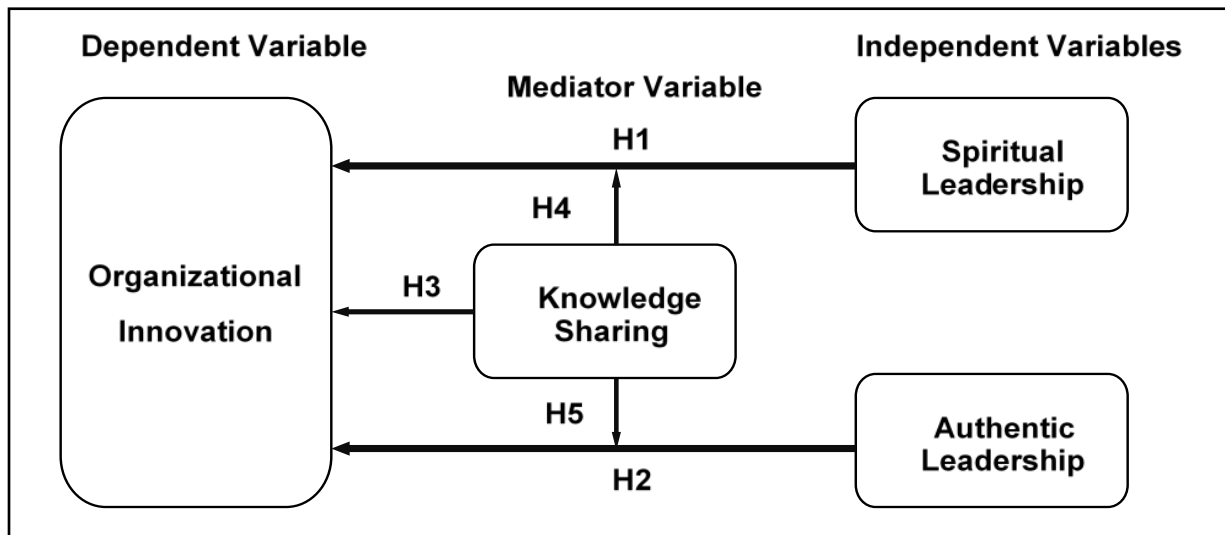
Fig. 1. Study Model and Hypotheses

Measurements

- *Authentic Leadership scale:* We adopted the authentic leadership questionnaire following Hsiung (2012), Neider and Schriesheim (2011) and Walumbwa et al. (2008). It included four areas and 18 questions (components), including whether or not participants agreed with statements, such as "unhesitantly, I admit mistakes when I make them" and "I make tough decisions according to high ethical standards."

- *Spiritual Leadership scale:* We adopted the spiritual leadership questionnaire from Fry et al. (2010). It includes three areas and 12 questions (components), including whether or not participants agreed with statements, such as "my university's vision motivates me to achieve the best performance," "I help workers as much as possible in the face of difficulties and challenges."

- *Organizational Innovation Scale:* We relied on previous literature (Sutanto, 2017; Werlang and Rossetto, 2019) to develop the organizational innovation questionnaire. It included four areas and 16 questions (components), including whether or not participants agreed with statements, such as "I encourage workers and students to be creative by caring for and supporting them," "I devise ways to improve the academic and administrative process."

- *The Knowledge Sharing Scale:* We relied on previous literature (Carmeli et al., 2011; Elrehail el al., 2018) to develop the knowledge sharing questionnaire. It included three areas, knowledge transfer, knowledge exchange, and knowledge transformation, and 12 questions (components), including whether or not participants agreed with statements, such as "I seek to provide colleagues with new information about the courses," "I interact with other colleagues to convert the information I have into knowledge."

