

Enhancing innovation: the moderating role of hierarchy of authority between organizational leaders and organizational innovation

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Abstract

Purpose – This study examines the moderating role of hierarchy of authority in the relationship between transformational and transactional leadership styles and organizational innovation.

Design/methodology/approach – A quantitative research design is applied. Data are collected from 118 employees from three firms (steel, textile and architecture) in Oman. SmartPLS based SEM and process macro by Hayes are used for data analysis.

Findings – Findings show that transformational leaders have a significant positive impact on organizational innovation ($\beta = 0.569$) but transactional leaders have a significant negative impact ($\beta = -0.389$). Hierarchy of authority does not have a significant impact on organizational innovation ($\beta = -0.008$); however, it moderates the relationship between organizational leaders and organizational innovation ($\beta = 0.14$).

Practical implications – This research provides insights for business owners to choose the suitable leaders and appropriate design for their businesses to achieve innovation strategy. They are required to have transformational leaders who inspire and encourage employees' autonomy and adopt less hierarchical of authority.

Originality/value – Although the impact of leadership on organizational innovation is already established, the moderating impact of hierarchy of authority has not been investigated yet. This research aims to fill the gap. Furthermore, this research examines a hybrid of individual (leadership type) and organizational-level factors (hierarchy of authority) in anticipating organizational innovation. It confirms the usage of behavioral leadership theory and contingency theory to explain the relationship at both individual and organizational levels.

Keywords Hierarchy of authority, Organizational innovation, Transformational leader, Transactional leader

Paper type Research article

1. Introduction

Innovation is considered a hot topic for managers as it plays a critical role in businesses long-term sustainability and competitiveness (Han, Kumar, & Kumar, 2024; Thakur *et al.*, 2024; Ullah *et al.*, 2023; Azeem, Ahmed, Haider, & Sajjad, 2021; Ramos-Garza & Ramos-Garza, 2019). As business environment is changing rapidly, it enforces organizations to change as well to meet customers' demands and achieve competitive advantage. New opportunities emerge from innovative products, services, and ideas. Organizations that do not innovate their products and services might vanish. Innovation becomes inevitable due to severe competition between companies, globalization process, and technological changes (Kassa & Getnet Mirete, 2022). It enables businesses to be competitive and adopt competencies through research and development (De Oliveira Sousa, Da Silva, Da Veiga, & Zanini, 2020). For countries, innovation in enterprises creates jobs and enhances GDP (Daksa, Yismaw, Lemessa, Hundie, & Entrepreneurship, 2018). It facilitates business growth, profit margins, employment opportunities, and economic growth of countries. It enables businesses to survive, expand and grow (Zelga, 2017).



Cui, Dai, and Zhang (2021) claim that innovation reinforces the effective usage and utilization of existing resources and integrate them into newly acquired ones that transform the company features, services, and products into competitive and valued position. Definitely, development of organizations and changes in business models are necessary over time. As Koziol-Nadolna (2020) state “innovation improves productivity, efficiency and quality of work”. Therefore, employees should have the belief of the necessity of innovation. Employees’ attitudes towards innovation are very important because with positive attitudes they can think creatively and introduce innovative ideas. Therefore investigating the factors that contribute to organizational innovation is of high importance.

There are many factors that form an urgent need for innovation. Some examples are technological changes such as digitalization of some tasks and using artificial intelligence, and data analytics in decision-making (Omol, 2024; Vărzaru & Bocean, 2024), behaviours of consumers, scarce resources, and severe competition between businesses (Ismail, 2023). Ramos-Garza and Ramos-Garza (2019) stated that leadership and organizational characteristics are important factors for organizational innovation. So far, the role of hierarchy of authority (decision centralization) as a moderator in the relationship between transformational and transactional leadership, and organizational innovation has not been investigated yet. Thus, this research aims to investigate hierarchy of authority as a moderating variable between leadership styles and organizational innovation.

2. Literature review and hypotheses development

2.1 Organizational innovation

As stated by Schumpeter in 1947 definition of innovation is “the ability to create new value propositions through offering new products and services; adopting new operating practices: technological, organizational, or market-oriented; or creating new skills and competencies (Price, Stoica, Boncella, & Entrepreneurship, 2013).” There are various positive outcomes for organizational innovation. It is essential for organizations survival (Bryman, Collinson, Grint, Jackson, & Uhl-Bien, 2011), has a positive impact on firm market and financial position (Rubera & Kirca, 2012), reinforces workplace performance (Biggi & Giuliani, 2022). creates value in marketplace and stock market (Rust, Ambler, Carpenter, Kumar, & Srivastava, 2004), fosters world economy (Baqutayan, Jamaluddin, Omar, Parvez, & Sciences, 2018). It leads to growth of sales and success of companies as it keeps with local and international market trends (Shahwan, An-Najjar, Nour, & Zaman, 2024).

Innovation is significant to ease human beings’ lives. It brought changes to national economy, social and personal lives of humans (Meissner & Kotsemir, 2016). It leads to efficient production, high growth, and consequently high market share and revenue. Kassa and Getnet Mirete (2022) stated that innovation is important to transform SMEs into big businesses. Bocken and Geradts (2020) stated that what makes large multinational companies maintaining competitiveness and sustainability is innovation in business processes. This requires agility and an ecosystem that allows businesses to communicate and complement with each other. Leadership and design of organizations would play a big role in forming innovation ecosystem. Therefore, next sections would discuss those variables.

2.2 Leadership

Leadership styles determine organizations’ failure or success since leaders’ function is to direct employees towards vision, mission, and goals of an organization. They associate significantly with employees’ attitudes like their satisfaction and commitment (Asaari, Desa, & Rejab, 2019; Pemb, Fatima, Bitrus, & Doe, 2022; Fischer & Sitkin, 2023). Le, Christopher, Nguyen, Pham, and Nguyen (2021) highlighted the importance of leadership styles for creating an attractive work environment, increasing retention of employees and enhancing SMEs viability.

Leaders can evoke and establish emotional bonds with followers (Bryman *et al.*, 2011). Thus, leader's personality and motivation are important factors that drive innovation. Mitcheltree (2021) asserted the importance of trust between management and employees to enhance innovation within organizations. The lack of trust may result in uncertainty, disconnect, tensions which restrict involvement and participation and thus employees' loyalty and commitment would decline and hinder employees' innovative behaviours. Besides that, Aryee, Walumbwa, Zhou, and Hartnell (2012) revealed that leaders affect employees' psychological state and the relationship between work engagement and employees' innovative behaviours is moderated by leader-member exchange.

There are many leadership styles discussed in literature, but a famous theory that is widely used is called theory Y and X by Douglas McGregor. It introduced two styles of leadership: transactional and transformational leadership. Transactional leaders rule their subordinates by punishment and incentives while transformational leaders rule their subordinates by inspiration and stimulation. Thus, this research focuses on the role of transformational and transactional leaders on enhancing innovation.

