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Received 6 September 2022
Revised 27 December 2022
Accepted 29 January 2023

Towards understanding the influence of innovative work behavior on healthcare organizations' performance: the mediating role of transformational leaders

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Abstract

Purpose – The study's aims are to identify healthcare innovation variables, explore innovative work behavior's (IWB's) influence on Saudi health sector companies and evaluate the mediating function of transformational leadership in the link between IWB and healthcare organizations. In this backdrop, the purpose of the current research was to investigate the impact of creative work behavior on organizational performance and the role of transformational leadership in this process.

Design/methodology/approach – The objective of this quantitative cross-sectional study was to examine, according to 587 participants, the perceived elements of creative work behavior (RQ1). In various 10 departments of the 5 Dammam Health Network (DHN) in the Eastern Province of Saudi Arabia, online questionnaires were used to collect data. SmartPLS 3 software was used to analyze the data.

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The authors would like to express their deep gratitude to their research supervisors Professor Odeh Al-Jayyousi and Professor Fairouz Mosleh Aldhmour for their guidance, enthusiastic encouragement and useful critiques of this research work. The authors would also like to thank Dr. Mcmillan Onyemuchechukwu Durugbo, for his advice and assistance in keeping their progress on the schedule.

Funding: There is currently no funding for this research.

Arab Gulf Journal of Scientific Research
Vol. 42 No. 1, 2024
pp. 198-216
Emerald Publishing Limited
e-ISSN: 2536-0051
p-ISSN: 1985-9899
DOI 10.1108/AGJSR-09-2022-0167

Findings – The findings indicated that healthcare professionals perceive the elements of autonomy, competence, relatedness, motivation and knowledge sharing as key features that influence high efficiency in organizational efficiency ($p < 0.001$). IWB also had a significant and direct positive influence on organizational performance ($p < 0.001$). Transformational leadership behavior had an insignificant negative effect on employees' task performance when considering organizational performance ($P = 0.122$). Therefore, the mediation role did not affect the relationship with IWB concerning employees' task performance, suggesting that transformational leadership behaviors did not have a mediating effect on the effectiveness of employees' task performance.

Originality/value – This article contains original analysis and interpretation highlighting integrating IWB and transformational leadership into Saudi Arabia's national healthcare system that can help address specific difficulties facing healthcare practitioners.

Keywords Transformational leaders, Innovative work behavior, Organizational performance, Knowledge sharing

Paper type Research paper

1. Introduction

Innovative work behavior is vital to the worldwide growth and development of any social or economic sector. Innovative work behavior (IWB) has evolved as a valuable notion that changes healthcare practitioners' efficiency. Kmieciak (2020) says IWB involves adopting targeted techniques that allow employees to apply new ideas successfully and adjust operational strategies to improve results. IWB helps Saudi Arabian healthcare companies improve operations and service delivery (Kmieciak, 2020).

Despite the quality and rank of the Saudi healthcare system, several obstacles and issues impede the efficiency of healthcare practitioners in satisfying patient needs (Alaboudi *et al.*, 2016; Alluhidan *et al.*, 2020).There is a significant need to improve the quality of service delivery in Saudi Arabia's healthcare sector (Al Mutair *et al.*, 2021). One study conducted in Saudi Arabia illustrated that the specific features of IWB are crucial in promoting the efficiency of employees' operations in current national sectors and influencing positive changes in service outcomes (Adam, 2022). Such a finding suggests that Saudi Arabia's healthcare sector and healthcare practitioners benefit significantly from integrating IWB principles and strategies.

Statistics show that Saudi Arabia has one of the best healthcare systems worldwide (Al-Hanawi, Khan, & Al-Borie, 2019). The Saudi Arabian government has made significant efforts to equip the sector and ensure its capacity to match diverse changes that characterize the current global healthcare system. For instance, it has increasingly adopted measures to integrate the latest technological innovations into the healthcare system to improve the efficiency and quality of service delivery to patients (Alshammari, 2021).It also seeks to ensure its capacity to maintain the stability of its national healthcare system by enhancing the efficiency of other social and economic fields to compete effectively with other developing and developed nations in the current global economy. The nation sustains a vital balance between governmental and private healthcare institutions that offer high-quality services to the public. The Saudi Arabian healthcare sector's current socioeconomic environment enables it to pursue an increased number of partnerships between private and public entities to improve the quality of service delivery (Al-Hanawi, Almubark, Qattan, Cenkier, & Kosycarz, 2020; Mohammed Khaled Al-Hanawi, 2019).

Integrating IWB and transformational leadership into Saudi Arabia's national healthcare system can help address specific difficulties facing healthcare practitioners (Al-Hanawi *et al.*, 2019). Therefore, the objectives of the study are to determine healthcare innovation factors, examine IWB's impact on Saudi health sector organizations, and assess the mediating role of transformational leadership on the relationship between IWB and healthcare organizations.

2. Literature review

The purpose of this study is to answer the following research question within its framework.

RQ1. How can transformational leaders (TL) play a role in moderating the effect of employees' creative activity on healthcare businesses' bottom lines?

The analysis of the research question emphasizes three key variables that will be explored further through the systematic literature review process; IWB, healthcare organization's innovation and performance, and transformational leadership in healthcare organizations.

2.1 Innovative work behavior (IWB)

Kessel, Hannemann-Weber, and Kratzer (2012) defined IWB as the introduction and implementation of novel ideas to improve job performance. Evaluation of the studies revealed important insights into the relationship between IWB and thematic study elements like attitudes (planned behavior), assimilation of ideas and technology (diffusion of innovation), knowledge sharing (KS) (knowledge-based view), competency (self-efficacy) and psychological needs (Kessel *et al.*, 2012).

