

## Article

# Knowledge Sharing and the Moderating Role of Digital Innovation on Employees Innovative Work Behavior

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**Abstract:** This study aims to give an econometric analysis of the energy sector employee's innovative work behavior (IWB) with the mediation function of knowledge sharing (KS) and is mainly focused on how Network Capability (NC) plays a significant role in promoting the performance of knowledge sharing in the energy sector, which guides toward IWB. Current research also investigates the role of digital innovation (DI) in moderating the linkage between NC and IWB. For data collection, the quantitative method and 578 questionnaires were used. To test the study hypothesis, a structural equation model and bootstrapping are used. The findings prove that NC has a positive impact on IWB. Furthermore, it has been established that KS acts as a mediator in establishing the connection between network capacity NC and IWB. The results of the moderation role confirm that Digital Innovation in the energy sector strengthens the relationship between NC and IWB. By examining the potential mediating function of the KS in the NC-IWB links, this project expands the body of previous data. Current research further contributes to the better perception of NC, KS, digital innovation, and innovative work behavior in the energy sector.

**Keywords:** network capability; innovative work behavior; knowledge sharing; digital innovation; energy sectors



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## 1. Introduction

In the 21st century, the dynamic and shifting environment is a major factor that presses for the development of network capabilities and innovative work behavior within an organization [1]. Recently, scholars have been interested in this topic, and substantial research is still being done in this area. In an effort to link a person's involvement in innovation with various aspects of the NC, various businesses consider the quantity and quality of their exchange relationships, the density of their NC, and their accessibility to IWB opportunities [2]. The high network capability resources support the formation of new and better approaches to improving traditional items, methods, and procedures that increase the IWB of workers within an organization [3]. Innovative work behavior is a crucial component in enabling organizations to gain a competitive edge, which would ensure their long-standing endurance in the fiercely changing digital world [4].

IWB is connected to growth, expansion, and the realization of novel and valuable ideas within an enterprise. Accordingly, all sectors across the globe are placing a high priority on encouraging employees' innovative work practices [5]. Moreover, the energy sector is

strongly dependent on innovation due to the need for a path to renewable energy and a reduction in fossil fuels. Innovation is recognized as a basic activity inside manufacturing processes and company development that is crucial for the development of personnel activities [6]. Previous studies reveal that there are many factors that influence the expansion and growth of IWB in the energy sector, including management style, tech use, mentoring, etc.; however, knowledge sharing seems to be a crucial element for IWB among energy sector employees [7].

Knowledge sharing is the collection of behavioral aspects comprising exchanging one's personal working information and abilities with several other employees beyond one's sector [8]. Within an organization, when an entity is knowledgeable and expert about a certain field or software and also shares its expertise and ideas with colleagues, it has a great influence on the IWB of the whole company [9].

Network capability resources will build up valuable innovative ideas as a result of the KS, which provides greater possibilities for raising innovative work behavior [10]. For the development of network capabilities and the attainment of IWB, knowledge sharing is considered a convenient and ineluctable source. Innovative work behavior is vital in the current rapidly changing environment for the energy sector to maintain practicable progress. It serves as a key component for gaining a superior edge and enhancing managerial success [11]. The abundance of knowledge is a major determinant of NC and IWB. NC easily scores high, increasing their chances of good careers when they share knowledge within the company to overcome training expenditures and care for know-how, even if their workers want to work somewhere else in the future [12]. In an organization, it is important to identify network capability resources and manage complexity brought about by a process where employees share their knowledge and experience through dialogue in order to boost revenue, cost, innovation, and IWB [5].

Innovative people are recognized to consider "from outside box" and strongly prefer to deviate from conventional approaches. Nearly all sectors, including energy, are significantly affected by digital innovation [13]. Through embracing and applying advanced technologies, digital innovation in the energy sector offers a completely new method of producing, transporting, storing, and distributing energy. It involves actively investing in new technologies to benefit individuals and the energy sector [14]. Nowadays, it is crucial for the energy sector to offer affordable solutions for saving energy and shift from classic fuels to renewable sources of energy. Technology will be more and more necessary for employees, and they will benefit from modern and digital innovation in a variety of ways [15].