2.3 Hierarchy of authority

Organizational design plays a big role in achieving organization strategy. It plays a big role in shaping behaviours of employees (Arabdj, 2024; Janićević, 2013). Shabbir (2017) stated that design of an organization should suit its purpose and strategy. It is defined as how tasks are divided, arranged, and coordinated. Moreover, Martínez-León and Martínez-García (2011) stated that organizational design determines how resources are allocated, how internal and external communication are executed, and how organization responds to changes and able to learn and innovate.

Over times organizations change the way they structure and manage their functions. The classical theory proposed by Weber insisted in universal principles of organizational design. However, Taylor and Fayol tried to find some ways to match between employees and right jobs for them (Ferdous, 2016). Contingency theory emphasized adoption of organizational design that match organizations' demands. However, recent scholars claimed that structure of organizations change from hierarchies to networks, from departments to projects, and from vertical communication to lateral (Gaspary *et al.*, 2020). Managers who design structure of an organization take six elements into account which are specialization of work, departmentalization, command chain, control span, formalization, and centralization (Tolbert & Hall, 2015).

Structure might enhance or hinder innovative behaviours. Constant change and innovation require resilient and adaptable organization with less centralized and flat structure (Kiruba Nagini, Devi, Mohamed, & Studies, 2020; Andersson, Cäker, Tengblad, & Wickelgren, 2019). Javanmardi Kashan, Wiewiora, and Mohannak (2021) argued that innovation cannot be adopted if there is no supportive culture. For example, bureaucratic structures inhibit innovation. De Mello, Marx, and Salerno (2012) stated that to reinforce innovation, the structure of an organization should be renewed to manage change. Hierarchy of authority which relates to how decisions are made and how power is distributed affects organizational outcomes such as innovation.

2.4 Theories that the research model are grounded on

Behavioural leadership theory claims that effectiveness of leadership comes from how leaders behave which means it can be learned and thus any leader can become effective rather than who they are. Within this domain, transactional behaviours which involve clarifying roles, setting standards, monitoring, and setting rewards and these efforts foster discipline and reliability, which typically fosters exploitative (incremental) innovation. By contrast, transformational behaviours which involve articulating a vision, intellectual stimulation, and legitimizing risk-taking and these behaviours stimulate search and psychological safety,

which typically fosters exploratory (radical) innovation. Thus, this theory determines how leader behaviours translate into distinct innovation outcomes (transactional leaders into efficient improvement and implementation and transformational leaders into idea generation, experimentation, and change) (Derue, Nahrgang, Wellman, & Humphrey, 2011; Ye, Liu, & Tan, 2022).

Another theory that is used to explain the research model is contingency theory. Contingency theory explains when the link between leadership styles and innovation is strengthened or weakened by hierarchy of authority as a moderating variable. In central hierarchies, which is characterized by more layers, tighter centralization, and stronger formal control, employees' behaviours face information frictions and lower autonomy, making translation of employees' ideas into innovation difficult. In flatter hierarchies, which is characterized by fewer layers, faster lateral communication, and greater discretion, employees' ideas can be translated into innovative behaviours. Thus, hierarchy strengthens or weakens the effect of leadership styles on innovation (De Dreu, Nijstad, Bechtoldt, & Baas, 2011).

2.5 Organizational design and organizational innovation

Asif (2017) stated that as world changes very quickly, traditional organizational structures are not appropriate for organizations to enable them meet demands. Flexibility and agility are important for knowledge sharing which is important for innovation. AlBlooshi and Shamsuzzaman (2020) stated that organizational culture and structure that facilitate flexibility, teamwork, and risk-taking are more likely to innovate. They argued that changing hierarchy of businesses to be of lesser layers increases the rate of communication and collaboration among departments. It facilitates approaching problem solving and continuous improvement. Similarly, Asplund and Ulfvengren (2021), and Leyer, Stumpf-Wollersheim, and Pisani (2017) argued that appropriate organizational structure and culture facilitate individuals' innovation.

Organizations that are featured by their employees work in teams with less vertical structure adopt team-based structure. Employees' skills are complementary and achieve common goals. Network structure allows more decentralization and flexibility. It is less vertical and allows constant communication and interaction among members (Buchanan & Huczynski, 2019).

Cosh, Fu, and Hughes (2012) found that organization with decentralized decision making structure enhances innovation. It has also been found that high-tech young firms with informal structures have high tendency for innovation. Whereas, Will, Al-Kfairy, and Mellor (2019) stated that past decade has witnessed an increase in the view that firms with hierarchical structure exhibit inferior corporate performance compared to horizontal firms. Therefore, they examined how organizational structure (hierarchical, polyarchical and hybrid) influence innovation. The findings uncovered positive association between rigid hierarchies of firms and their ability to succeed in risky environments.

Al Abri and Matriano (2021) argued that hierarchical culture impacts organizational innovation negatively in which it inhibits communication, collaboration, and taking risks. Similarly, Gaspary, Moura, Wegner, and Management (2020) claimed that businesses that operate in dynamic markets demand an organizational structure that enhances innovation. So, they analyzed the impact of various dimensions of organizational structure on innovation. They applied a mixed method approach on a Brazilian company known for innovative environment. The findings revealed high level of communication, and less formalization structure affect innovation positively.

Likewise, Dekoulou and Trivellas (2017) investigated the influence of organizational structure on innovation. They surveyed 180 executives from advertising and media industry. PLS was used to analyze data and the results revealed that direct supervision inhibits innovation capacity. Managers are required to facilitate structures that decline direct supervision to have competitive advantage created by innovation. Kenis, Janowicz, and

Cambré (2009) argued that structures that promote opportunity for collaboration and flexibility are more likely to enhance innovation because as Stremersch, Camacho, Keko, and Wuyts (2021) claimed firms can engage in development of competencies, employee autonomy, and relatedness. Therefore, Dekoulou and Trivellas (2017) stated that businesses should adopt innovation-oriented structure to avoid extinction.

Some studies like (Rhee, Seog, Bozorov, Dedahanov, & Journal, 2017) investigated the relationship between centralization, formalization and employee innovative behaviour. They surveyed 750 employees from manufacturing industry in Korea. The results indicated a negative significant relationship between organizational structure (centralization, formalization) and employee innovative behaviour. Thus, in the light of above discussion, the following hypothesis is promoted:

H1. Less hierarchy of authority enhances organizational innovation.

