



The Mediating Effects of Knowledge Sharing: The Causal Relationship of Transformational Leadership and Organizational Culture with Innovative Work Behaviors: A Case Study of Airfreight Organizations in Thailand

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Received: 9 May 2024; Revised: 30 July 2024; Accepted: 6 August 2024; Available Online: 3 September 2024

Abstract

This quantitative research aims to investigate the relationship between transformational leadership and organisational culture with innovative work behaviours. The mediating role of knowledge sharing is examined. Data were collected from 396 participants who work in 21 logistics firms that are members of the Thai Airfreight Forwarders Association. Data were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM). Results reveal that transformational leadership and organisational culture significantly affect innovative work behaviors in organisations. Furthermore, knowledge sharing amongst colleagues mediates such relationships. These findings add to the study of innovative work in the logistics industry. In addition, this study benefits HR in logistics firms in Thailand to focus on knowledge sharing to enhance innovative work behaviours. Implications are discussed in two folds, namely, theoretical and practical implications.

Keywords: Transformational Leadership, Organisational Culture, Knowledge Sharing, Innovative Work Behaviours, Airfreight Organizations

Introduction

Airfreight organizations in Thailand are members of the Thai Airfreight Forwarders Association (TAFA). The objective is to transport air cargo that responds to the country's economic needs. Currently, air cargo transportation is growing. The volume of air cargo transportation in the 2nd quarter of 2022 (April–June) still tends to grow continuously from the 1st quarter (January–March). In the 2nd quarter, there was a total air cargo volume of 323.49 million tons, an increase of 5.49 million tons or an increase of 1.7 percent compared to the first quarter, with the volume of domestic air cargo transport being 7.22 million tons or a decrease of 20.9 percent. From the first quarter, the volume of international air cargo transported amounted to 316.27 million tons, or an increase of 2.21 percent. For comparison of air cargo volumes in the second quarter of 2021, it was found that there was air cargo volume in the overall picture is 283,879 tons, of which 278,917 tons are international air cargo (Department of Airports, 2022), which shows the expansion of air cargo that affects the national economy. Therefore, in response to the expansion of the economy, it is the mission of the organization. Human resource development departments in various organizations need to develop employees to be ready to create good results for the organization in terms of skills, knowledge, and supportive behaviours of organizational vision.

Innovation is crucial for organisations to grow, achieve business excellence and boost effectiveness and efficiency (Cozzarin, 2022). It can take various forms, including innovations in products, processes, marketing, business models, supply chain and the organisation (Nogueira et al., 2022). Particularly, organisational innovation has been found to enhance firm performance and increase the likelihood of introducing product and process innovations (Yordanova, 2022). To foster innovation, organisations should focus on creating a supportive

organisational culture and mindset that encourages employees to internalise innovation (Sayyadi & Provitera, 2023). This innovation involves organising innovation processes effectively and involving the entire workforce in the innovation efforts. Senior management support, team efforts and a culture for innovation are essential for organisational innovativeness and the ability to innovate. Digitalisation and long-term continuous improvement through an innovation mindset are also important for successful organisational innovation.

Innovative work behaviours involve tasks such as idea generation, idea promotion, and idea realisation. Innovative work behaviours are influenced by individual factors, organisational context and the interaction between the two (Messmann, 2012; Jose & Mampilly, 2016; Pudjarti & Hutomo, 2020). It is considered a key element for the development of innovations and maintaining competitive advantage (Gupta, 2014). Factors such as self-efficacy, person-job fit, person-organisation fit and person-group fit can influence innovative work behaviours. High-quality leader-member exchange relationships can also play a role in facilitating innovative work behaviours, along with pro-social motivation, learning and vitality. Understanding and measuring innovative work behaviours is important for organisations to foster a culture of innovation and improve job performance.