Digital innovation in energy provides ways to shift to new energy sources, take advantage of unexplored resources, and optimize the energy consumed through smart solutions. In general, digital innovation revolves around the adoption of advanced technologies that are intended to boost staff productivity and elevate the energy sector to clean and green production [16]. Previous studies have explored different determinants of innovative work behavior in the energy sector, such as leadership behaviors [17], cultural intelligence [18], team learning behaviors [11], and employees dynamic capabilities [19]. This study has expanded the concept that critical elements for achieving IWB in digital surroundings go beyond these conventional antecedents.

This paper uniquely adds to the literature by enlightening NC, KS, and digital innovation's roles in the attainment of IWB and addressing gaps in previous knowledge. Regardless of prior literature's critical contributions, the knowledge link between NC and innovation still has several serious gaps that need to be filled. Accordingly, this paper first looks into the association between network capability and IWB. In order to understand the relationship between NC and IWB, this study also examines the mediation role of KS and the moderation role of digital innovation between them. This article is structured into sections to achieve the aforementioned objectives. In Section 2, literature on NC, KS, DI, and IWB is covered; participant information, consistency, and all procedures are explained in the next section. After that, in Section 4, results and findings are explained, and in

Section 5, discussion and theoretical-practical implications, along with drawbacks and future directions, are presented.

## 2. Hypothesis Development and Research Model

### 2.1. Network Capability and IWB

People with strong network capability can build a broad network of supportive and powerful connections that help them accomplish their desired goals and aspirations with IWB [20]. Across network capability, someone sets up their network to increase and improve work output through attaining accessibility to information, data, and power for effectively enacting change that guides toward the achievement of IWB [21]. Even though many researchers have looked at NC and IWB separately from different perspectives, they have not concentrated on NC outcomes that affect IWB performance. Network capability is considered a significant supporting talent that assists someone to build alliances, forge relations with influential people, and advance their sector and society, which encourages innovative work behavior [12]. IWB is a fundamental idea and resource implanted that is obtained, trained, and equipped for purposeful behavior, which is closely related to the outcomes of network capability [22]. Our emphasis on networking, specifically as an indicator of IWB, fills a significant gap in the literature. Network capability is an intricate idea that supports innovation in the energy sector, which is important because it may lead to improved services or products [23,24]. Network capability describes the acceptance, application, and usage of original ideas and remedies that address staff members issues at work and boost their IWB [25]. IWB is important for the energy sector to maintain its competitive technological edge in the present unstable setting because of the vital role that workers' IWB plays in organizational effectiveness, success, proficiency, and productivity [26]. Network capability, innovative approaches, and a variety of strategies could increase the competitive edge of the companies and also improve the innovation abilities of all their employees. For enhancing workers' mental well-being, an organization's internal environment is critical for the development of innovation, creativity, and fostering IWB [9].

**Hypothesis 1 (H1).** *There is a direct positive relationship between network capability and IWB.*

### 2.2. KS Sharing Mediate between NC and IWB

KS is the exchange and transfer of knowledge and practical experience, which has grown to be a critical process [27]. Several proponents claim that knowledge sharing is a vague form that lays the foundation for networking economic benefits and boosts the productivity of employees IWB in the energy sector [28]. Examining the impact of NC on IWB is essential to comprehending how to effectively involve staff in innovation processes given the significant role of knowledge sharing between them, particularly in the context of overall innovative behavior. Network capability resources help in making plans and developing innovative ideas, which is beneficial in supporting collaborators and workers and also increases the institution's revenue and prosperity, which helps in overcoming challenges and increasing the IWB of its members [29]. Sharing knowledge helps an employee feel more satisfied at work and infuses innovation into their workplace [30]. The network capability and advanced working strategy that could be managed through knowledge sharing are the foundation for the innovation and achievements of both the participant and business IWB [31]. To accomplish the various duties within an institute, network capability supports an employee's ability to share their acquired knowledge with others, which leads to high levels of innovative work behavior among employees in an organization [32]. Through this exercise, less knowledgeable employees can put their knowledge to use in a helpful way. Today's technologies have eliminated geographic barriers to information access, and businesses have pressed for ongoing innovation, which is the primary force behind both healthy development and socioeconomic gains [33]. Network capability, sufficient responsibility, and a welcoming environment foster the

ability to communicate. Employees who receive assistance from coworkers and superiors are more likely to innovate on an individual level, particularly when that assistance leads to the discovery of fresh data, sources, and insights [34,35]. Many managers have admitted that it can be difficult to enforce and regulate workers' knowledge sharing, particularly in workplaces where there are knowledge gaps and official limitations. People need to be motivated in response to having the capacity to impart their expertise from NC to IWB [36].