Various articles emphasized the link between IWB and employee KS. Akram, Lei, and Haider (2016) and Asurakkody and Kim (2020) found a link between KS and innovative work. Akram *et al.* (2016) found that how corporations treat their employees, together with knowledge exchange and management, affects innovative worker behavior. Fair treatment of employees motivates knowledge exchange, which boosts overall competitiveness, according to the researchers (Akram *et al.*, 2016; Asurakkody & Kim, 2020).

Liu, Xu, and Zhang (2020) found that work success may be essential to understanding the paradox of psychological mindsets and IWB (Liu *et al.*, 2020). According to the self-determination theory (SDT), the need for competence (COMP) may be deemed vital for all persons, but the extent to which different individuals can satisfy the same demand in social interactions may need further examination. These findings show the importance of COMP in fostering IWB, but leaders must strike a balance when satisfying psychological requirements (Wang *et al.*, 2021).

2.1.1 Innovative work behavior and healthcare organizational performance. Some researchers examined the impact of knowledge-sharing, an IWB, on healthcare performance. Rangachari (2008) found a link between quality organization knowledge-sharing and hospital coding performance. Implementing knowledge-sharing networks between hospital subgroups and physicians improved hospital performance, according to the study (Rangachari, 2008).

According to studies conducted by Hunter & Schmidt, 1983, the more people have the necessary competencies, the more they can perform at their best. However, this doesn't mean that they can perform at an effective level. For instance (p. 526) while it is important to have the necessary skills and knowledge to perform at an expected level, it is also not always possible to do so in a real-life setting (While, 1994).

Melnyk, Bititci, Platts, Tobias, and Andersen (2014) noted that evidence-based methods improve nurse competencies and the quality and reliability of healthcare services. In this research the researchers noted that, despite claims that evidence-based practices (EBP) improve the quality and dependability of healthcare systems, EBPs are not the global standard of care (Melnyk *et al.*, 2014). The evaluated studies (Lúanaigh & Hughes, 2016; Melnyk *et al.*, 2014) suggested that medical staff competency (nurses, doctors) affected healthcare organization performance (OP), and EBPs were supported to ensure their success.

Some research explored the impact of workplace attitudes and technology on healthcare OP. Durgun and Kaya (2018) found that emergency department (ED) nurses' knowledge and abilities were crucial to patient safety. The findings revealed that nursing practitioners' COMP and knowledge levels positively influenced their attitudes toward patient safety, improving healthcare OP (Durgun & Kaya, 2018).

Furthermore, the articles reviewed emphasized major conclusions about healthcare performance evaluation. Another study findings showed that healthcare system performance

could be evaluated in nine dimensions: technological innovativeness, job training (skill and competency), organization commitment, job satisfaction, service innovation, organizational structure, talent management, market innovativeness, business innovativeness and management's perceptions (Omachonu & Einspruch, 2010).

2.1.2 Transformational leadership in healthcare. Numerous researchers have evaluated training in transformative leadership in hospital contexts. In the study by Vimr and Thompson (2011), researchers stated that the need for training on transformational leadership in healthcare originated from the fact that most of the physicians were ill-prepared and had little formal training in their leadership responsibilities. Based on the excellent results from the program, it was further advised that training on transformational leadership encompassed critical qualities such as accountability, teamwork and personal development (Vimr & Thompson, 2011).

Other studies examined transformational leadership's impact on hospital and nursing outcomes. The researchers looked at how leadership style affected healthcare OP. Robbins and Davidhizar (2020) found a direct association between transformative leadership and nurse satisfaction. Content nurses had decreased turnover and improved retention rates, according to the study. Transformational leadership improved nurse satisfaction, retention and patient satisfaction (Robbins & Davidhizar, 2020).

Vatankhah *et al.* (2017) studied transformational leadership's impact on hospital employee productivity. The study found that when healthcare businesses adopted transformational leadership, employee and organizational productivity increased. Various studies examined transformational leadership's impact on team results (Vatankhah *et al.*, 2017). The studies examined how leadership style affected employee teamwork. Nielsen, Yarker, Randall, and Munir (2009) studied the mediating effects of team and self-efficacy on transformational leadership, job satisfaction and healthcare workers' psychological well-being. TL can positively affect team outcomes by boosting job satisfaction and psychological well-being. This would promote well-being and teamwork (Nielsen *et al.*, 2009). TL impacted team innovation (Li, Mitchell, & Boyle, 2016) and IWB (Afsar & Umrani, 2020).

3. Research gap

The gap noted from the literature was that most factors (attitude, COMP, autonomy (AUT), relatedness (RET) etc.) that determine the motivation (MOT) of employees may have been assessed; their specific connection or influence on IWB remained largely under-researched. Another gap identified from the literature review was that, although majority of studies have illustrated the influence of transformational leadership on organizational performance, team outcomes and patient outcomes, few studies have examined its mediatory role in facilitating IWB among employees. Additionally, most studies have investigated task performance with respect to the three elements of SDT, such as competency, AUT and RET, but a direct connection of different task performance capabilities with respect to these factors and IWB has not been adequately established. This study aims to bridge this gap by illustrating that transformational leadership can mediate IWB by influencing two particular aspects among employees; KS behavior and employees' MOT.