From the existing literature review, various factors have been found to influence innovative work behaviours. Coun et al. (2022) found that leadership influences innovative work behaviours amongst technology companies in the Netherlands. The result indicated that leaders in decision-making empowerment induce innovative work behaviours. Similarly, Messmann et al. (2022) stated that leadership for change influences innovative work behaviours. Scaliza et al. (2022) found that organisational culture can foster innovative work behaviours. In the same vein, Derin et al. (2022) found that knowledge sharing affects innovative work behaviours. A review of the literature indicated that knowledge sharing in an organisation leads to innovative work behaviours. Using technology-based approaches, Scaliza et al. (2022) and Lam et al. (2021) showed that empirical evidence is still needed on the relationship between transformational change and innovative work behaviours in the global context. Notably, the antecedent of innovative work behaviours in an organisation remains unclear, as well as the most influential factor to drive the desired behaviours. Thus, the objective of this study, which is derived from the research gap, is to find more empirical evidence. The conceptual framework was integrated, as shown in Figure 1. Transformational leadership, organisational culture and knowledge sharing have been brought to the attention as the antecedent of innovative work behaviours. Three research questions were formulated: a) Does transformational leadership influence employees' innovative work behaviours? b) Does organisational culture influence employees' innovative work behaviours? c) Finally, does knowledge sharing mediate the relationship between transformational leadership, organisational culture and employees' innovative work behaviours?

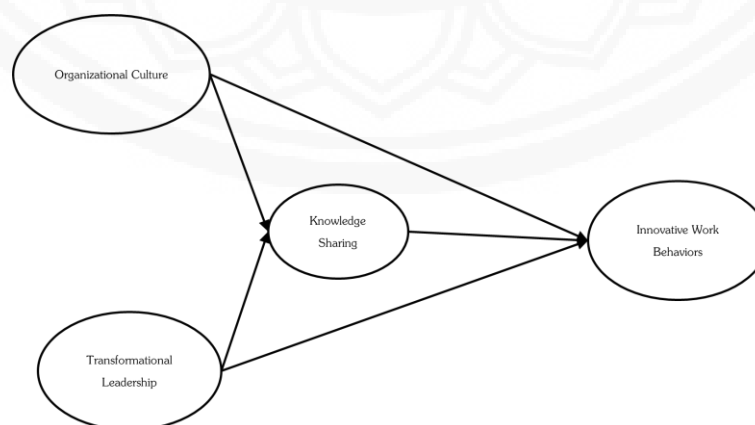


Figure 1 Conceptual Framework.



Literature Review

Transformational Leadership and Innovative Work Behaviours

Transformational leadership refers to the processes that leaders use to improve and transform employees to meet organisations' goals and objectives (Northouse, 2016). Therefore, organisations should assess employees' perceptions of the leadership process that is linked to the way leaders drive employees or their followers in an organisation. Thus, transformational leadership is an integrated process between a leader's personal attributes and vision. Northouse (2016) suggested that transformational leadership has an influence from the individual to the organisational level. Jangsiriwattana (2019) found that transformational leadership influences employee engagement and job satisfaction, which affects organisational performance. However, the process of transformational leadership requires the cooperation of leaders and followers. Bass (1985) found that transformational leadership consists of four elements: a) idealised influence. Leaders behave in ways that allow them to serve as role model for their followers, b) inspirational motivation. Leaders behave in ways that motivate and inspire those around them by providing meaning and challenge to their followers, c) intellectual stimulation. Leaders stimulate their followers' effort to be innovative and creative by questioning assumption, reframing problems, and approaching old situations in new ways, and d) individualised consideration. Leaders pay special attention to each individual follower's needs for achievement and growth by action as a coach or mentor.

Innovative work behaviours refer to the involvement of employees in the organisation in developing new products or processes that are truly beneficial to the organisation, an activity called innovation. This participation requires physical and intellectual activities. It may be performed individually or in teams to generate ideas and create opportunities that are aligned with the objectives of the organisation. The organisation provides support to create further improvements (Messmann et al., 2022). In a literature review, Messmann et al. (2022) found that innovative behaviours have four components: a) idea development, which is the creation of new ideas, aiming to solve problems or complete work that is different from traditional methods, b) feasibility of ideas, which values creative ideas in relation to the needs of an organisation, c) fostering new ideas, which is providing support to individuals or teams who develop creative ideas, and d) bringing ideas to life, which implies giving others in the organisation the opportunity to experience or try the newly created product or process.