The knowledge system and sharing aiming to create a climate of productivity and performance were analyzed by [37], and they highlighted the role of knowledge management in IT investments. As well as the adoption of new paradigms, such as green marketing, green products are also related to knowledge sharing management in the company [38,39].

**Hypothesis 2 (H2).** *The association between NC and IWB is positively mediated by KS.*

### 2.3. Digital Innovation Strengthen the NC and IWB

Digital innovation is the process of implementing modern digital technologies to solve business problems and challenges through optimizing practices, enhancing customer experiences, and bringing novel business models [40]. A broad and comprehensive phrase, digital innovation moderates the linkage between NC and IWB in the energy sector, encompasses ideas from the point where technology and human resources converge. The network capability offers novel ideas for using information and digital technology to offer affordable energy with less impact on the environment and health and to keep the economic growth [41]. Digital innovation could assist to rationalize network capability processes, boost effectiveness, enhance productivity, and save money [42]. This ability enhances the quality and effectiveness of energy production and supply, but it should be viewed as a complement at present in laying roles and a means to lighten the load on staff, which successively improves their IWB [43]. Digital innovation and similar technologies are developed in response to widespread issues in all areas of activity [44]. Network capability explores different methods, ideas, and websites that should be used by institutions that comprehend what they are which problems and difficulties they may encounter, as well as what they require from such a framework and webpage that improves their services and helps in accomplishing their objectives [45–47]. The energy sector's digitalization is the use of digital innovation to enhance the management of production, storage, transport, and distribution. This makes it possible for companies to evaluate new initiatives, search for opportunities for sector development, and incorporate cutting-edge technology into their practices [48]. Many companies networks face problems integrating and implementing novel equipment and machinery into their institutions when their existing tools are working well [49]. Digital innovation focused on the latest digital technologies that enhance network resources using the latest applications, platforms, and models that facilitate the development of IWB to gain significance and competitiveness in emerging markets [50]. The adoption of the new technology is contingent on sustainable leadership and performance [51].

Figure 1 shows Theoretical framework.

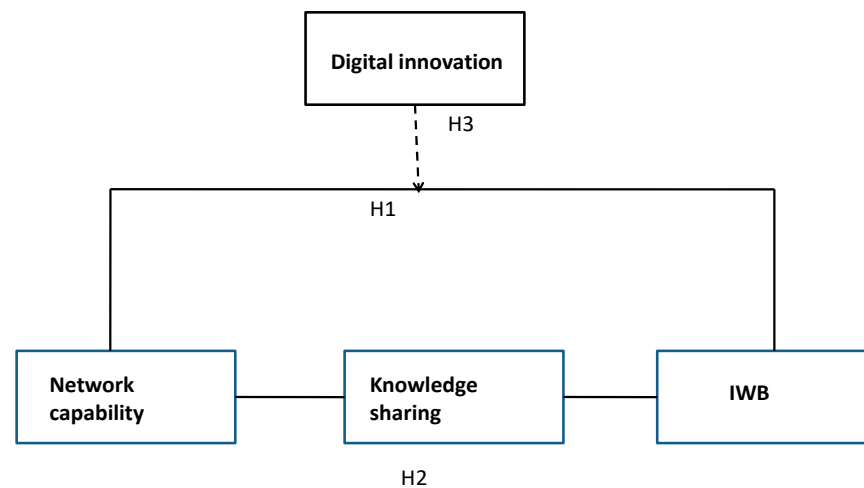


Figure 1. Theoretical framework.

**Hypothesis 3 (H3).** *DI positively plays a moderation role in the direct association between NC and IWB, such that the effect will be high when DI is implemented in the energy sector.*

### 3. Methodology

To accomplish study objectives and answer study questions, a quantitative method was used in this research to investigate the association between variables through analyzing and gathering data for testing study hypotheses. This study's analysis unit is the energy sector in Saudi Arabia. Current research focuses on staff NC, KS, and IWB abilities based on a societal psychological perspective. This section describes the sample size and how the data in the survey were gathered.