2.6 Leadership and organizational innovation

Leadership is considered a key element that enhances or inhibits innovation. Many studies (Costa, Pádua, & Moreira, 2023; Jia, Hu, & Li, 2022; Nasir *et al.*, 2022; Alblooshi, Shamsuzzaman, & Haridy, 2020) investigated the relationship between leadership styles and organizational innovation. They found that organizational innovation is impacted by different styles of leadership directly or indirectly. They influence various variables in an organization such as organizational climate and learning and knowledge sharing which are important factors for innovation. Some studies such as (Islam, Zahra, Rehman, & Jamil, 2024; Oubrich, Hakmaoui, Benhayoun, Solberg Söilen, & Abdulkader, 2021; Lee, Kim, & Yun, 2018) investigated some factors that enhance knowledge sharing which is considered essential for innovation. The findings indicated that styles of leaders and organizational design foster knowledge sharing.

Maitlo *et al.* (2022), and Jaiswal and Dhar (2015), found that transformational leadership facilitates innovation climate in organizations. Likewise, Gerlach, Hundeling, Rosing, and Journal (2020) investigated the impact of various styles of leadership on innovation within organizations by conducting a longitudinal study over a project. A total of 54 employees rated the behaviours of ambidextrous leaders that support innovation. The findings unveiled a significant association between transactional and transformational leadership and innovation. Also, Kader Ali and Tang (2016) investigated leadership styles that enhance performance of businesses in multinational companies. Responses of 150 individuals indicated that spiritual leaders influence job satisfaction and business performance highly, followed by authentic leaders, transformational leaders, and transactional leaders respectively.

Benitez, Arenas, Castillo, and Esteves (2022) stated that digital leaders have capabilities to change organizations because they are characterized by being adaptable, transformative, change-agent, and able to sell vision internally and externally. They investigated the relationship between digital leaders and innovation by using mixed approach of qualitative and quantitative methods. Ten high growth companies were selected as a case study to build a theoretical model. Then a quantitative methodology was utilized to test model hypothesis by collecting data from 117 firms from Europe. The result confirmed the impact of digital leaders on firms' innovation performance through platform digitization. Other studies like (Xie *et al.*, 2018; Wipulanusat, Panuwatwanich, & Stewart, 2017; Prasad & Junni, 2016) investigated the impact of transformational and transactional leaders on innovation. The results showed that transformational leaders are more helpful in building an innovation environment. They play an essential role in fostering innovation.

Consistent with previous findings, this research proposes the following hypotheses:

H2. transactional leader correlates negatively with organizational innovation.

H3. Transformational leader correlate positively with organizational innovation.

2.7 Hierarchy of authority as a moderating variable:

Although leadership styles play an important role in innovation, there are some moderators that might increase or decrease the relationship. Ifedi (2020) stated that organizations achieve a competitive advantage by optimizing its resources such as authority. Leaders are responsible for allocating and coordinating resources. Also, organizations have different structures which influence the coordination of activities. Ifedi hypothesized that in order for an organization to perform highly, its leader's learning style should be aligned with its structure. He surveyed 448 employees working in SMEs in technology industry in USA. Contrary to hypotheses, the results revealed that transactional leadership does not have any impact on business performance regardless organizational structure. Whereas, transformational leadership has direct and indirect impact through organizational structure on business performance.

Esfahani, Hajipour, Tabatabaee, and Hosseini (2021) investigated the influence of transformational leadership on knowledge management mediated by organizational structure and culture. A total of 220 employees from public organization in Iran took part in the study. The finding showed a significant positive relationship between transformational leadership style and knowledge management. It also confirmed the mediating role of organizational structure and culture between transformational leadership style and knowledge management.

Sometimes culture of an organization promotes hierarchy of authority which inhibits organizational innovation. If organizational culture promotes less hierarchical organizational structure, this facilitates organizational innovation. In some cases, irrespective of the leader style, the culture which is manifested in organizational structure reinforces or demotivates innovation.

This research would fill the research gap by investigating the role of hierarchy of authority as a moderator between leadership styles and innovation. Thus, the following hypotheses are presented.

- H4. Hierarchy of authority moderates the relationship between transformational leadership and organizational innovation.
- H5. Hierarchy of authority moderates the relationship between transactional leadership and organizational innovation.

2.8 Theoretical framework

Based on the above brief discussion, behavioural leadership theory and contingency theory which emphasize the success of an organization relies on leaders' behaviours and organizational design, this research tries to investigate the role of leaders and hierarchy of authority in enhancing organizational innovation (Figure 1).

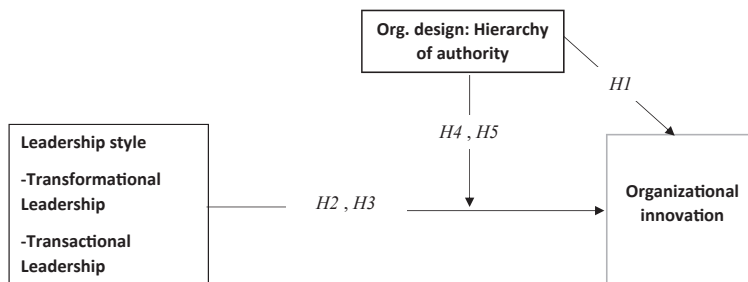


Figure 1. Research framework. Source: Author's own work

3. Methodology

3.1 Participants and data Collection

The research adopts a quantitative approach to analyze the data. The sample of research includes 118 employees from three firms in Oman. Two are manufacturing industries (steel and textile), and one is a service industry (architecture) (Table 1). The choice of these firms due to the competition they encounter so innovation must be a part of their strategy. The sample of the research from the industries selected by using convenience sampling technique. The questionnaire is distributed by researcher to human resource manager of each firm. Human resource managers are authorized to distribute the questionnaires to the employees. Unfortunately, the response rate is so low (Table 1).

3.2 Measures

Organizational innovation scale is taken from Azeem *et al.* (2021). It consists of four items using five-point Likert scale (always, often, sometimes, rarely, never). Cronbach's Alpha is 0.85 (Azeem *et al.*, 2021). Hierarchy of authority scale is taken from Cunningham and Rivera (2001). It consists of five items. Cronbach's Alpha is 0.88. Organizational leaders scale is taken from (Bass & Avolio, 1996). It consists of eight items.

4. Analysis and results

To examine reliability, validity, and uni-dimensionality of research constructs, measurement models results are used. Further, hypotheses are tested by using structural model results.

4.1 Data analysis

SPSS and Smart PLS softwares are used to analyze the data. Moderation of this research is analyzed by PROCESS macro by Andrew F. Hayes because it examines confidence intervals besides calculating direct and indirect effects.

4.2 Measurement model results

4.2.1 *Individual item reliability and convergent validity.* All loadings of items exceed 0.50 which means they are acceptable. Convergent validity is examined through calculating factor loadings, composite reliability and average variance extracted (Hair, Black, Babin, Anderson, & Tatham, 2010) to see the degree to which multiple indicators to measure the same construct are in agreement. Items loadings exceed 0.50 which is recommended value by Hair *et al.* (2010). Composite reliability exceeds 0.70 value. They range from 0.936 to 0.965. The average variance extracted ranges from 0.765 to 0.859 which is greater than 0.50 (Table 2).