Masood and Afsar (2017) conducted a study involving a group of nurses. Their result revealed that transformational leadership influences innovative work behaviours. This finding is in line with the Afsar and Umrani's (2020) study on business organisations in Pakistan. However, Messmann et al. (2022) did not find a direct relationship between transformational leadership and innovative work behaviours. Nevertheless, the transformational leadership theory suggests that transformational leadership positively affects organisational performance at the individual and team levels (Jangsiriwattana, 2019). Therefore, further empirical evidence is required to confirm such a relationship, which is one of the objectives of this research, as indicated by Hypothesis 1.

Hypothesis 1: Transformational leadership influences innovative work behaviours.

Organisation Culture and Innovative Work Behaviours

Organisational culture refers to a group of values, ideas, beliefs and processes within an organisation that determines how people think, act or behave in that organisation (Lam et al., 2021). Many academic groups have studied to create an organisational culture assessment questionnaire. Lam et al. (2021) found that limitations still exist in creating and using organisational culture assessments due to the diversity and differences in the context of each organisation. They used the organisational culture assessment developed by Lee and Choi (2003) and

performed validation tests in IT companies in Vietnam. The research defined organisational culture based on the following elements: a) membership within an organisation, defined as the level of cooperation amongst members in an organisation, b) mutual trust, defined as a shared belief that you can depend on each other to achieve a common purpose, and c) intraorganisational learning, which refers to the degree to which the organisation encourages members to actively share knowledge.

Stoffers et al. (2015) found that organisational culture has a significantly positive correlation with innovative work behaviours. However, they did not determine whether organisational culture influences innovative work behaviours. Lam et al. (2021) studied the influence of organisational culture on the innovation ability of employees in IT companies in Vietnam. The result indicated that organisational culture significantly influences employee innovation ability through Knowledge Management (KM) within the organisation. Azeem et al. (2021) found that the competitiveness of organisations in the textile industry in Pakistan will be achieved if the organisation can increase the level of organisational innovation. They showed that organisational culture can explain 47.6% of organisational innovation. Thus, Hypothesis 2 was developed.

Hypothesis 2: Organisational culture influences innovative work behaviours.

Mediating Role of Knowledge Sharing

Knowledge sharing is a process of passing on technical knowledge that affects work accomplishment to other members of the same organisation. It aims to reduce work problems or create new processes. Thus, the new process will result in changes in work processes or policies within the organisation (Derin et al., 2022). Knowledge sharing is one of the four processes in KM. Sharing knowledge within an organisation requires management support. However, the organisation must have knowledge or information to share. Derin et al. (2022) defined the two components of knowledge sharing including (a) explicit knowledge which is demonstrated by the recall of knowledge in a specific moment, and (b) tacit knowledge which represents the internalised knowledge embedded in each individual. Cheng and Chang (2020) proposed that KM activities in organisations consist of a) knowledge division of the organisation, b) transfer and flow of knowledge, c) knowledge creation, and d) knowledge sharing, thereby establishing the basis for knowledge sharing (p. 382). They concluded that knowledge sharing amongst employees, through various channels within the organisation, will benefit organisations, especially by enabling them to achieve the objectives of creating innovation.

Existing research has shown that knowledge sharing affects business success (Zhang, 2018; Derin et al., 2022). Derin et al. (2022) found that knowledge sharing can explain 46.4% of innovative work behaviours, which is consistent with previous studies by Carmeli et al. (2013) and Munir and Beh (2020). However, Derin et al. (2022) revealed that knowledge sharing affects employees' innovative work behaviours through the internal environment. Azeem et al. (2021) found that knowledge sharing within an organisation plays a role as a mediator between organisational culture and organisational competitiveness. This study, therefore, developed a conceptual framework to test the mediating role of knowledge sharing, as indicated by Hypotheses 3 and 4.