#### 3.1. Sampling and Data Collection

To investigate associations between constructs through testing hypotheses, a random sampling technique was used. In this study, random sampling was used to achieve representativeness, enabling a sample that accurately reflects the population. It enhances generalizability by allowing for inferences about the larger population. Additionally, random sampling ensures statistical validity, enabling reliable and valid statistical analysis. The targeted subject of this study was staff from energy companies in Saudi Arabia.

The 700 questionnaires were e-mailed to the 17 energy companies in Saudi Arabia. The questionnaire survey was collected after 2 months of effort, and a cover letter with each questionnaire was attached to explain the purpose of the study and ensure necessary confidentiality. Data was collected with the help of three research associates who personally visited or made telephone calls and emails to the department's managers to ask for detailed information. Fourteen of these contacted units agreed to take part in the study survey. With the help of managers, questionnaire envelopes were distributed to individual staff in participating units. Each respondent was requested to return completed questionnaires to their sector secretary, from whom questionnaires were gathered at a later point. Out of total, just 535 responses were returned, of which only 478 questionnaires were complete and the remaining were incomplete and discarded. Lastly, 478 responses were returned from 14 companies, representing a return rate of 68.28%. On average, participants had three and a half years of experience in the company. The respondent's descriptive characteristics are presented in Table 1.

**Table 1.** Characteristics and structures of the sample.

Measure	Item	Frequency	Percentage
Position	Director	9	1.89%
	Department Managers	32	6.69%
	Operational Staff	289	60.46%
	Admin. Staff	64	13.39%
	Commercial Staff	84	17.57%
Department	Exploration	68	14.23%
	Production	155	32.43%
	Maintenance	76	15.90%
	Transport	34	7.11%
	Distribution	38	7.95%
	Sells	78	16.31%
	Other	29	6.07%
	Total	478	100%

Source: authors' synthesis.

### 3.2. Measurement

To measure research constructs in the study, model items were primarily adopted from several related studies carried out in the past and adapted to the specifics of the energy sector in NC, KS, DI, and IWB contexts. Principles of compatibility, specificity, and generality were applied to all constructs. To measure the consistency and validity of variables, a Likert scale with 5 levels from 1 strongly disagree to 5 strongly agree was used.

#### 3.2.1. Network Capability

NC was measured using fourteen-item scales adopted from Zacca, Dayan, and Ahrens [52]. These fourteen items were developed by Walter, Auer, and Ritter [53]. This construct measures the company's networking abilities to commence, utilize, and keep company relationships with others. An example item refers to the ability to build strong relationships with partners (customers, suppliers).

#### 3.2.2. Knowledge Sharing

To measure knowledge sharing, a four-item scale was proposed by Kim and Shim [54]. This construct measures how knowledge sharing is encouraged in an organization and how it helps IWB. The example question is "I frequently exchange important information (such as market trends) with others".

#### 3.2.3. Digital Innovation

To measure digital innovation, a six-item scale was used, which was adapted from previous studies by Khin and Ho [55] and developed by Paladino [56]. This construct measures the digital transformation performance of an organization. The example item is "The features of our digital solutions are superior compared to our competitors".

#### 3.2.4. Innovative Work Behavior

To measure IWB, a four-item scales was employed, which is adapted from the studies of Akhavan et al. [57]. This construct measures how a firm explores opportunities, generates new ideas, and implements these ideas. The example question is "I often succeed in transforming my innovative ideas into practical solution".

## 4. Results and Analysis

Descriptive and SEM techniques were used to check direct association outcomes between NC and IWB. To test mediating role of knowledge sharing, the Preacher and Hayes approach [58] was used. Moderating the impact of the digital innovation tested by hierarchal-regression analysis. Fornell and Lacker [59] evaluated discriminant valid-

ity. Cronbach's alpha was used to evaluate construct-reliability (CR). Results from the confirmatory factor analysis (CFA) show how well this research model fits the data. All extents relate to responses on a 5-level Likert scale, where 1 signifies strongly disagreed and 5 signifies strongly agreed.