4. Research methodology

Present study has employed an exploratory design to answer the research question. An exploratory research is best for unclear problems, providing a deeper knowledge of the underlying issue (Sarstedt & Mooi, 2019). Therefore, the present study uses deductive approach, which entails forming hypotheses and law-like generalizations before gathering empirical data to test (Crowther & Lancaster, 2012) (see Figure 1).

4.1 Research hypotheses

A research framework overview is required before creating hypotheses. The proposed framework for the present study delineates the associations between study variables (IWB, performance of healthcare organizations and transformational leadership). (see Figure 2)

The research framework (Shehata *et al.*, 2021) for the present study argues that the performance of healthcare organizations (dependent variable) is influenced by the IWB of its employees (independent variable), and the relationship is mediated by transformational leadership (mediating variable). The framework also suggests that IWB can be explained by KS and employees' motivations (COMP, AUT and RET). Hence, eight hypotheses will be examined.

The first one is as follows: (**H1**). There is a positive correlation between individuals' work behaviors and the sharing of information in healthcare organizations, which is advantageous.

The subsequent hypothesis (**H2**). There is a connection between an employee's level of expertise and their level of MOT in enterprises that are related to healthcare.

The third possibility (**H3**). There is a positive correlation between AUT and the MOT levels of workers who are employed in healthcare-related industries.

The fourth possible explanation (**H4**). In firms involved in healthcare, RET and employee MOT have been shown to have a positive link with one another.

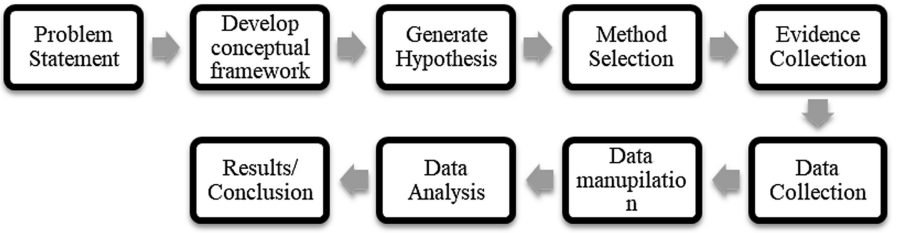

Figure 1.
Research design

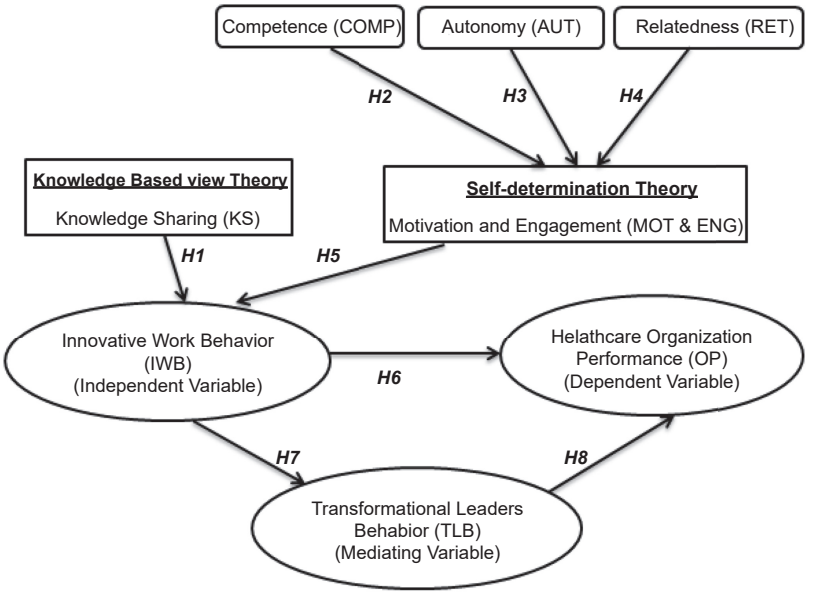

Figure 2.
Conceptual framework

The fifth possibility (**H5**). There is a positive correlation between employee MOT and engagement, as well as their Innovative work environment (IWB), in healthcare firms.

A sixth line of thought (**H6**). There is a connection between the Innovative Work Behavior (IWB) of employees working in healthcare organizations and the success of such businesses.

The seventh hypothesis (**H7**). The implementation of IWB practices among employees of healthcare companies shows a positive link with transformational leadership.

The eighth supposition (**H8**). The performance of healthcare organizations may be improved by the use of transformational leadership, which also has a moderating influence.

4.2 Measurement

Five transformative leadership index statements. House (1998) 's four socialized charismatic leadership subscales highlighted the three transformative traits (inspirational MOT, and intellectual stimulation, idealized influence).IWB consisted of six items developed by Kanter, 2009. A measure of KS behavior scales developed (De Vries, Van den Hooff, & De Ridder, 2006). Task performance was measured with five items (Allen & Rush, 1998; Williams & Anderson, 1991). To evaluate intrinsic MOT, six descriptors typically used to gauge intrinsic work MOT were added. (Cameron & Pierce, 1994).The job AUT (nine items) and task interdependence (five items) were measured by scales validated by Morgeson & Humphrey, 2006; a measure of competency developed by Spreitzer, 1995. Self-evaluation and research population relevance were included to the phrasing. Participants used a 5-point Likert scale from strongly disagree to strongly agree.

4.3 Data collection

Since Saudi Arabian healthcare institutions only gather data once, the cross-sectional time horizon was used in this study. Online survey questionnaires gathered quantitative data for this study from October 2021 to March 2022.