Hypothesis 3: Knowledge sharing mediates the relationship between transformational leadership and innovative work behaviours.

Hypothesis 4: Knowledge sharing mediates the relationship between organisational culture and innovative work behaviours.



Methods

Participants and Procedure

Data were collected using a questionnaire with convenience sampling approach from 21 logistics companies, which are the members of Thai Airfreight Forwarders Association of Thailand (TAFE). The original questionnaire was in English. Following the recommendation of Rovinelli and Hambleton (1976) and Turner and Carlson (2003), the questionnaire was translated into Thai by a committee of three Thai professors who are expert in English. An index of item-objective congruence was evaluated by three Thai professors who have expertise in organisation development. A total of 500 sets of questionnaires were sent to the participants via HR function, and 420 sets of questionnaires were returned. The final data were compiled from 396 employees in 21 logistics firms, which are TAFE members.

Measurement

Transformational Leadership was measured using 20 items adopted from Bass and Avolio (1995) and Jangsiriwattana (2019). Sample statements include 'My leader instils pride in me for being associated with him/her', and 'My leader talks optimistically about the future'.

Organisational Culture was measured using six items adopted from Lee and Choi (2003) and Lam et al. (2021). Sample statements are 'Our organisation members are satisfied by the degree of collaboration', 'There is a willingness to collaborate across organisational units within our organisation', and 'Our company members have reciprocal faith in others' ability'.

Knowledge Sharing was measured using five items adopted from Yang et al. (2020). Sample statements include 'I share my knowledge and experiences with my colleagues on a regular basis', 'I share my problems about my classrooms training with other colleagues', and 'I discuss with my colleagues our criteria that we use to function well'.

Innovative Work Behaviours were measured using six items adopted from Rafique et al. (2022) and Scott and Bruce (1994). Sample statements include 'While working in this institution, I have come up with innovative and creative notions'; 'While working in this institution, I try to propose my creative ideas and convince others'; and 'While working in this institution, I seek new service techniques, methods or techniques'.

Demographic Analysis

The final data were compiled from 396 employees in 21 logistics firms, which are TAFE members. A total of 500 sets of questionnaires were sent to the participants via HR function, and 420 sets of questionnaires were returned. After data screening, 396 sets of questionnaires were usable. Of this, 43.4% were male ($n = 172$) and 56.6% were female ($n = 224$). A total of 56.8% ($n = 225$) have been working in the industry for 1–15 years, and 43.2% ($n = 171$) have been in the industry for more than 16. About 43.2% ($n = 171$) of the respondents were 21–35 years of age, 56.8% of them were more than 35 years of age ($n = 225$) and most of them had completed a university degree (98%, $n = 384$).

Reliability and Validity

Data were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM), which is often used to test and predict dependent variables (Wong, 2019). Table 1 summarises the reliability and validity analysis, including loadings of indicators, composite reliability (ρ_A), convergent validity (AVE) and Cronbach's alpha. The loadings of indicators indicate that all values should be higher than 0.40 (Wong, 2019).



As a result, items with factor loadings less than 0.4 were removed. The rho_A coefficient should be 0.70 or higher, and the AVE should be 0.50 or higher. In this study, the AVE value of the TFL is lower than 0.5, but its rho_A is higher than 0.6. The Cronbach's alpha value of all variables after items were deleted is 0.700 or higher, which is good (Berbie, 2024).