4.2.2 *Construct validity.* Cross loadings are calculated (Table 3) to see if all the items measuring a particular construct loaded highly on that construct and loaded lower on the other constructs. This is achieved confirming construct validity of constructs.

4.2.3 *Discriminant validity.* Discriminant validity of constructs is achieved since the square root of the average variance extracted for each construct is greater than the correlations between the constructs (Fornell & Larcker, 1981). (Table 4)

Table 1. Population and samples of the research

Company	Population	Samples
Steel Company	538	48
Textile Company	405	57
Architecture Company	115	13

Source(s): Author's own work

Table 2. Measurement model – reflective construct

Construct	Measurement item	Loadings/Weight	AVE	CR
Organisational Innovation	Q1	0.926	0.859	0.961
	Q2	0.919		
	Q3	0.934		
	Q4	0.927		
Transformational Leadership	Q5	0.922	0.848	0.965
	Q6	0.934		
	Q7	0.923		
	Q8	0.915		
	Q9	0.910		
Transactional Leadership	Q10	0.859	0.831	0.936
	Q11	0.939		
	Q12	0.934		
Hierarchy of Authority	Q13	0.890	0.765	0.942
	Q14	0.882		
	Q15	0.910		
	Q16	0.903		
	Q17	0.782		

Source(s): Author’s own work

Table 3. Cross loadings

	Authority	Innovation	Transactional	Transformational
Q1	-0.703	0.926	-0.834	0.873
Q2	-0.739	0.919	-0.868	0.846
Q3	-0.720	0.934	-0.842	0.875
Q4	-0.705	0.927	-0.818	0.836
Q10	0.742	-0.749	0.859	-0.706
Q11	0.711	-0.863	0.939	-0.866
Q12	0.749	-0.865	0.934	-0.882
Q13	0.890	-0.632	0.688	-0.651
Q14	0.882	-0.757	0.797	-0.792
Q15	0.910	-0.697	0.734	-0.732
Q16	0.903	-0.727	0.703	-0.766
Q17	0.782	-0.537	0.567	-0.497
Q5	-0.704	0.848	-0.854	0.922
Q6	-0.751	0.882	-0.856	0.934
Q7	-0.720	0.862	-0.832	0.923
Q8	-0.709	0.842	-0.780	0.915
Q9	-0.785	0.827	-0.817	0.910

Source(s): Author’s own work

Table 4. Discriminant validity of constructs

	Authority	Innovation	Transactional	Transformational
Authority	0.875			
Innovation	-0.774	0.927		
Transactional	0.805	-0.907	0.911	
Transformational	-0.798	0.926	-0.900	0.921

Source(s): Author’s own work

4.3 Structural model

4.3.1 Direct effect: transformational leadership, transactional leadership, hierarchy of authority and organizational innovation. By applying computed *t*-statistics, the path loadings between constructs are examined to identify significance. All of the data were run using 500 bootstrapped samples. Path coefficients in the structural model may be significant, but their size may be so small that they do not warrant managerial attention.

Looking at the relative importance of the exogenous driver constructs in predicting the dependent construct organizational innovation, we see that transformational leadership (*t*-value = 5.982) is most important. It has a significant positive impact on organizational innovation with beta value (0.569). Transactional leadership has a significant impact (*t*-value = 4.192). However, the impact is negative with beta value (−0.389). Hierarchy of authority does not have a significant impact on organizational innovation (*t*-value = 0.198). However, the impact is negative with beta value (−0.008) (Table 5).

Based in *t* values, H1 and H2 are supported, but H3 is not supported.

4.3.2 Moderation analysis. Moderation analysis conducted based on PROCESS macro written by Andrew F. Hayes. The interaction between transformational leadership and authority is significant, *b* = 0.137, 95% CI [0.0136, 0.2615], *t* = 2.1979, *p* < 0.05 (Table 6), indicating that the relationship between transformational leadership and organizational innovation is moderated by hierarchy of authority. Therefore, hypothesis H4 is supported.

The interaction between transactional leadership and authority is significant, *b* = −0.1833, 95% CI [−0.3218, 0.0448], *t* = −2.6210, *p* < 0.05 (Table 7), indicating that the relationship between transactional leadership and organizational innovation is moderated by hierarchy of authority. Therefore, hypothesis H5 is supported.

Table 5. Path coefficients of exogenous constructs

Hypotheses		Beta	Std deviation	t-value	Decision
H1	Transform → Inno	0.569	0.095	5.982**	supported
H2	Transac → Inno	−0.389	0.093	4.192**	supported
H3	Auth → Inno	−0.008	0.042	0.198	Not supported

Note(s): ***p* < 0.01 (2.33), **p* < 0.05 (1.645)
Source(s): Author’s own work

Table 6. Model of transformational leadership as predictor of innovation, moderated by hierarchy of authority (Hypothesis H6)

	Beta	SE	<i>t</i>	<i>p</i>
Constant	3.2139 (1.0789, 5.3488)	1.0777	2.9821	<i>p</i> < 0.01
Authority	−0.6522 (−1.1562, −0.1482)	0.2544	−2.5633	<i>p</i> < 0.05
Transformational Leadership	0.2747 (−0.2274, 0.7768)	0.2535	1.0838	<i>p</i> = 0.280
Transformational Leadership * Authority	0.1375 (0.0136, 0.2615)	0.0626	2.1979	<i>p</i> < 0.05
R ²	0.87			

Source(s): Author’s own work

Table 7. Model of transactional leadership as predictor of innovation, moderated by hierarchy of authority (Hypothesis H7)

	Beta	SE	<i>t</i>	<i>p</i>
Constant	4.7308 (3.5688, 5.8928)	0.5866	8.0654	<i>p</i> < 0.001
Authority	0.2563 (−0.0690, 0.5816)	0.1642	1.5606	<i>p</i> = 00.1214
Transactional Leadership	−0.1190 (−0.6919, 0.4540)	0.2892	−0.4113	<i>p</i> = 00.6816
Transactional Leadership*Authority	−0.1833 (−0.3218, 0.0448)	0.0699	−2.6210	<i>p</i> < 0.05
<i>R</i> ²	0.84			

Source(s): Author's own work

5. Discussion

The present research provides insights about the impact of transformational leaders on enhancing organizational innovation in service and manufacturing industries. The findings revealed that transformational leaders correlate positively with organizational innovation and this is consistent with previous researches findings [Prasad and Junni \(2016\)](#), [Gumusluoğlu and Ilsev \(2009\)](#), [Wipulanusat et al. \(2017\)](#). This positive relationship occurs due to transformational leaders' characteristics of having the ability to influence behaviours and inspires their subordinates. Further, they stimulate intellectualities and have individual consideration. By contrast, transactional leaders have a negative impact on organizational innovation and this happens because of micro-management by supervisors and employees are not given opportunities to take decisions. Employees are punished if they have deviations from expectation.