Data Analysis

The study applied partial least squares-structural equation modeling (PLS-SEM) for hypotheses testing. as a favorable option over other data analysis models. This is because, one of the aims of this study was to discover the new relationships characterized by less clear theoretical basis. and the correlations between variables in this study were established at a high level of abstraction as second-order constructs. In addition, the proposed framework included a mediating variable that increases the complicated of the framework. Finally, the sample size of this study was 186, which is less than the required sample size to use other methods.

Table 1 shows the demographic features of the analysis unit respondents, and the data designate that the majority of the analysis unit respondents have sufficient knowledge to participate and provide reliable data under study.

Table 1. The Demographic Information of Respondents.

No.	Variables	Category	Frequency	Percentage
1	**Gender**	Male	143	77%
		Female	43	23%
		Total	**186**	**100%**
2	**Academic Specialization**	Healthcare Specialization	63	34%
		Scientific Specialization	71	38%
		Human Specialization	52	28%
		Total	**186**	**100%**
3	**Academic Rank**	Professor	56	30%
		Associate Professor	82	44%
		Assistant Professor	48	26%
		Total	**186**	**100%**
4	**Job Position**	Dean	32	17%
		Vice Dean	81	44%
		Chair of Department	73	39%
		Total	**186**	**100%**

Before conducting regression analysis, the data distribution was investigated by testing the standard deviation and the kurtosis coefficient for each of the variables comprised in the frame under study, with all the values varying between ± 0.036 and ± 1.73, which is less than the cut off value of ±2. This shows the normal distribution of the study data.

In adding, the reliability and validity of the first-order measurement model used in this study has been examined. The internal consistency of the gauge items was examined to measure factors and verify their validity, and scale coherence was evaluated by calculating Cronbach's alpha coefficient, which depends on the consistency of the individual's performance from one item to the next. Also, the degree of complex reliability that are used to assess the reliability of indicators were measured, as well as the degrees of element loading, as shown in Table 2. The degree of loading of all elements on the assumed latent variables ranged between 0.72 and 0.90 except for three elements: BalPro 2, SelAw 3, and Vis 2. BalPro 2 and SelAw 3 were deleted because their degree of loading was less than 0.4, while the third element Vis 2 belonged to the vision and its loading degree was 0.67, which is within the range of acceptable values, as proposed by Hair et al. (2014a, b). Thus, no further action was taken. The table also indicates that the Cronbach alpha scores and the combined reliability degree are above the threshold value of 0.7. Also, the validity of the measurement model was evaluated using average variance extracted (AVE) as shown in Table 2, where the values of AVEs ranged between 0.63 and 0.75, which is above the threshold of 0.5. Accordingly, the researcher can assume that all of the latent variables in the model were able to expound more than half of the variance of their elements, ensuring sufficient convergence validity (convergent validity). Also, the square root of AVE values was evaluated to ensure discriminant validity, as shown in Table 3, where the square root of the AVE values for each latent variable it was greater than the correlation with other latent variables that show a great deal of discriminant validity. In generally, the mentioned figures and values provide proof that the measurement model has sufficient reliability and validity. So, it can be concluded that all data are appropriate for further analysis to achieve study objectives.

Next, the reliability and validity of the second-order latent hypotheses (Becker et al., 2012) were examined. Since the second-order latent variables of this study are activated as reflective latent constructs, the researcher examined the loading of each first-order element on the assumed second-order latent variable. The loadings of all the first-order constructs were higher than the cut off value (Table 4). Likewise, Cronbach's alpha values and the combined reliability of each second-order construct were above 0.7. The AVEs values range between 0.521 and 0.632, which is much higher than the value of the cut off value of 0.5. Accordingly, all the second-order latent variables in the model were considered reliable and valid. This enabled the researcher to move safely toward the quality testing of the structural model and testing the proposed hypotheses.

The researcher created two structural models to examine the hypotheses, including a main influence model and interaction model. The main effect model was designed to examine and tests: H1, H2, and H3. Simultaneously, the interaction model was suggestion to examine the hypotheses related to the modified effects proposed in H4 and H5. These measures were taken following Hair et al. (2014a),considering that the correlation between variables may differ significantly when the structural model includes a mediator (Hair et al., 2014a).