Table 2 indicates the results discriminant and convergent validity. All the values become accepted (See Table 2). According to Fronell and Lacker's, Ref. [59] technique, proves that factor loading (FL) > 0.70, Average-variance-extract (AVE) > 0.50, CR > 0.70, and the value of Cronbach's  $\alpha$  is greater than 0.60.

**Table 2.** Outcomes of FL, AVE, CR, and  $\alpha$ .

Constructs	Items	FL	AVE	CR	$\alpha$
Network Capability	14	0.82 to 0.86	0.78	0.78	0.86
Knowledge Sharing	04	0.82 to 0.86	0.76	0.77	0.84
Digital Innovation	06	0.82 to 0.86	0.74	0.76	0.82
Innovative Work Behavior	04	0.82 to 0.86	0.72	0.79	0.88

Source: authors' computation.

We used confirmatory factor analysis (CFA) to examine the relationship between the study variables of network capabilities, knowledge sharing, digital innovation, and innovative work behaviour. The fitness was fit, according to Anderson and Gerbing's model, and our model's hypothesised function was finding the best model. Three other models weren't accepted because our four-factor model fit the data better than they should have  $\chi^2 = 1035.58$ , Df = 475,  $\chi^2/df = 2.180$ , RMSEA = 0.04, GFI = 0.93, and CFI = 0.94. TLI = 0.951, SRMR = 0.781.

#### 4.1. Correlation

Table 3 presents the results and correlations of the constructs applied in this study. The results examined show that all the values are positively significant. There is a significant positive relationship between the networks capability and innovative work practises ( $r = 0.32$ ,  $p = 0.01$ ). The association ( $r = 0.24$ ,  $p = 0.01$ ) demonstrates that knowledge sharing and IWB have a positive correlation. Further, there is a relationship between digital innovation and innovative work practises ( $r = 0.38$ ,  $p = 0.01$ ). The VIF values were below the 5.0 cutoff values, demonstrating that multi-collinearity was not a problem.

**Table 3.** Correlation results.

Variables	M.Value	Std-Deviation	1	2	3	4	5	6
1 Respondent Experience	2.47	0.20	1					
2 Respondent Education	3.18	0.60	0.050	1				
3 Network Capability	3.36	0.90	0.020	0.090	1			
4 Knowledge Sharing	3.48	0.16	0.080	0.022	0.015	1		
5 Digital Innovation	3.35	0.12	0.021	0.014	0.018	0.360 **	1	
6 Innovative Work Behavior	3.12	0.8	0.014	0.016	0.320 **	0.240 **	0.380 **	1

Note: \*\*  $p < 0.01$ , Source: authors' computation.

#### 4.2. Hypothesis Testing

Structural equation modeling analysis was utilized to investigate the impact of the network capability on innovative work behavior. Findings prove that NC is a positive fore-caster of IWB analytically. Table 4 shows that network capability is significantly associated with innovative work behavior ( $\beta = 0.24$ ,  $p < 0.001$ ). Therefore, H1 was accepted.

**Table 4.** Network capability's effect on innovative work behavior.

Model	Hypothesis Description	B	F	T	Sig	Remarks
Model 01	Network Capability to Innovative Work Behavior	0.24	14.057	0.1637	0.001	Accept

Source: authors' computation.

According to Preacher and Hayes investigation [58], Knowledge sharing is an outcome of innovative behaviours and network capacity. Indirect effects of knowledge sharing between NC and innovative work behaviour. From an analytical perspective, the results are accepted ( $=0.34$ , Lower = 0.1859, Upper = 0.3684), demonstrating that KS functions as a mediator (See Table 5). Z-score analysis from the Sobel test results ensured that a Z-score = 5.21,  $p$  0.001. H2 was thus validated, and it has been proven that information sharing effectively mediates the connection between NC and IWB.

**Table 5.** Mediating effect of NC between NC and innovative work behavior.

Model Detail	Data	Boot	SE	Lower	Upper	Sig
NC→KS→IWB	0.34	0.28	0.4	0.1859	0.3684	0.001

Source: authors' computation.