Further, this research reveals non-significant relationship between hierarchy of authority and organizational innovation. This is because centralization structures do not have direct impact on innovation but it interacts with other variables to facilitate the relationship. As the findings of this research unfold that interactions between organizational leaders and organizational structure of centralization have a significant impact on organizational innovation indicating that organizational structure acts as a moderator between leaders and innovation. Therefore, transformational leaders who work in high centralization structure achieve less organizational innovation because centralization structures limit employees' autonomy to take actions without referring to their supervisors. Centralized organizational structure moderates the association between transactional leaders and organizational innovation because transactional leadership style is aligned with centralized organizational structures ([Ifedi, 2020](#)). [Sethibe and Steyn \(2015\)](#) found that transformational leadership has a positive significant impact on innovation; however, when the aim is instilling innovation culture, transactional leaders are more appropriate.

5.1 Theoretical contribution

Findings of this research can be applied to business field theories in various ways. This research adds value to the body of knowledge of organizational innovation by exploring the leaders who enhance innovation. This result consolidates the importance of transformational leaders to adopt innovation. Theoretically, most previous literature has analyzed the direct relationship between leadership styles and innovation without examining the moderating effect of organization hierarchical structure. Thus, we extend previous literature by examining hierarchy of authority as a moderating variable. This research expands knowledge among academic researchers. The result of the research also validates the usage of behavioural leadership in explaining this research model. Further, this research provides a model for firms

that seek innovation. It emphasizes that capabilities of managers and less centralized organizational structure encourage employees to innovate and thus ensure competitiveness.

5.2 Managerial implications

This research provides insights for business owners to choose the suitable leaders and appropriate design for their businesses to achieve their strategy. If they seek innovation, they are required to have transformational leaders who inspire and encourage employees' autonomy. However, transactional leaders are appropriate for managing daily tasks. They micro-manage, reward and punish behaviours which inhibits employees' innovative behaviours. Further, business owners should adopt less centralized hierarchical authority that facilitates innovation (Jacobides, Cennamo, & Gawer, 2018). Practically, they should combine transformational leaders and enhance employees' autonomy to facilitate innovation. Empowering middle managers is important to enhance social life.

5.3 Societal impact

Societal impact of this research involves promoting innovation which is essential for economic growth and organizational resilience. This would enhance job autonomy and employee engagement. It also creates more job enrichments opportunities and more job openings.

6. Conclusion

Organizational innovation is an important factor that contributes to the success of any organization in severe competitive market. This research investigates the impact of leader's type on organizational innovation moderated by hierarchy of authority. A quantitative research design was used to collect data from 118 employees working in three industries in Oman. The data collected was analyzed by smartPLS and process-macro by Hayes. The results confirmed positive relationship between transformational leadership and innovation and negative relationship between transactional leadership and innovation and this is aligned with Nasir *et al.* (2022) and Maitlo *et al.* (2022) results. Further, Hierarchy of authority plays a moderating role between the relationships. Based on the findings, theoretical and practical implications are proposed.

This research has some limitations which is restricted to three firms consisting of few samples. So future researches should cover more industries with big samples. This study examines one element of organizational structure which is centralization whereas future researches might cover three elements (formalization, specialization and centralization).

References

- Al Abri, M. S. H. & Matriano, M. T. (2021). The strategic management process for innovation activities of Oman telecommunication company (OMANTEL). *Advances in Social Sciences Research Journal*, 8(10), 1-8. doi: [10.14738/assrj.810.10944](https://doi.org/10.14738/assrj.810.10944).
- Alblooshi, M., Shamsuzzaman, M., & Haridy, S. (2020). The relationship between leadership styles and organisational innovation: A systematic literature review and narrative synthesis. *European Journal of Innovation Management*, 24, 338–370.
- Alblooshi, M., & Shamsuzzaman, M. (2020). Investigating the relationship between lean six sigma's intangible impacts and organisational innovation climate factors. *International Journal of Productivity and Performance Management*, 69(6), 1247-1270. doi: [10.1108/ijppm-06-2019-0311](https://doi.org/10.1108/ijppm-06-2019-0311).
- Andersson, T., Cäker, M., Tengblad, S., & Wickelgren, M. (2019). Building traits for organizational resilience through balancing organizational structures. *Scandinavian Journal of Management*, 35 (1), 36–45. doi: [10.1016/j.scaman.2019.01.001](https://doi.org/10.1016/j.scaman.2019.01.001).