Table 1 Results of Reliability and Validity Analyses

Variable (s)	Indicators	Factor Loadings	rho_A	AVE	Cronbach's Alpha
Transformational Leadership (TFL)	tfl1*	0.166	0.833	0.400	0.805
	tfl2*	0.016			
	tfl3*	-0.036			
	tfl4*	0.374			
	tfl5	0.649			
	tfl6	0.582			
	tfl7	0.526			
	tfl8*	0.078			
	tfl9	0.511			
	tfl10*	0.399			
	tfl11	0.705			
	tfl12*	0.229			
	tfl13*	0.365			
	tfl14	0.720			
	tfl15	0.753			
	tfl16*	0.087			
	tfl17*	0.097			
	tfl18	0.581			
	tfl19	0.508			
	tfl20*	0.258			
Organizational Culture (OC)	oc1*	0.299	0.819	0.627	0.702
	oc2*	0.220			
	oc3*	-0.111			
	oc4	0.430			
	oc5	0.923			
	oc6	0.903			
Knowledge Sharing (KS)	ks1	0.718	0.763	0.500	0.700
	ks2	0.718			
	ks3	0.727			
	ks4	0.634			
	ks5	0.628			
Innovative Work Behaviors (IWB)	iwb1	0.881	0.890	0.628	0.870
	iwb2	0.811			
	iwb3	0.713			
	iwb4	0.799			
	iwb5	0.778			
	iwb6	0.765			

Note: *items deleted as factor loadings less than 0.4



Hypothesis Testing

PLS-SEM was used to test the hypothesis. The result is shown in Figure 2. Then, hypothesis testing was performed.

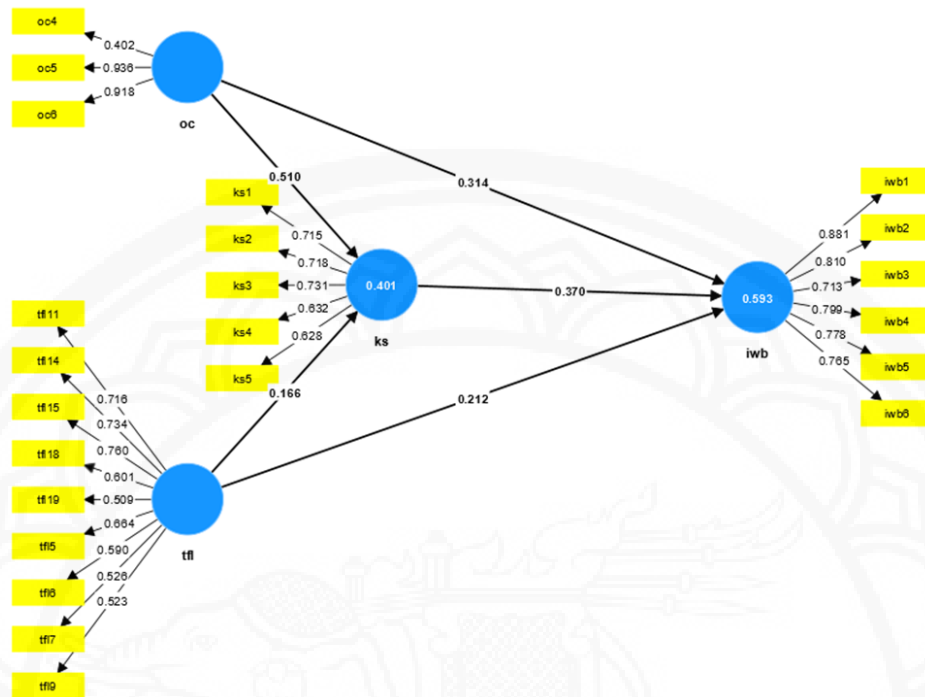


Figure 2 Hypothesis Testing.

Note: $n = 396$; All paths are significance at p value level < 0.001 .

a) Direct effects of transformational leadership and organisational culture on innovative work behaviours.

In the section below, direct effect was determined by examining the path coefficients and related statistics via the bootstrapping procedure (Wong, 2019). The results indicate that all of the structural model relationships are significant, as presented in Table 2.