Table 2. The Reliability and Validity of Items and Constructs.

The Variables	The Variables' Dimension	Cronbach's Alpha	Composite Reliability	AVE	Items	Items Loading
Spiritual Leadership (SL)	Vision	0.843	0.882	0.643	Vis (1)	0.896
					Vis (2)	0.674
					Vis (3)	0.880
					Vis (4)	0.765
	Hope\ Faith	0.886	0.847	0.678	HopFa (1)	0.854
					HopFa (2)	0.766
					HopFa (3)	0.870
					HopFa (4)	0.849
	Altruistic Love	0.835	0.869	0.693	AltLov (1)	0.833
					AltLov (2)	0.827
					AltLov (3)	0.879
					AltLov (4)	0.826
Authentic Leadership (AL)	Self-Awareness	0.821	0.878	0.736	SelAw (1)	0.863
					SelAw (2)	0.892
					SelAw (4)	0.865
					SelAw (5)	0.848
	Internalized Moral Perspective	0.858	0.912	0.755	InMPe (1)	0.811
					InMPe (2)	0.823
					InMPe (3)	0.842
					InMPe (4)	0.859
	Relational Transparency	0.798	0.866	0.720	RelTra (1)	0.844
					RelTra (2)	0.837
					RelTra (3)	0.893
					RelTra (4)	0.816
	Balanced Processing	0.848	0.923	0.726	BalPro (1)	0.862
					BalPro (3)	0.838
					BalPro (4)	0.856
					BalPro (5)	0.871
Knowledge Sharing (KS)	Knowledge Impart	0.857	0.901	0.689	KnImp (1)	0.849
					KnImp (2)	0.833
					KnImp (3)	0.846
					KnImp (4)	0.731
	Knowledge Exchange	0.842	0.891	0.697	KnExc (1)	0.854
					KnImp (2)	0.786
					KnImp (3)	0.771
					KnImp (4)	0.822
	Knowledge Transference	0.832	0.879	0.672	KnTra (1)	0.844
					KnTra (2)	0.872
					KnTra (3)	0.779
					KnTra (4)	0.726
Organizational Innovation (OI)	New Ideas	0.932	0.926	0.664	NewIde (1)	0.884
					NewIde (2)	0.887
					NewIde (3)	0.906
					NewIde (4)	0.778
	New Products	0.876	0.905	0.728	NewPro (1)	0.769
					NewPro (2)	0.767
					NewPro (3)	0.865

					NewPro (4)	0.847
	New Services	0.873	0.832	0.647	NewSer (1)	0.864
					NewSer (2)	0.845
					NewSer (3)	0.815
					NewSer (4)	0.808
	New Practices	0.911	0.939	0.688	NewPra (1)	0.826
					NewPra (2)	0.778
					NewPra (3)	0.903
					NewPra (4)	0.872

Path coefficients and their importance level were estimated in the suggested model using the PLS algorithm and PLS measures using 500 samples. The estimation results of both models are shown in Tables 3 and 4.

Table 3. Average Variance Extracted (AVE) Square Root.