- Arabdj, I. (2024). The effectiveness of cultural values in shaping the organizational behavior of workers in the institution. 24(2), 505-518. doi: [10.35553/1699-024-002-033](https://doi.org/10.35553/1699-024-002-033).
- Aryee, S., Walumbwa, F. O., Zhou, Q. & Hartnell, C. A. (2012). Transformational leadership, innovative behavior, and task performance: Test of mediation and moderation processes. *Human Performance*, 25, 1-25. doi: [10.1080/08959285.2011.631648](https://doi.org/10.1080/08959285.2011.631648).
- Asaari, M. H. A. H., Desa, N. M. & Rejab, S. R. (2019). Leadership styles and work-related attitudes among social services employees in Penang.
- Asif, M. (2017). Exploring the antecedents of ambidexterity: A taxonomic approach. *Management Decision*, 55(7), 1489, 1505. doi: [10.1108/md-12-2016-0895](https://doi.org/10.1108/md-12-2016-0895).
- Asplund, F., & Ulfvengren, P. (2021). Work functions shaping the ability to innovate: Insights from the case of the safety engineer. *Cognition, Technology & Work*, 23(1), 143–159. doi: [10.1007/s10111-019-00616-w](https://doi.org/10.1007/s10111-019-00616-w).
- Azeem, M., Ahmed, M., Haider, S., & Sajjad, M. (2021). Expanding competitive advantage through organizational culture, knowledge sharing and organizational innovation. *Technology in Society*, 66, 101635. doi: [10.1016/j.techsoc.2021.101635](https://doi.org/10.1016/j.techsoc.2021.101635).
- Baqutayan, S. M., Jamaluddin, N., Omar, H., & Parvez, D. H. (2018). Leadership framework intensifies innovation culture in an organization. *Journal of Advanced Research in Social and Behavioural Sciences*, 10, 33-49.
- Bass, B. M. & Avolio, B. J. (1996). Multifactor leadership questionnaire. *Western Journal of Nursing Research*.
- Benitez, J., Arenas, A., Castillo, A., & Esteves, J. (2022). Impact of digital leadership capability on innovation performance: The role of platform digitization capability. *Information & Management*, 59(2), 103590. doi: [10.1016/j.im.2022.103590](https://doi.org/10.1016/j.im.2022.103590).
- Biggi, G., & Giuliani, E. (2022). The noxious consequences of innovation: What do we know?. In *The Dark Side of Innovation* (pp. 12–34). Routledge.
- Bocken, N. M. P., & Geradts, T. H. J. (2020). Barriers and drivers to sustainable business model innovation: Organization design and dynamic capabilities. *Long Range Planning*, 53(4), 101950. doi: [10.1016/j.lrp.2019.101950](https://doi.org/10.1016/j.lrp.2019.101950).
- Bryman, A., Collinson, D., Grint, K., Jackson, B., & Uhl-Bien, M. (2011). *SAGE handbook of leadership*. London Los Angeles: SAGE Publications.
- Buchanan, D. A., & Huczynski, A. A. (2019). *Organizational behaviour*. Pearson.
- Cosh, A., Fu, X. & Hughes, A. (2012). Organisation structure and innovation performance in different environments. *Small Business Economics*, 39(2), 301-317. doi: [10.1007/s11187-010-9304-5](https://doi.org/10.1007/s11187-010-9304-5).
- Costa, J., Pádua, M., & Moreira, A. C. (2023). Leadership styles and innovation management: What is the role of human capital?. *Administrative Sciences*, 13(2), 47. doi: [10.3390/admsci13020047](https://doi.org/10.3390/admsci13020047).
- Cui, H., Dai, L., & Zhang, Y. (2021). Organization capital and corporate innovation: Evidence from China. *Finance Research Letters*, 43, 101956. doi: [10.1016/j.flr.2021.101956](https://doi.org/10.1016/j.flr.2021.101956).
- Cunningham, G. B., & Rivera, C. A. (2001). Structural designs within American intercollegiate athletic departments. *The International Journal of Organizational Analysis*, 9(4), 369-390. doi: [10.1108/eb028941](https://doi.org/10.1108/eb028941).
- Daksa, M. D., Yismaw, M. A., Lemessa, S. D., & Hundie, S. K. (2018). Enterprise innovation in developing countries: An evidence from Ethiopia. *Journal of Innovation and Entrepreneurship*, 7, 1-19. doi: [10.1186/s13731-018-0085-4](https://doi.org/10.1186/s13731-018-0085-4).
- De Dreu, C. K. W., Nijstad, B. A., Bechtoldt, M. N., & Baas, M. (2011). Group creativity and innovation: A motivated information processing perspective. *Psychology of Aesthetics, Creativity, and the Arts*, 5(1), 81–89. doi: [10.1037/a0017986](https://doi.org/10.1037/a0017986).
- De Mello, A. M., Marx, R., & Salerno, M. (2012). Organizational structures to support innovation: How do companies decide? *RAI Revista de Administração e Inovação*, 9(4), 5–21.
- De Oliveira Sousa, S. R., Da Silva, W. V., Da Veiga, C. P., Zanini, R. R. (2020). Theoretical background of innovation in services in small and medium-sized enterprises: Literature mapping. *Journal of Innovation and Entrepreneurship*, 9, 1-26. doi: [10.1186/s13731-020-00135-3](https://doi.org/10.1186/s13731-020-00135-3).

- Dekoulou, P., & Trivellas, P. (2017). Organizational structure, innovation performance and customer relationship value in the Greek advertising and media industry. *Journal of Business & Industrial Marketing*, 32(3), 385–397. doi: [10.1108/jbim-07-2015-0135](https://doi.org/10.1108/jbim-07-2015-0135).
- Derue, D. S., Nahrgang, J. D., Wellman, N. E. D., & Humphrey, S. E. (2011). Trait and behavioral theories of leadership: An integration and meta-analytic test of their relative validity. *Personnel Psychology*, 64(1), 7–52. doi: [10.1111/j.1744-6570.2010.01201.x](https://doi.org/10.1111/j.1744-6570.2010.01201.x).
- Esfahani, A. C., Hajipour, E., Tabatabaee, S. S. R., & Hosseini, S. H. (2021). Evaluation of the impact of transformational leadership style on knowledge management considering the mediating role of organisational structure and organisational culture. *International Journal of Process Management and Benchmarking*, 11(3), 415–430. doi: [10.1504/ijpmb.2021.115039](https://doi.org/10.1504/ijpmb.2021.115039).
- Ferdous, J. (2016). Organization theories: From classical perspective. *International Journal of Business, Economics and Law*, 9(2), 1–6.
- Fischer, T., & Sitkin, S. B. (2023). Leadership styles: A comprehensive assessment and way forward. *The Academy of Management Annals*, 17(1), 331–372. doi: [10.5465/annals.2020.0340](https://doi.org/10.5465/annals.2020.0340).
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research*, 18(3), 382–388. doi: [10.1177/002224378101800313](https://doi.org/10.1177/002224378101800313).
- Gaspary, E., Moura, G. L. D., & Wegner, D. (2020). How does the organisational structure influence a work environment for innovation?. *International Journal of Entrepreneurship and Innovation Management*, 24(2/3), 132–153. doi: [10.1504/ijeim.2020.105770](https://doi.org/10.1504/ijeim.2020.105770).
- Gerlach, F., Hundeling, M., & Rosing, K. (2020). Ambidextrous leadership and innovation performance: A longitudinal study. *Leadership & Organization Development Journal*, 41(3), 383–398. doi: [10.1108/lodj-07-2019-0321](https://doi.org/10.1108/lodj-07-2019-0321).
- Gumusluoğlu, L., & Ilsev, A. (2009). Transformational leadership and organizational innovation: The roles of internal and external support for innovation. *Journal of Product Innovation Management*, 26(3), 264–277. doi: [10.1111/j.1540-5885.2009.00657.x](https://doi.org/10.1111/j.1540-5885.2009.00657.x).
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2010). *Multivariate data analysis* (Vol. 7). Upper Saddle River, NJ: Prentice Hall.
- Han, Q., Kumar, R., & Kumar, A. (2024). Climate change and human migration: Perspectives for environmentally sustainable societies. *Journal of Geochemical Exploration*, 256, 107352. doi: [10.1016/j.gexplo.2023.107352](https://doi.org/10.1016/j.gexplo.2023.107352).
- Ifedi, C. (2020). Leadership style and organizational structure alignment: Impact on innovativeness and business performance.
- Islam, T., Zahra, I., Rehman, S. U., & Jamil, S. (2024). How knowledge sharing encourages innovative work behavior through occupational self-efficacy? The moderating role of entrepreneurial leadership. *Global Knowledge, Memory and Communication*, 73(1/2), 67–83. doi: [10.1108/gkmc-02-2022-0041](https://doi.org/10.1108/gkmc-02-2022-0041).
- Ismail, I. J. (2023). Speaking to the hearts of the customers! The mediating effect of customer loyalty on customer orientation, technology orientation and business performance. *Technological Sustainability*, 2(1), 44–66. doi: [10.1108/techs-03-2022-0016](https://doi.org/10.1108/techs-03-2022-0016).
- Jacobides, M. G., Cennamo, C., & Gawer, A. (2018). Towards a theory of ecosystems. *Strategic Management Journal*, 39(8), 2255–2276.
- Jaiswal, N. K., & Dhar, R. L. (2015). Transformational leadership, innovation climate, creative self-efficacy and employee creativity: A multilevel study. *International Journal of Hospitality Management*, 51, 30–41. doi: [10.1016/j.ijhm.2015.07.002](https://doi.org/10.1016/j.ijhm.2015.07.002).
- Janićijević, N. (2013). The mutual impact of organizational culture and structure. *Economic Annals*, 58 (198), 35–60. doi: [10.2298/eka1398035j](https://doi.org/10.2298/eka1398035j).
- Javanmardi Kashan, A., Wiewiora, A., & Mohannak, K. (2021). Unpacking organisational culture for innovation in Australian mining industry. *Resources Policy*, 73, 102149. doi: [10.1016/j.resourpol.2021.102149](https://doi.org/10.1016/j.resourpol.2021.102149).