Table 2 Significance Testing Results of the Direct Effect

Hypothesis	Path	Path Coefficients	t -values	Significance Levels	p -values	Results
H1	TFL \rightarrow IWB	0.641	22.933	**	0.000	Accepted
H2	OC \rightarrow IWB	0.687	22.933	**	0.000	Accepted

Note: $n = 396$; ** p value level < 0.001

b) Mediating effect of knowledge sharing. Following the mediation procedure of Preacher and Hayes (2008), two steps were performed: a) the significance of direct effect was initially checked, and b) the significance of the indirect effect associated with t -values was then checked using the path coefficient when the mediator is included in the model, as shown in the results presented in Table 3. The results indicate that 40.50% of transformational leadership effect on innovative work behaviours can be explained by knowledge sharing. Simultaneously, 36.40% of organisational culture effect on innovative work behaviours can be explained by knowledge sharing. According to Hair et al. (2022), given that VAF is larger than the 20% threshold level ($VAF = 0.405$ and 0.364), knowledge sharing was considered to have a mediating effect on innovative work behaviours. Therefore, H3 and H4 are accepted.

**Table 3** Results of the Mediation Analysis

Procedure		Path	Path Coefficient	Indirect Effect	STDEV	Total Effect	VAF	t-value	p-value
OC → KS → IWB	Step 1: Direct								
	Effect (without mediator)	OC → IWB	0.687	n/a	0.026	n/a	n/a	26.424	0.000
	Step 2: Indirect	OC → IWB	0.435	0.250	0.031	0.685	0.364	7.953	0.000
	Effect (with mediator)	OC → KS	0.620						
		KS → IWB	0.403						
TFL → KS → IWB	Step 1: direct								
	Effect (without mediator)	TFL → IWB	0.641	n/a	0.028	n/a	n/a	22.933	0.000
	Step 2: Indirect	TFL → IWB	0.383	0.261	0.033	0.644	0.405	7.997	0.000
	Effect (with mediator)	TFL → KS	0.615						
		KS → IWB	0.425						

Note: n = 396

After model verification and hypothesis testing analysis have been performed, the summary of hypothesis testing was displayed in Table 4 below.

Table 4 The Summary of Hypothesis Testing

Hypothesis	Path	Standardized	t-value	p-value	VAF	Result
H1	TFL → IWB	0.641	22.933	0.000	n/a	Accepted
H2	OC → IWB	0.687	26.424	0.000	n/a	Accepted
H3	TFL → KS → IWB	0.644	7.997	0.000	0.405	Accepted
H4	OC → KS → IWB	0.685	7.953	0.000	0.364	Accepted

Discussion

The results would be discussed based on the existing theories and previous works that were reviewed as follows.

Research Question 1: Does transformational leadership influence employees' innovative work behaviours?

The transformational leadership theory suggests that transformational leadership positively affects organisational performance at the individual and team levels (Jangsiriwattana, 2019). This study showed that 64.10% of transformational leadership can explain employees' innovative work behaviours. Although the effect is small, transformational leadership contributes to innovative work behaviours in the logistics firms in Thailand. Leaders have been seen as a role model for their followers. They stimulate and motivate their followers by individualised consideration. Transformational leadership encourages employees to take initiative, think creatively and take risks in achieving organisational goals, which, in turn, promotes innovative work behaviours. However, different subcomponents of transformational leadership have varying influences on the different phases of innovative work behaviours (Deprez et al., 2023). In conclusion, transformational leadership plays a crucial role in influencing employees' innovative work behaviours, leading to improved employee performance and organisational success.

Research Question 2: Does organisational culture influence employees' innovative work behaviours?

The result shows that organisational culture can explain 68.70% of employees' innovative work behaviours, which is in line with the result of Lam et al. (2021). The presence of a supportive organisational culture encourages employees to engage in innovative behaviours, leading to improved performance and outcomes. Therefore,



organisations should focus on fostering a positive organisational culture and providing adequate support to employees to enhance their innovative work behaviours. Organisations may develop supporting practices to encourage employees' innovative work behaviours, such as implementing supporting policies, having training programs or providing a supporting compensation package. However, organisational culture influences employees' innovative work behaviours through several mediators. Ekmekcioglu and Öner (2024) found that servant leadership and innovative organisational culture positively affect employees' innovative work behaviours, with perceived organisational support mediating this relationship.