The Variables' Dimension	BP	VIS	HF	AL	IMP	KI	KE	KT	NI	NPR	NS	NP	RT	SA
BP(Balanced Processing)	0.852													
VIS (Vision)	0.767	0.802												
HF(Hope \ Faith)	0.743	0.708	0.823											
AL(Altruistic Love)	0.647	0.655	0.633	0.832										
IMP(Internalized M. Perspective)	0.761	0.760	0.332	0.755	0.869									
KI(Knowledge Impart)	0.724	0.702	0.462	0.733	0.721	0.830								
KE(Knowledge Exchange)	0.417	0.473	0.478	0.635	0.409	0.455	0.835							
KT(Knowledge Transference)	0.476	0.467	0.524	0.751	0.346	0.537	0.641	0.820						
NI(New Ideas)	0.505	0.481	0.623	0.712	0.305	0.517	0.654	0.311	0.815					
NP(New Products)	0.484	0.443	0.625	0.405	0.474	0.662	0.408	0.418	0.575	0.853				
NS(New Services)	0.740	0.674	0.562	0.464	0.265	0.567	0.564	0.342	0.381	0.442	0.804			
NPR(New Practices)	0.684	0.643	0.588	0.593	0.442	0.472	0.636	0.315	0.357	0.410	0.731	0.829		
RT(Relational Transparency)	0.735	0.680	0.651	0.472	0.466	0.484	0.594	0.664	0.476	0.407	0.518	0.430	0.848	
SA(Self-Awareness)	0.674	0.651	0.683	0.684	0.478	0.725	0.492	0.413	0.534	0.468	0.474	0.341	0.622	0.858

Table 4. Hierarchical Measurement Model Assessment.

Second-Order Construct	Cronbach's Alpha	Composite Reliability	(AVE)	First-Order Construct	Loading
Spiritual Leadership (SL)	0.945	0.951	0.521	VIS(Vision)	0.922
				HF(Hope \ Faith)	0.865
				AL(Altruistic Love)	0.834
Authentic Leadership (AL)	0.922	0.931	0.565	SA(Self-Awareness)	0.924
				IMP(Internalized Moral Perspective)	0.871
				RT(Relational Transparency)	0.843
				BP(Balanced Processing)	0.921
Knowledge Sharing (KS)	0.863	0.921	0.541	KI(Knowledge Impart)	0.882
				KE(Knowledge Exchange)	0.986
				KT (Knowledge Transference)	0.869

Organizational Innovation (OI)	0.937	0.948	0.632	NI(New Ideas)	0.962
				NP(New Products)	0.877
				NS(New Services)	0.852
				NPR(New Practices)	0.933

Table 5. Path coefficients and significance level of the main mode.

Variables name	β	Standard Deviation	T Statistics (|O/STDEV|)	P Values
Authenticate Leadership **(AL)**	0.228	0.137	1.878	**0.021****
Knowledge Sharing **(KS)**	0.219	0.104	2.083	**0.014****
Spiritual Leadership **(SL)**	0.239	0.149	1.968	**0.023****

Note. Significant at * $p < 0.1$ ** $p < 0.05$ *** $P < 0.01$ (one-tailed test).

Table 5 displays that there was a positive relationship between spiritual leadership and organizational innovation (β = 0.239; $p < 0.05$), indicating that a one-degree surge in the level of interest in spiritual leadership leads to an surge in organizational innovation in Saudi universities. This finding emphasizes the validity of the first hypothesis (H1). Accordingly, the first hypothesis (H1), which states that "there is a positive influence of spiritual leadership on organizational innovation in Saudi universities," was accepted. There was a positive relationship between authentic leadership and organizational innovation (β = 0.228; $p < 0.05$), indicating that a one-degree increase in the level of concern in authentic leadership leads to surge in organizational innovation in Saudi universities. This emphasizes the validity of the second main hypothesis (H2). Accordingly, the second hypothesis (H2), which states that "there is a positive influence of authentic leadership on organizational innovation in Saudi universities," was accepted. Finally, there has been a positive relationship between knowledge sharing and organizational innovation (β = 0.219; $p < 0.05$), indicating that a one-degree surge in the level of interest in knowledge sharing leads to surge in organizational innovation in Saudi universities. This emphasizes the validity of the third main hypothesis (H3). Accordingly, the third hypothesis (H3), which states that "there is a positive influence of knowledge sharing on organizational innovation in Saudi universities," was accepted.

Table 6. Path Coefficients and Significance Level of the Interaction Model.