4.4 Procedure

The study was conducted during the period from October 2021 to March 2022 at Dammam Health Network (DHN). Only 587 took part in this present research. The questionnaire was distributed to 218 respondent's males and 369 females who have experience from less than 5 years to more than 16 years. The data was gathered after seeking permission from five different hospitals and 10 different departments. Google sheets were used to gather complete data in a form of survey questionnaire from the respondents via email. All data were input into smart partial least squares (PLS) software. This software was used to analyze the data and generate results and drew conclusions.

4.5 Research variables

This study involved three main types of variables; performance of healthcare organizations (dependent variable), IWB of its employees (independent variable) and transformational leadership (mediating variable) as shown in Table 1.

Type	Variable	Operationalized constructs
Dependent	Performance of healthcare organizations	Employees task performance
Independent	Innovative work behavior	Knowledge sharing behavior
		Employee's motivation
Mediating	Transformational leadership	Effectiveness of transformational leadership

Table 1. Research variables type and operationalized construct

4.6 Study population and sampling

A simple convenience sampling approach was adopted to facilitate the selection of the different hospitals, whereby each hospital has an equal chance or likelihood of being considered in the final sample. To select the study sample, the researchers first generated an exhaustive list of all public hospitals in Saudi Arabia (498 in 2019) (Health, 2020).Thereafter, hospitals were selected randomly located in eastern province, Saudi Arabia for the analysis purposes.

4.7 Validity and reliability

In order to test the consistency of the measurement tools used in this study (survey questionnaires), Cronbach's Alpha will be adopted in an effort to identify the correlation between the different indicators that has shown in Table 2. Its value lies between 0 and 1. The acceptable reliability score being recorded between 0.7 and 1.

5. Analysis and results

This study uses Partial Least Squares Structural Equation Modeling (PLS-SEM) to analyze its quantitative data (v.3.3.7) (Anderson & Gerbing, 1988).Researchers employed a three-step quantitative data analysis process: Descriptive statistics initially, second, validating the measurement model and lastly, structural model testing. These actions are as follows.

5.1 Descriptive statistics

Table 3 reveals the age group of the respondent. 48.6% were 31–41 years followed by 26.7% from 42–52 years, 17.5% from 20–30 years and least 7.2% from above 52 years, respectively. It's obvious that the mainstream of respondents group is between (31–41 years) which may reflect the majority of Saudi populations are within this age group as per Saudi statistics 2019 that almost 50 % of Saudi population is within age (25–54).

Table 4 shows the gender of the respondent. Most 62.9% of the respondents were female while 37.1% were male and all were working in DHN.

Table 2.
Results of reliability and validity test

	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
AUT	0.929	0.955	0.876
COMP	0.898	0.937	0.832
IWB	0.873	0.908	0.665
KS	0.82	0.892	0.734
MOT	0.875	0.91	0.669
OP	0.965	0.973	0.876
RET	0.898	0.928	0.764
TLB	0.979	0.983	0.922

Table 3.
Descriptive statistics results of age

Age group	Frequency	Percent
20 – 30	103	17.5
31 – 41 years	285	48.6
42 – 52 Years	157	26.7
52 years and above	42	7.2
Total	587	100.0

Table 5 illustrates the experience of the respondent. 30.7% of the respondents with experience 11–15 years followed by 28.3% were 5–10 years, 22.1% were 16 years and above and least 18.9% were less than 5 years, respectively (see Table 6).

As illustrated in Table 1, the results demonstrated that the mean of MOT was 3.724 (standard deviation (SD) = 0.937). COMP was a larger component than RET and AUT. The mean of COMP was 4.417 (SD = 0.583). The mean of RET was 4.011 (SD = 0677) and the mean of AUT was 3.034 (SD = 1.319). The findings also suggested that the median of KS was 4.261 (SD = 0.660). This indicates that the impression of sharing the information was strong among the research sample and that the level of choices with five was the maximum level possible. According to the findings, the average score for creative conduct at work was 3.726 (standard deviation = 0.811). This indicates that participants in the research sample had a generally favorable impression of creative work conduct. The results indicated that the mean of the transformational leader's behavior was 2.770 (SD = 1.457). This indicates that the research sample's opinion of the transformational leader's conduct was somewhere in the middle of the spectrum. Additionally, it had the least mean score and the biggest SD among the variables in the proposed investigation. Finally, according to the findings, the overall performance of the companies, which was evaluated in this investigation based on the employees' task performance, had a mean value of 4.496 (standard deviation = 0.740), making it the most important median among the studied variables.

Gender	Frequency	Percent
Male	218	37.1
Female	369	62.9
Total	587	100.0

Table 4. Descriptive statistics results of gender

Experience	Frequency	Percent
Less than 5 years	111	18.9
5 – 10 years	166	28.3
11 – 15 years	180	30.7
16 years and above	130	22.1
Total	587	100.0

Table 5. Descriptive statistics results of experience

Variable	N	Mean	SD
Motivation	587	3.724	0.973
- Competence		4.417	0.583
- Autonomy		3.034	1.319
- Relatedness		4.011	0.677
Knowledge sharing		4.261	0.660
Innovative work behavior		3.726	0.811
Transformational leaders		2.770	1.457
Organizations performance		4.496	0.740

Source(s): Outputs of statistical analysis

Table 6. The descriptive statistics of research variables

5.2 Measurement model

Figure 3 illustrates the correlations between the indicators (items) and the latent variables that these indicators (items) measure, as well as the link that is projected to exist among these variables. It provided evidence of the sharing of information and the measurable aspects of this process. The illustration also suggests that there are three measurable components that make up one's level of MOT: AUT, COMP and RET. It showed the expected connections between the dependent variable, independent variable, the success of healthcare firms and creative work behavior. The behavior of the transformational leader, which was taken into account as a mediating variable, has the potential to have an effect on the connection between the two independent variables.