- Jia, R., Hu, W., & Li, S. (2022). Ambidextrous leadership and organizational innovation: The importance of knowledge search and strategic flexibility. *Journal of Knowledge Management*, 26(3), 781–801. doi: [10.1108/jkm-07-2020-0544](https://doi.org/10.1108/jkm-07-2020-0544).
- Kader Ali, N. N. & Tang, S. Y. (2016). Does multiple leadership styles mediated by job satisfaction influence better business performance? Perception of MNC employees in Malaysia. *SHS Web of Conferences*, 23, 02005. doi: [10.1051/shsconf/20162302005](https://doi.org/10.1051/shsconf/20162302005).
- Kassa, E. T., & Getnet Mirete, T. (2022). Exploring factors that determine the innovation of micro and small enterprises: The role of entrepreneurial attitude towards innovation in woldia, Ethiopia. *Journal of Innovation and Entrepreneurship*, 11(1), 26. doi: [10.1186/s13731-022-00214-7](https://doi.org/10.1186/s13731-022-00214-7).
- Kenis, P., Janowicz, M., & Cambré, B. (2009). *Temporary organizations: Prevalence, logic and effectiveness*. Edward Elgar Publishing.
- Kiruba Nagini, R., Devi, S. U., & Mohamed, S. (2020). A proposal on developing a 360° agile organizational structure by superimposing matrix organizational structure with cross-functional teams. *Management and Labour Studies*, 45, 270–294.
- Kozioł-Nadolna, K. (2020). The role of a leader in stimulating innovation in an organization. *Administrative Sciences*, 10(3), 59. doi: [10.3390/admsci10030059](https://doi.org/10.3390/admsci10030059).
- Le, D. T., Christopher, S., Nguyen, T. T. T., Pham, H. T. T., & Nguyen, P. T. L. (2021). How leadership styles influence organizational outcomes: An empirical study in Vietnamese SMEs. *International Journal of Emerging Markets*, 18(10), 3893–3912. doi: [10.1108/ijoem-01-2021-0092](https://doi.org/10.1108/ijoem-01-2021-0092), ahead-of-print.
- Lee, S., Kim, S. L., & Yun, S. (2018). A moderated mediation model of the relationship between abusive supervision and knowledge sharing. *The Leadership Quarterly*, 29(3), 403–413. doi: [10.1016/j.leaqua.2017.09.001](https://doi.org/10.1016/j.leaqua.2017.09.001).
- Leyer, M., Stumpf-Wollersheim, J., & Pisani, F. (2017). The influence of process-oriented organisational design on operational performance and innovation: A quantitative analysis in the financial services industry. *International Journal of Production Research*, 55(18), 5259–5270. doi: [10.1080/00207543.2017.1304667](https://doi.org/10.1080/00207543.2017.1304667).
- Maitlo, Q., Wang, X., Jingdong, Y., Lashari, I. A., Faraz, N. A., & Hajaro, N. H. (2022). Exploring green creativity: The effects of green transformational leadership, green innovation climate, and green autonomy. *Frontiers in Psychology*, 13, 686373. doi: [10.3389/fpsyg.2022.686373](https://doi.org/10.3389/fpsyg.2022.686373).
- Martínez-León, I. M. & Martínez-García, J. A. (2011). The influence of organizational structure on organizational learning. *International Journal of Manpower*.
- Meissner, D., & Kotsemir, M. (2016). Conceptualizing the innovation process towards the ‘active innovation paradigm’—trends and outlook. *Journal of Innovation and Entrepreneurship*, 5, 1–18.
- Mitcheltree, C. M. (2021). Enhancing innovation speed through trust: A case study on reframing employee defensive routines. *Journal of Innovation and Entrepreneurship*, 10(1), 4. doi: [10.1186/s13731-020-00143-3](https://doi.org/10.1186/s13731-020-00143-3).
- Nasir, J., Ibrahim, R. M., Sarwar, M. A., Sarwar, B., Al-Rahmi, W.M., Alturise, F., . . . & Uddin, M. (2022). The effects of transformational leadership, organizational innovation, work stressors, and creativity on employee performance in SMEs. *Frontiers in Psychology*, 13, 772104. doi: [10.3389/fpsyg.2022.772104](https://doi.org/10.3389/fpsyg.2022.772104).
- Omol, E. J. (2024). Organizational digital transformation: From evolution to future trends. *Digital Transformation and Society*, 3(3), 240–256. doi: [10.1108/dts-08-2023-0061](https://doi.org/10.1108/dts-08-2023-0061).
- Oubrich, M., Hakmaoui, A., Benhayoun, L., Solberg Söilen, K., & Abdulkader, B. (2021). Impacts of leadership style, organizational design and HRM practices on knowledge hiding: The indirect roles of organizational justice and competitive work environment. *Journal of Business Research*, 137, 488–499. doi: [10.1016/j.jbusres.2021.08.045](https://doi.org/10.1016/j.jbusres.2021.08.045).
- Pembi, S. U., Fatima, I. K., Bitrus, F. A., & Doe, M. (2022). Leadership styles and leadership qualities for organizational success: A review of literature. *Nigerian Journal of Management Sciences*, 23(2), 312–323.