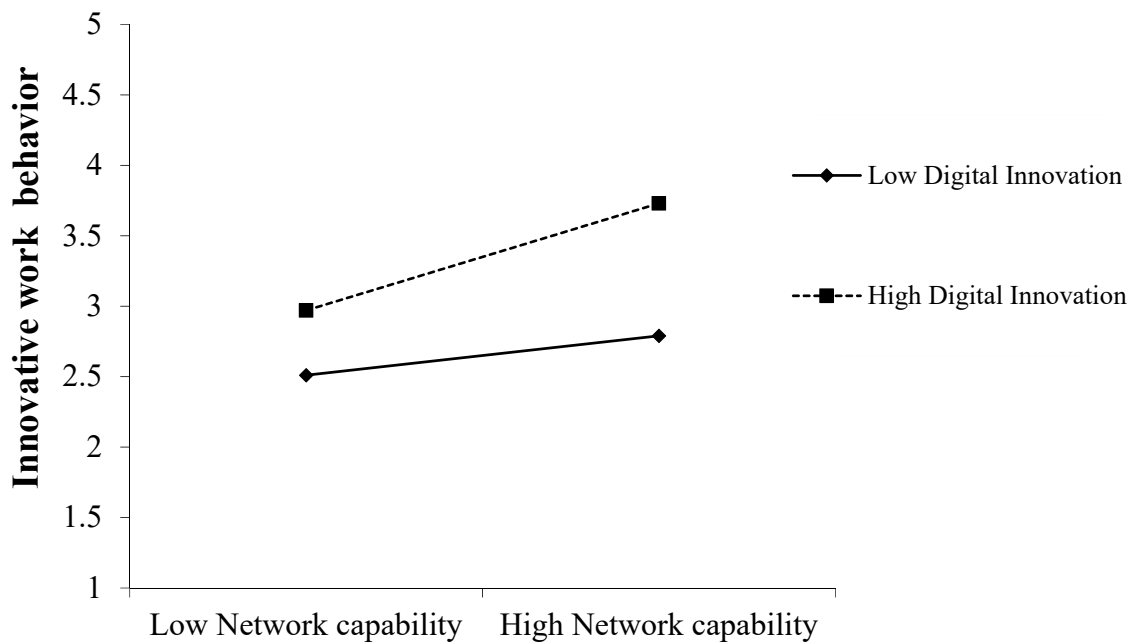
In order to examine the moderating impact of network capabilities and innovative practises, hierarchical regression analysis was utilised. Table 6 displays the outcome of digital innovation's moderating on the correlation between network capabilities and innovative practises. The study's findings, show that digital innovation has a substantial moderating influence on the relationship between network capabilities and IWB, such as: ( $\beta = 0.34$ ,  $p = 0.01$ ). H3 was therefore accepted.

**Table 6.** Hierarchal regression results for the moderating effect of digital innovation.

Detail	Innovative Work Behavior					
	$\beta$	T Value	$\beta$	T Value	B	T Value
Step-1						
Respondent experience	0.13	0.28	0.24	0.28	0.19	1.32
Respondent education	0.18	0.26	0.14	0.96	0.02	0.15
Step 2						
Network Capability			0.18 *	7.86	0.24 *	3.64
Digital Innovation			0.14 *	4.62	0.28 *	4.84
Step 3						
NC × DI					0.34 **	5.24
F		4.16 **		16.57 *		16.22 *
R <sup>2</sup>		0.06		0.28		0.26
$\Delta R^2$				0.26 **		0.03 *

Note: \*  $p < 0.05$ ; \*\*  $p < 0.01$ . Source: authors' computation.

Figure 2 shows a graphical representation of the moderating effect of digital innovation on network capability and innovative work behavior.



**Figure 2.** Slope analysis of the moderating effect of digital innovation. Source: authors' results.

## 5. Discussion

This study's conceptual model examines the mediation role of knowledge sharing and the moderation role of digital innovation between network capability and the IWB of employees. The outcomes present that NC can directly improve IWB, though if knowledge sharing is included as a mediator and digital innovation as a moderator, the direct positive association between NC and IWB will attenuate. To test the relationship between all these variables, three hypotheses were developed in this study. This study's H1 proposes that NC is positively linked with IWB. The H1 findings are consistent with prior studies outcomes that IWB is a fundamental idea and resource implanted that is obtained, trained, and equipped for purposeful behavior, which is closely related to the network capability outcomes [22]. Our emphasis on networking, specifically as an indicator of IWB, fills a significant gap in the literature.