The research utilized factor loading, composite reliability (CR), and average variance extracted from the data in order to guarantee that these indicators accurately represent their respective latent variables and that the items satisfy the necessary requirements for convergent and discriminant validity using (AVE) Average Variance Extracted, as proposed by Hair, Sarstedt, Pieper, and Ringle (2012). The test resulted in the removal of one item (RET26) from the relevance scale, five items (KS7, KS8, KS9, KS10, KS12) from the sharing knowledge scale, and one item (IWB34) from the creative work behavior scale since they did not meet the needed requirements. The rest of the elements achieved the required standards in accepting the factor loading. Following this, Table 2 lists the converging validity.

Additional validity checks, as suggested by Andreev, Heart, Maoz, and Pliskin (2009), Bollen and Lennox (1991), Diamantopoulos and Winklhofer (2001) and MacKenzie, Podsakoff, and Jarvis (2005). Comparing structural connections to the square root of the structure's AVE, these researchers used discriminatory analysis to determine the extent to which the various compositional metrics varied from one another (Fornell & Larcker, 2021). Table 7 illustrates the results of discriminant validity.

Table 8 indicated that the values in diagonals of the matrix representing the square root of AVEs were in all cases greater than nondiagonal elements in the corresponding row and column. This proves the attainment of the discriminatory validity.

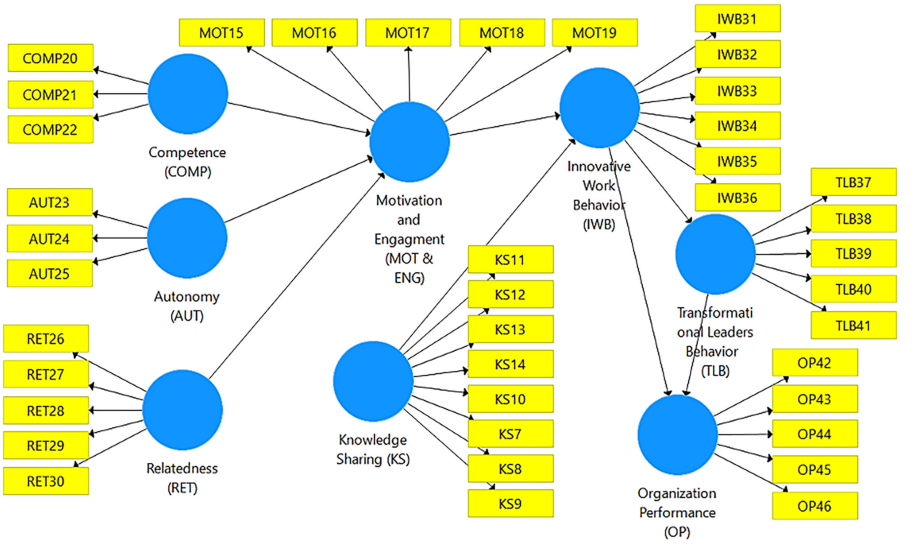

Figure 3.
The measurement model

Item indicators	Type of measure	Item loadings/ weight	Composite reliability (CR)	Cronbach alpha	AVE
Motivation					
MOT15	Reflective	0.774	0.910	0.875	0.669
MOT16		0.880			
MOT17		0.894			
MOT18		0.805			
MOT19		0.727			
Autonomy					
AUT23	Reflective	0.922	0.955	0.929	0.876
AUT24		0.953			
AUT25		0.933			
Competence					
COMP20	Reflective	0.921	0.937	0.898	0.832
COMP21		0.941			
COMP22		0.872			
Relatedness					
RET27	Reflective	0.872	0.928	0.898	0.764
RET28		0.872			
RET29		0.856			
RET30		0.896			
Knowledge sharing					
KS11	Reflective	0.824	0.892	0.820	0.734
KS13		0.881			
KS14		0.865			
Innovative work behavior					
IWB31	Reflective	0.852	0.908	0.873	0.665
IWB32		0.871			
IWB33		0.801			
IWB35		0.791			
IWB36		0.756			
Transformational leaders behaviors					
TLB37	Reflective	0.953	0.983	0.979	0.922
TLB38		0.970			
TLB39		0.962			
TLB40		0.962			
TLB41		0.954			
Organization performance					
OP42	Reflective	0.911	0.973	0.965	0.876
OP43		0.907			
OP44		0.948			
OP45		0.959			
OP46		0.954			
Average		–	–	–	0.884

Source(s): Outputs of statistical analysis using Smart PLS software

Table 7. Results of discriminant analysis to examine the degree of variation

5.3 Goodness of fit (GoF) of the model

GoF is the geometric mean of both the AVE and the endogenous variables average R2, (Tenenhaus, Vinzi, Chatelin, & Lauro, 2005). The GoF evaluates the research's computing and

structural model, focusing on model performance (Chin, 2010; Henseler, Ringle, & Sinkovics, 2009). The formula for calculating GoF is as follows:

$$\text{GoF} = \sqrt{\left(\overline{R^2}\right) \times \overline{\text{AVE}}}$$

The validity of the PLS model is determined by the GoF criterion (below 0.1 = no fit, between 0.1 and 0.25 = little fit, between 0.25 and 0.36 = medium fit and above 0.36 = large fit) (Wetzels, Odekerken-Schröder, & Van Oppen, 2009). The model's global PLS validity was satisfactory based on its GoF (0.569).