Variables name	β	Standard Deviation	T Statistics (|O/STDEV|)	P Values
Authenticate Leadership **(AL)**	0.123	0.104	1.258	**0.102**
Knowledge Sharing **(KS)**	0.263	0.102	2.722	**0.005**
Spiritual Leadership **(SL)**	0.328	0.137	2.414	**0.009**
(AL) × Knowledge sharing **(KS)**	-0.215	0.192	1.395	**0.074**
(SL) × Knowledge sharing **(KS)**	0.348	0.189	1.827	**0.031**

Note. Significant at * $p < 0.1$ ** $p < 0.05$ *** $P < 0.01$ (one-tailed test).

Table 6 displays the result of the interaction model: the latent variable of the interaction between spiritual leadership and knowledge sharing contains a high path coefficient (β = 0.348, at $P < 0.05$), indicating a moderate effect of spiritual leadership on organizational innovation in Saudi universities, since knowledge sharing is regarded as a mediating variable. This means that spiritual leadership is more efficacious when knowledge sharing is the prevailing behavior in government Saudi universities, and this emphasizes the validity of the fourth hypothesis (H4). Hence, the researcher decided to accept the fourth hypothesis (H4), which states that "there is a mediating role for knowledge sharing between spiritual leadership and organizational innovation in Saudi universities." Figure 2 displays the relationship between spiritual leadership and organizational innovation under the high and low levels of knowledge sharing.
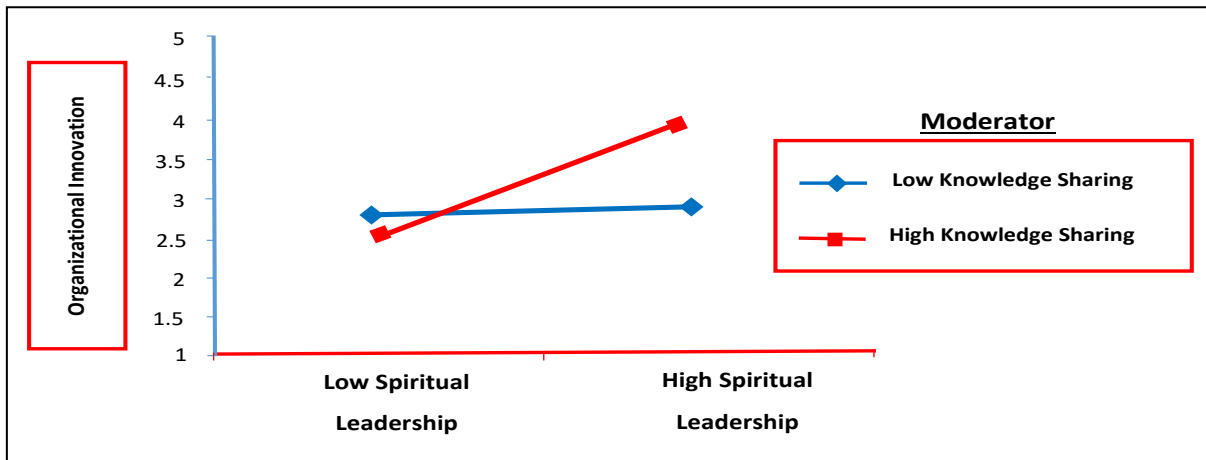
Fig. 2. The Interaction Term Between Knowledge Sharing and Spiritual Leadership on Organizational Innovation.

This result indicates what factors influence average levels of knowledge sharing and spiritual leadership. It also indicates that the coupled of spiritual leadership and knowledge sharing has a positive influence on organizational innovation. This means that spiritual leadership is more predictive of organizational innovation, and this reinforce the role of knowledge sharing. The results also display that the latent variable of the interaction between authentic leadership and knowledge sharing has little effect (β = - 0.215, at P> 0.05), indicating that there is no moderate influence of knowledge sharing on authentic leadership. These findings contradict the fifth hypothesis (H5), thereby rejecting it and accepting the alternative hypothesis, which states that "there is no mediating role for knowledge sharing between authentic leadership and organizational innovation."