Research Question 3: Does knowledge sharing mediate the relationship between transformational leadership, organisational culture and employees' innovative work behaviours?

Transformational leadership positively affects knowledge sharing, which, in turn, positively influences innovative work behaviours. This result shows that 64.40% of transformational leadership can explain innovative work behaviours through knowledge sharing, slightly higher than only transformational leadership itself (64.10%). Transformational leadership encourages, stimulates and motivates employees to exhibit their innovative work behaviours. However, knowledge sharing within organisations can enhance employees' innovative work behaviours. Knowledge sharing creates a sharing community and makes employees feel comfortable sharing and learning. This sharing activity may be developed based on employees' intentions or the organisation's management policies. This finding confirms the study of Azeem et al. (2021), who found that knowledge sharing within an organisation plays a role as a mediator between organisational culture and organisational competitiveness.

Moreover, knowledge sharing mediates the relationship between organisational culture and employees' innovative behaviours. It can explain 68.50% of innovative work behaviours, whereas 68.70% of solely organisational culture influences innovative work behaviours. The result of this study indicates an extremely small gap in determining whether knowledge sharing exists. A supportive culture for sharing and learning systems has existed. This culture determines and drives employees to create innovative work behaviours. However, this study confirms knowledge sharing as a mediator, as revealed in previous studies.

Theoretical Implications

This study is based on two foundation theories, organisational culture theory and leadership theory. Organisational culture theory notes that an organisation that declares clear policies and embeds such a policy in everyday life will be able to guide employees in the desired direction. Employees' innovative work behaviours are essential for firms; therefore, building a supportive innovative culture can create the desired behaviours. Thus, this study shows that organisations with clear innovative work behaviours should develop a supportive organisational culture. This study's finding also supports leadership theory, which proposes that a leader's leadership is key to the success of an organisation. Particularly, this study confirms that transformational leadership drives followers through idealised influence, inspirational motivation, intellectual stimulation and individualised consideration. The leader-follower relationship is a key to stimulating employees' innovative work behaviours. A leader needs to have clear goals and lead them to achieve those goals.



Managerial Implications

The results can be implied to organisation management in two folds: a) organisations must emphasise the importance of leadership and organisational culture on innovative work behaviours. If innovative work behaviours have been set as the organisational objective, then transformational leadership must be formulated in all leaders in the organisation. Desired innovative work behaviours will be inspired, encouraged and motivated accordingly, b) The results show that transformational leadership and organisational culture can enhance knowledge sharing amongst employees, leading to desired innovative work behaviours. Developing knowledge sharing activities that help increase the level of employees' innovative work behaviours is unavoidable. In conclusion, innovative work behaviours are influenced by two factors: a) organisation-level factor, which is an organisational culture, and b) team-level factor, which is transformational leadership. Therefore, HR in organisations needs to be certain of the objective of creating employees' innovative work behaviours and then emphasise the supporting factors, including organisational culture and transformational leadership.

Conclusion and Limitations for Future Research

Organisations need to understand the factors that influence employees' innovative work behaviours. Transformational leadership and knowledge sharing have been found to affect innovative work behaviours positively and significantly. In addition, organisational culture has been shown to have a significant correlation with employees' innovative work behaviours. Transformational leadership behaviours, particularly intellectual stimulation, have been found to encourage innovative work behaviours in employees. To foster innovative work behaviours, organisations should focus on creating an environment that nurtures innovation, empowers employees, encourages knowledge sharing and promotes supportive organisational culture. However, limitations should be noted as: a) this work is a cross-sectional study, which is limited in time and space. Thus, longitudinal study may be implied for further investigation, b) Generalisation needs to be considered because the result was derived from the context of logistics firms in Thailand, c) This study was also conducted based on the perspective of post-positivism paradigm. Therefore, further study may be conducted with different perspectives.

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