The above Table 9 showed that All constructs' correlation was evaluated using the saturated model. The estimated model was a total effect-based model that takes model structure into consideration. Thus, the fit measure was constrained. According to Lohmoller, PLS-SEM does not make strong residual covariance assumptions while estimating the model (2013) (Lohmöller, 2013). The common factor model requires uncorrelated outer residuals for the above table. These conditions surpass a threshold. The model fit if standardized root mean square residual (SRMR) was less than 0.10 or 0.08. This difference may be calculated using the squared Euclidean distance (d ULS) or geodesic distance (d G). Our model is acceptable since the gap between the correlation matrix predicted by our model and the actual correlation matrix was so little that it may be attributed to sampling error. Thus, our model's correlation matrix does not differ from the real correlation matrix ($p > 0.05$). The model was reasonable and fit with an Normed Fit Index (NFI) of 0.853, close to 0.9.

6. Structural model

Structural models may examine latent variable relationships, model disruptions and specialized paths. Table 10 shows structural model path coefficient and regression results.

As can be seen in Table 10, there was a positive link between KS and creative work behavior in the DHN. The standard deviation was 0.357, and the p-value was less than 0.001, thus this indicates a significant level of statistical significance. Table 10 also indicates that

Table 8. Outputs of statistical analysis of discriminate validity

	AUT	COMP	IWB	KS	MOT&ENG	OP	RET	TLB
AUT	*0.936*							
COMP	0.378	*0.912*						
IWB	0.566	0.466	*0.774*					
KS	0.334	0.518	0.519	*0.722*				
MOT	0.661	0.557	0.569	0.467	*0.818*			
OP	0.258	0.472	0.518	0.425	0.344	*0.936*		
RET	0.405	0.483	0.542	0.517	0.517	0.359	*0.827*	
TLB	0.761	0.380	0.540	0.305	0.720	0.205	0.346	*0.960*

Source(s): Outputs of statistical analysis using Smart PLS software

Table 9. Goodness of fit indices

	Saturated model	Estimated model
SRMR	*0.055*	0.149
d_ULS	1.712	12.447
d_G	*0.890*	1.200
Chi-Square	3013.352	3559.555
NFI	*0.853*	0.826

there was a positive relationship between the COMP and MOT since Std. Beta was (0.285) and p-value was (<0.001). There was a positive relationship between AUT and (MOT) since Std. Beta was (0.478) and p-value was (<0.001). Furthermore, there was a positive relationship between RET and MOT since Std. Beta was (0.185) and p-value was (<0.001). It obvious the relationship comes from AUT more that COMP and RET since the AUT path coefficient (Std. Beta) on MOT was (0.478) compared with 0.285 and 0.185 for COMP and RET respectively.

Table 10 demonstrates that there was a positive relationship between the MOT and IWB since Std. Beta was (0.364) and p-value was (<0.001). Table shows that there was a relationship between IWB and OP since Std. Beta was (0.568) and p-value was (<0.001). This relationship comes almost equally from MOT and KS by 0.364 and 0.357, respectively. Table shows there was a positive relationship between IWB and transformational leaders behavior (TLB) since Std. Beta was (0.467) and p-value was (<0.001). As a result of the above analysis and interpretation the hypotheses from H1 to H7were accepted. Finally, table directs that there was no relationship between transformational leader's behavior OP since Std. Beta was (−0.06) and p-value was (0.12) taking into consideration the OP in this study was measured by employees task performance (ETP). This means Hypothesis (8) is rejected. Therefore, the TLB was not mediating the relationship between the innovation work behavior and OP since the total of direct and indirect effect were insignificant $p = 0.122$ and$p = 0.139$, respectively.

To determine how construct size and TLB size affect creative work behavior and organization performance characteristics (Chin, 1998) effect size interpretation (f^2) (Cohen, 2013), significant impact size was $f2 > 0.35$. $f2$ values between 0.15 and 0.35 suggested a moderate influence. $f2$ between 0.02 and 0.15 is considered minor. Table 11 shows that $f2$ values below 0.02 have little impact size.

Table 11 showed that AUT has a large effect on MOT and also the IWB on OP has a large effect as well, while the effect of COMP on MOT, IWB on TL, the KS on IWB and MOT on

Hypo		Std. beta	t-Value	p-values	Decision
H1	KS → IWB	0.357	7.241	$p < 0.001$**	Supported
H2	COMP → MOT	0.285	7.241	$p < 0.001$**	Supported
H3	AUT → MOT	0.478	15.735	$p < 0.001$**	Supported
H4	RET → MOT	0.185	4.648	$p < 0.001$**	Supported
H5	MOT → IWB	0.364	8.781	$p < 0.001$**	Supported
H6	IWB → OP	0.568	13.247	$p < 0.001$**	Supported
H7	IWB → TLB	0.467	14.42	$p < 0.001$**	Supported
H8	TLB → OP	−0.06	1.548	0.122	Not Supported

Note(s): Significant at **$p = < 0.01$
Source(s): Outputs of statistical analysis using Smart PLS software

Table 10. Structural model's path coefficient and regression results

Constructs	Effect size- f^2	Results
AUT → MOT	0.424	Large effect size
COMP → MOT	0.135	Medium effect size
RET → MOT	0.056	Small effect size
IWB → OP	0.358	Large effect size
IWB → TLB	0.278	Medium effect size
KS → IWB	0.16	Medium effect size
MOT → IWB	0.167	Medium effect size
TLB → OP	0.004	No effect size

Table 11. Results of effect size f^2

IWB was medium effect. The small effect was RET on MOT. While, the TL has no leaders on OP. This means the employee task performance was not affected by the negative relationship of transformational leader's behavior.