In brief, the study results displayed that spiritual leadership, authentic leadership, and knowledge sharing have a positive influence on organizational innovation in Saudi universities. The results also displayed that knowledge sharing significantly interacts with spiritual leadership. Therefore, the assumption that knowledge sharing has a positive mediating role between spiritual leadership and organizational innovation in Saudi universities was partially supported. However, this was not demonstrated for authentic leadership.

4. Discussion of Results

This study aimed to identify the influence of spiritual and authentic leadership on organizational innovation in Saudi universities and to inspect the mediating role of knowledge sharing in boost the proposed leadership methods. We targeted academic leaders in Saudi universities. The analysis comprised a sample of 186 leaders from the aforementioned universities, which was a big enough sample for regression analysis using path analysis software (PLS-SEM) to inspect the proposed hypotheses. We used two models: a main effect and reaction model. The results of the main effect model indicated a direct positive influence of spiritual leadership on organizational innovation in Saudi universities, while the role of spiritual leadership was distinctively examined at the hierarchical level. The results of this study were Compatible with previous studies that were conducted in the higher education (Chen and Yang, 2012; Elbayomi, 2016; Kaya, 2015). This is owing to the nature of society and the spiritual values that Saudis are brought up with. Spiritual leadership enables them to build an atmosphere of trust that enhances organizational innovation. Moreover, spiritual leadership enhances organizational performance by combining the attitudes, values, and behaviors of leaders and arousing the enthusiasm of workers. This enables them to realize the value of their work and the mission of their institution, giving them confidence to achieve something different and valuable (Chen and Yang, 2012). Spiritual leadership has a positive influence on the creativity of employees, and it has the possible to change organizational culture and promote organizational innovation across the institution (Karadage, 2009). Spiritual leaders create positive attitudes among their subordinates thanks to their openness, respectfulness, and care for others. Thus, they can contribute to promoting organizational innovation across their institutions (Shafighi el al., 2013; Zavareha el al., 2013).

Our analyses displayed that there is a direct influence of authentic leadership on organizational innovation in government Saudi universities, as expected. This is compatible with previous studies that confirm the positive influence of authentic leadership on organizational innovation (Edú-Valsania et al., 2016; Malik et al., 2016; Zhou et al., 2014). However, this result disagrees with the study of Elrehail et al. (2018), who displayed that there was no positive influence of authentic leadership on innovation. Perhaps this is because academic leaders in Saudi universities are

naturally authentic leaders, with high ethical standards that guide their behavior, thanks to their religious culture and upbringing, along with their transparency, which creates a work environment that enhances innovation and creativity (Hsiung, 2012). Authentic leadership plays an essential role in the creativity of employees and positively affects the development of their new ideas and motivates them to reach innovative solutions (Al-Jaradat, 2020). The Kingdom of Saudi Arabia's ambitious vision (2030) has imposed a challenge for academic leaders in Saudi universities to innovate and achieve the competitive advantage.

Finally, in terms of the main effect model, we inspected the direct influence of knowledge sharing on organizational innovation. Unlike for previous studies, we activated knowledge sharing as a reflective construct measured by knowledge transfer, exchange, and transformation to remain compatible with the aims of the study that hypnotizes this, since the practices and rules of knowledge transfer and exchange, including knowledge transformation, facilitate the process of organizational innovation in universities. Our findings indicate that knowledge sharing has a positive influence on organizational innovation in ideas, products, services, and practices across Saudi government universities, and this result is partly consistent with Al-Shaima et al. (2016) and Elrehail et al. (2018).