- Prasad, B., & Junni, P. (2016). CEO transformational and transactional leadership and organizational innovation: The moderating role of environmental dynamism. *Management Decision*, 54(7), 1542–1568. doi: [10.1108/md-11-2014-0651](https://doi.org/10.1108/md-11-2014-0651).
- Price, D. P., Stoica, M., & Boncella, R. J. (2013). The relationship between innovation, knowledge, and performance in family and non-family firms: An analysis of SMEs. *Journal of Innovation and Entrepreneurship*, 2, 1–20. doi: [10.1186/2192-5372-2-14](https://doi.org/10.1186/2192-5372-2-14).
- Ramos-Garza, C., & Ramos-Garza, L. (2019). Leadership and culture of innovation. In M. Corrales-Estrada (Ed.), *Innovation and Entrepreneurship: A New Mindset for Emerging Markets*. Emerald Publishing.
- Rhee, J., Seog, S.D., Bozorov, F., & Dedahanov, A.T. (2017). Organizational structure and employees' innovative behavior: The mediating role of empowerment. *Social Behavior and Personality: an international journal*, 45(9), 1523–1536, [10.2224/sbp.6433](https://doi.org/10.2224/sbp.6433).
- Rubera, G., & Kirca, A. H. (2012). Firm innovativeness and its performance outcomes: A meta-analytic review and theoretical integration. *Journal of Marketing*, 76(3), 130–147. doi: [10.1509/jm.10.0494](https://doi.org/10.1509/jm.10.0494).
- Rust, R. T., Ambler, T., Carpenter, G.S., Kumar, V., & Srivastava, R. K. (2004). Measuring marketing productivity: Current knowledge and future directions. *Journal of Marketing*, 68(4), 76–89. doi: [10.1509/jmkg.68.4.76.42721](https://doi.org/10.1509/jmkg.68.4.76.42721).
- Sethibe, T., & Steyn, R. (2015). The relationship between leadership styles, innovation and organisational performance: A systematic review. *South African Journal of Economic and Management Sciences*, 18(3), 325–337. doi: [10.17159/2222-3436/2015/v18n3a3](https://doi.org/10.17159/2222-3436/2015/v18n3a3).
- Shabbir, M. S. (2017). Organizational structure and employee's performance: A study of brewing firms in Nigeria. *American Research Journal of Business and Management*, 3, 1-16.
- Shahwan, R., An-Najjar, M., Nour, A., & Zaman, T. (2024). Antecedents and consequences of business model innovation: A theoretical model. In *Artificial Intelligence-Augmented Digital Twins: Transforming Industrial Operations for Innovation and Sustainability* (pp. 25–35). Cham: Springer Nature Switzerland.
- Stremersch, S., Camacho, N., Keko, E., & Wuyts, S. (2021). Grassroots innovation success: The role of self-determination and leadership style. *International Journal of Research in Marketing*, 39(2), 396–414. doi: [10.1016/j.ijresmar.2021.10.003](https://doi.org/10.1016/j.ijresmar.2021.10.003).
- Thakur, T.K., Swamy, S. L., Thakur, A., Mishra, A., Bakshi, S., Kumar, A., . . . Kumar, R. (2024). Land cover changes and carbon dynamics in Central India's dry tropical forests: A 25-year assessment and nature-based eco-restoration approaches. *Journal of Environmental Management*, 351, 119809. doi: [10.1016/j.jenvman.2023.119809](https://doi.org/10.1016/j.jenvman.2023.119809).
- Tolbert, P. S., & Hall, R. H. (2015). *Organizations: Structures, processes and outcomes*. Routledge.
- Ullah, I., Nuta, F. M., Levente, D., Yiyu, B., Yihan, Z., Yi, C., . . . Kumar, R. (2023). Nexus between trade, industrialization, and marine pollution: A quantile regression approach. *Ecological Indicators*, 155, 110992. doi: [10.1016/j.ecolind.2023.110992](https://doi.org/10.1016/j.ecolind.2023.110992).
- Vărzaru, A. A., & Bocean, C. G. (2024). Digital transformation and innovation: The influence of digital technologies on turnover from innovation activities and types of innovation. *Systems*, 12(9), 359. doi: [10.3390/systems12090359](https://doi.org/10.3390/systems12090359).
- Will, M. G., Al-Kfairy, M., & Mellor, R. B. (2019). How organizational structure transforms risky innovations into performance – a computer simulation. *Simulation Modelling Practice and Theory*, 94, 264–285. doi: [10.1016/j.simpat.2019.03.007](https://doi.org/10.1016/j.simpat.2019.03.007).
- Wipulanusat, W., Panuwatwanich, K., & Stewart, R.A. (2017). Exploring leadership styles for innovation: An exploratory factor analysis. *Ekonomia i Zarzadzanie = Economics and Management*, 9(1), 7–17. doi: [10.1515/emj-2017-0001](https://doi.org/10.1515/emj-2017-0001).
- Xie, Y., Xue, W., Li, L., Wang, A., Chen, Y., Zheng, Q., . . . Li, X. (2018). Leadership style and innovation atmosphere in enterprises: An empirical study. *Technological Forecasting and Social Change*, 135, 257–265. doi: [10.1016/j.techfore.2018.05.017](https://doi.org/10.1016/j.techfore.2018.05.017).
- Ye, P., Liu, L., & Tan, J. (2022). Creative leadership, innovation climate and innovation behaviour: The moderating role of knowledge sharing in management. *European Journal of Innovation Management*, 25(4), 1092–1114. doi: [10.1108/ejim-05-2020-0199](https://doi.org/10.1108/ejim-05-2020-0199).

Zelga, K. (2017). The importance of competition and enterprise competitiveness. *World Scientific News*, 72, 189-194.

Further reading

Ganco, M., Kapoor, R., & Lee, G. K. (2020). From rugged landscapes to rugged ecosystems: Structure of interdependencies and firms' innovative search. *Academy of Management Review*, 45(3), 646–674. doi: [10.5465/amr.2017.0549](https://doi.org/10.5465/amr.2017.0549).

Nusair, N., Ababneh, R., & Bae, Y. K. (2012). The impact of transformational leadership style on innovation as perceived by public employees in Jordan. *International Journal of Commerce and Management*, 22(3), 182–201. doi: [10.1108/10569211211260283](https://doi.org/10.1108/10569211211260283).

Reinartz, W., Haenlein, M., & Henseler, J. (2009). An empirical comparison of the efficacy of covariance-based and variance-based SEM. *International Journal of Research in Marketing*, 26(4), 332–344. doi: [10.1016/j.ijresmar.2009.08.001](https://doi.org/10.1016/j.ijresmar.2009.08.001).

Roscoe, J. T. (1975). *Fundamental research statistics for the behavioral sciences*. [by] John T. Roscoe.

Siggelkow, N., & Rivkin, J. W. (2005). Speed and search: Designing organizations for turbulence and complexity. *Organization Science*, 16(2), 101–122. doi: [10.1287/orsc.1050.0116](https://doi.org/10.1287/orsc.1050.0116).

Steyn, R. (2020). Leadership styles and organisational structure. *International Journal of Human Resource Studies*, 10(3), 98116, doi: [10.5296/ijhrs.v10i3.17295](https://doi.org/10.5296/ijhrs.v10i3.17295).

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