Additionally, the researchers looked at predictive relevance ($Q2$), which was 0.250, to gauge how well independent factors may anticipate the dependent variable. According to (Chin, 2010), the model predictive was acceptable.

Furthermore, R squared value, commonly known as the coefficient of determination, was another essential PLS-SEM criterion (Hair, Ringle, & Sarstedt, 2011, 2012; Henseler *et al.*, 2009). R-squared measures how much variation in dependent variables can be explained by predictor variables (Elliott & Woodward, 2007). Chin (1998) recommended that $\boldsymbol{R}^2$ levels above 0.67 are high, values between 0.33 and 0.67 are moderate, and values below 0.19 to 0.33 are weak, and an All $\boldsymbol{R}^2$ values less than 0.19 are unacceptable. Therefore, Table 12 showed all results for $\boldsymbol{R}^2$ were acceptable since all results are above 0.19. IWB and MOT were moderate, whereas organizational performance and TL were weak.

Figure 4 represented the final structural model of the research, based on the analysis and findings.

Table 12.
Results of R-square of coefficient determination

Constructs	R square (R^2)	Result
IWB	0.383	Moderate
MOT	0.571	Moderate
OP	0.295	Weak
TLB	0.218	Weak

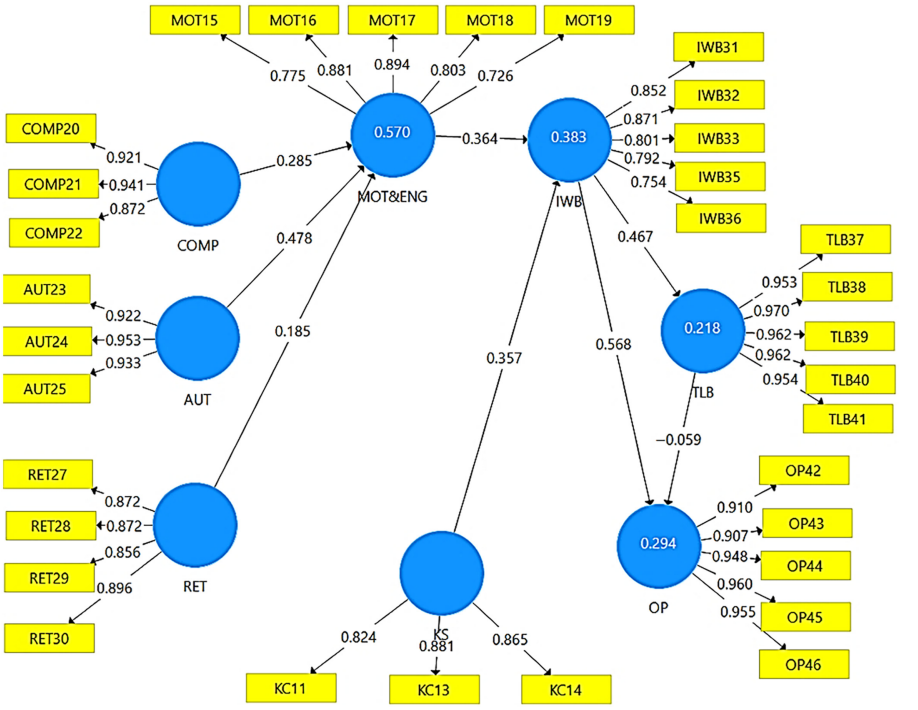

Figure 4.
Final structural model

As shown above, the structural model Figure 4 results enable us to determine, the IWB has the strongest effect on organization performance (OP) (0.568). Moreover, IWB construct explained 29.4% of the variance of the endogenous construct OP ($R^2 = 0.294$), as indicated by the value in the circle. MOT and KS have effect (0.364) and (0.357) respectively, they also jointly explained 38.3% of the variance of IWB. Furthermore, the IWB has effect (0.467) which explained 21.8 % of the variance of TL. COMP, AUT and RET have effect (0.285), (0.478) and (0.185) correspondingly explained 57.0 % of the variance of MOT. Based on their sizes, it would appear that the relationships IWB → OP, MOT → IWB, IWB → TLB and KS → IWB were significant. But it seems very unlikely that the hypothesized path relationship TLB → OP (−0.059) was not significant. As a rule of thumb, path coefficients with standardized values above 0.20 were usually not significant, and those with values below 0.20 were usually not significant.

7. Discussion and implications

The aim of this study was to explore the influence of IWB on healthcare organizations in Saudi Arabia healthcare in the presence of TL as a mediating factor. The study results supported a positive relationship between KS and IWBs of healthcare system employees. Akram *et al.* (2016) and Asurakkody and Kim (2020) found a link between KS and innovative work. They concluded that how an organization treats its people, encourages information sharing and manages staff affects employee innovation. They further claimed that how employees perceive their employer affects their innovative behavior (Akram *et al.*, 2016; Asurakkody & Kim, 2020). When treated fairly, they become innovative; when they feel unfairly treated, they cannot share their knowledge, which hinders innovation. Meanwhile, Asurakkody and Kim (2020) identified a positive relationship between innovative work habits and information sharing. Self-leadership entails purposefully influencing one's thinking, feeling, emotions, perceptions and behaviors. Self-leadership influences employees' ability to share information in the organization, favorably affecting innovative work habits. When employees exchange knowledge that influences their thoughts and actions, they become inventive (Asurakkody & Kim, 2020).