However, we adopted an interaction model to examine our moderate hypotheses. The results of the interaction influence show that knowledge sharing has a positive influence on spiritual leadership and organizational innovation in Saudi universities. This designates that knowledge sharing can be viewed as a condition facilitating the role of spiritual leadership. Moreover, knowledge sharing is a critical dimension and the key that academic leaders can use to steer their institutions toward organizational innovation. Contrary to expectations, the mediating and moderate role of knowledge sharing between authentic leadership and organizational innovation has not been observed. This indicates that the influence of authentic leadership on organizational innovation rely on the capabilities of leaders and that both of these factors are more useful for creating psychological and positive capabilities and generating an ethical and positive atmosphere in any institution than the best practices and standards of knowledge sharing.

Theoretical and Practical Implications

This study is designed to inspect the influence of spiritual and authentic leadership patterns on organizational innovation (ideas, products, services, and practices) and to inspect the mediating and moderate role of knowledge sharing on spiritual and authentic leadership patterns in Saudi universities, thereby filling the critical gap in theoretical literature. First, while previous studies were limited to effective leadership styles, such as transformational leadership, and have not been exposed to new approaches to leadership, such as spiritual and authentic leadership, this study is distinguished from its previous counterparts by investigating the influence of spiritual leadership and leadership on organizational innovation, including ideas, products, services, and practices, in Saudi universities, within one theoretical framework that enriches the theory of spiritual leadership with new knowledge of this perspective and provides a new dimension for the higher education literature. Moreover, our activation of spiritual leadership is completely different from previous studies. We addressed spiritual leadership as a highly ordered construct rather than studying the behavioral dimensions separately, as a first-order construct. This step enabled us to estimate and evaluate the influence of the general concept that represents several aspects of a specific theory rather than the effects of its dimensions separately (Alsaad et al., 2015). Second, we tested our proposed framework in Saudi Arabia, which is an Arab country that has a substantially different context to Western countries where other studies have been conducted, and this further deepens our understanding of organizational innovation, leadership, and knowledge management in contexts that offer a different culture and unique characteristics, especially in Arabic countries. Third, previous research implicitly assumed that leadership styles facilitate organizational innovation in institutions, ignoring the role that the prevailing context and standards play in the institution. Furthermore, research in the mediating role of knowledge sharing sheds light on some of the significant conditions for facilitating the role of leadership in promoting organizational innovation in Saudi universities. Our findings emphasize that knowledge sharing provides opportunity for leaders to accept more solutions, opinions, suggestions, and ideas from workers when leaders engross in participatory decision-making. This is compatible with the results of our study that show that spiritual leadership, authentic leadership, and knowledge sharing have a direct and positive influence on organizational innovation in Saudi universities. In terms of practice, this study includes a set of recommendations for leaders in government Saudi universities that spiritual leadership and authentic leadership and their related behaviors are the most appropriate techniques to deliver a supportive climate for organizational innovation. Moreover, there must be some focus on knowledge sharing and providing universities with a culture that promotes knowledge sharing between academic leaders either personally or within the university as a whole.

Study Limitations

This study has some constraints:

- The study concentrated on two leadership styles among a group of other styles mentioned in theoretical literature. Therefore, further studies are required to examine the relationship between other leadership styles and organizational innovation.

- The results of this study cannot be generalized beyond the Saudi higher education, as the specimen used in this study was chosen from the government Saudi universities in Riyadh. Therefore, further studies are required to test our framework in other sectors to check its validity in predicting organizational innovation.

- The study was conducted on government Saudi universities in Riyadh, constraining the generalization of the results of this study to all universities in the Saudi Arabia. Therefore, further research is required to survey a representative sample to generalize across the Kingdom as a whole.

Future Research

In addition to the points highlighted above, future studies must pay attention to reiterating the study model to find out whether similar results will be obtained. Moreover, other types of innovations should be taken into consideration, such as administrative innovation, organizational commitment, organizational confidence, and psychological capital. Furthermore, researchers should include other mediating variables in future studies, such as learning, training, and the quality of relationships, given the substantial significance of these variables.

Conflict of interest

The authors declare that there is no conflict regarding the government ation of this paper.

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