The study found a favorable relationship between COMP, AUT and RET to the employees' MOT in healthcare organizations. This finding is consistent with the findings of previous studies. For instance, Deci, Olafsen, and Ryan (2017) reported that the relative internalization of extrinsically motivated activities was a function of perceived COMP such that a person was more likely to assume tasks or activities that social groups valued, which occurred when such groups became efficacious as a product of such activities. Such findings seem to agree with those of Deci *et al.* (2017) and Martin, Byrd, Wooster, and Kulik (2017) concerning intentional actions – namely, any support derived from COMP should be able to facilitate internalization. Furthermore, the findings by Deci *et al.* (2017), Martin *et al.* (2017) and Wang *et al.* (2021) suggest that individuals who demonstrate intrinsic MOT have higher achievement levels and show higher perceptions of engagement and COMP when performing their roles, which may then translate to enhanced IWB.

Another study also revealed that need satisfaction (AUT, COMP, RET) influenced one's intrinsic MOT, which then shaped IWB. This finding confirmed the notion that MOT and engagement promote innovative work in healthcare organizations (Devloo, Anseel, De Beuckelaer, & Salanova, 2015). According to Wang *et al.* (2021), the employee becomes sensitive to continual negative feedback, thereby diminishing their MOT, encouragement and engagement in their work and hurting their potential to engage in IWBs. Thus, MOT and engagement impact employees' IWBs (Wang *et al.*, 2021).

The findings also supported the hypothesis that a relationship exists between employees' IWBs and organizational performance. The previous research studies support this finding. According to Szulawski, Kaźmierczak, and Prusik (2021), the three psychological demands –

AUT, RET, and COMP, – differ in terms of how the existing work environment fosters employee job satisfaction, hence boosting individual performance in the business. (Szulawski *et al.*, 2021). Fernet (2013) found that providing psychological resources can influence employees' motivations when executing their tasks in the organization. However, AUT can increase the chances of errors and mistakes in a healthcare organization, where informed decisions are limited to the supervisors (Fernet, 2013). Nevertheless, employees' MOT and engagement facilitate IWB, which can influence organizational performance.

According to these researchers, a nurse with transformational leadership qualities is more effective (Koteyko & Carter, 2008). Fischer, Dietz, and Antonakis (2017) stated that adopting transformational leadership practices would boost employee MOT and teamwork. It can also improve facility nurse results (Fischer *et al.*, 2017).

The present study did not support the claim that transformative leadership directly affects healthcare organizations' performance with regard to employees' task performance in healthcare facilities. The study found that employment MOT boosts task performance. Although studies revealed numerous leadership styles, transformational leadership (TL) is the most prevalent approach used by businesses to accomplish change (Kejriwal & Krishnan, 2004; Sarros & Santora, 2001). It inspires followers through role model behavior, intellectual stimulation and personal care. Transformational leadership also humanizes knowledge-sharing by supporting activities, modeling knowledge-sharing and providing opportunities for it (Fullwood, Rowley, & Delbridge, 2013; Yao, Kam, & Chan, 2007). Transformational leadership indirectly affects employee task performance. The study indirectly demonstrates a link between transformative leadership and employee task performance.

The implications of the present study findings may allow healthcare leaders to better understand the factors that lead to idea generation and foster employee innovativeness to generate more evidence-based strategies that provide lasting solutions to the current healthcare challenges. The results of this study present practical empirical evidence for healthcare system human resource management professionals who seek to create an enabling environment in which to promote IWB in order to enhance organizational performance.

8. Limitations

(1) The present study accomplished its aims using questionnaires, however bias was a danger. The research relied on participant answers. No standard existed to verify their veracity, increasing the likelihood of dishonest responses.

(2) Another limitation of this study is that it was conducted exclusively within a select healthcare organization in Saudi Arabia, which restricts the findings' generalizability.

(3) Finally, the Covid-19 pandemic impacted the ability to reach many participants. The restrictions related to mobility and social distancing limited the researcher's ability to reach a more comprehensive population of participants to increase the chances of data validity.

(4) Thus, the research findings might be biased by geographical action and participants' demographics as well as psychologically.

9. Conclusion and recommendation

(1) The findings of this study give useful empirical data for human resource practitioners and policymakers in the healthcare sector who want to encourage creative work behavior to enhance organizational performance.

(2) This study has provided the knowledge and foundation for Saudi Arabian enterprises seeking agreeable answers to current medical concerns to improve performance and sustain competitive advantages.

(3) Due to the limitations of this study, it would be helpful to conduct further research across many healthcare organizations in Saudi Arabia to generalize the findings and their applicability in other locations or healthcare settings.

(4) Future researchers could explore the possibility of conducting longitudinal studies based on mixed methods to further expand the findings from this research.

(5) Future studies should also explore how open innovations facilitate the fast and effective collection, sharing, and analysis of a large amount of health data from a wide range of respondents.

(6) They should identify whether the existing innovations support the efficient monitoring of health issues and the implementation of reliable solutions that facilitate the provision of quality, equitable and effective care.

(7) As providing health care services is a form of business, the public private partnership business model should be extensively studied to evaluate whether it aligns with Saudi Arabia's Vision 2030 and explore its impacts on IWB and healthcare organizations' performance.

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