The H2 present that knowledge sharing plays a mediation role by which network capability benefits its workers IWB. The outcomes of this research are also congruent with prior literature knowledge; several proponents claim that knowledge sharing is a vague form that lays the foundation for networking economic benefits and boosts productivity of employees IWB in the energy sector [28]. Examining the impact of NC on IWB is essential to comprehending how to effectively involve energy company staff in innovation processes given the significant role of knowledge sharing between them, particularly in the context of overall innovative behavior. Network capability resources help in making plans and developing innovative ideas, which is beneficial in supporting collaborators and workers and also increases the institution's revenue and prosperity, which helps in overcoming challenges and increasing the IWB of its members [29]. Furthermore, this research H3 demonstrates that digital innovation performs moderation in the linkage between network capability and IWB. This study's results imply that digital innovation indirectly affects the IWB of employees through influencing network capability. It indicates that firms that implement digital innovations may strengthen the link between the adoption of creative work behaviors and their network capabilities [40,60]. Organizations can foster a working atmosphere that encourages and promotes employees' involvement in creative behaviors by employing digital tools, technology, and processes [44,61]. The benefits of network capabilities in promoting creativity are further enhanced by the opportunities for cooperation and sharing of knowledge and accessibility to resources that offer technological developments [39,46,51]. This research emphasizes how crucial it is to incorporate digital

strategies and technology into organizational practices in order to effectively utilize network capabilities and foster an innovation culture. To take advantage of the synergistic impacts of network capabilities, digital innovation, and innovative work behavior, organizations should invest in digital resources, offer training and assistance, and promote a digital mentality.

Overall, this study shows that NC and IWB are directly linked, and knowledge sharing mediates the relationship between them. Moreover, this study demonstrates that DI plays a moderating role with indirect influence between network capability and IWB of energy companies.

### 5.1. Theoretical Implications

This research finding adds to the theoretical improvement in the following ways: Firstly, this research suggests that greater network capabilities result in an increase in IWB, highlighting the significance of a strong network infrastructure in encouraging creative behavior. It implies that businesses with excellent network capabilities are apt to display greater levels of IWB. Second, this study focuses on the facilitating function of knowledge transfer between NC and IWB. This research suggests the relationship between network capabilities and innovative work behavior is strongly influenced by information sharing procedures. Firms with excellent network capabilities were more likely to encourage a climate of information sharing, which has a positive impact. This suggests that in order to maximize the influence of network capabilities on encouraging creativity, it is essential to create an atmosphere that promotes and supports information exchange.

Additionally, this research shows that the stronger links between network capabilities and IWB may be strengthened by rising levels of DI. This suggests that businesses should embrace digital technologies, make use of them, and improve their network capabilities in order to stimulate employee innovation. In summary, this study provides insightful advice for organizations looking to advance IWB. Organizations should proactively nurture an innovation culture and create a work environment that supports and encourages innovative work behavior among their workers by acknowledging the significance of network capabilities, knowledge sharing, and digital innovation.

### 5.2. Practical Implications

From a practical perspective, this study proposes that energy company owners and management must be aware of the significant role knowledge sharing and digital innovation play in the relationship between network capability and IWB. Management requires building up network capabilities that guide knowledge sharing effectively in an organization and additionally nurturing an environment where information and ideas can be pursued in competitive innovation. In different interviews with owners and managers of energy companies, it is clear that an attitude of openness to innovation and experimentation is essential for performance-relevant IWB. Our research also shows that the ability and chance of employees, two prerequisites for individual knowledge sharing, have a direct impact on NC and innovative work behaviors. This suggests that there is a single, underlying element that describes why individuals who can share information more effectively and who have the chance to do so are much more liable to innovate. Examining the impact of NC on IWB is essential to comprehending how to effectively involve staff in innovation processes given the significant roles that staff play in energy sectors, particularly in the context of overall innovative behavior. Thus, this study suggests that people need to be motivated in response to having the capacity to impart their expertise from NC on IWB, as this is a challenging job, particularly while tacit, 'sticky' awareness needs to be passed to others as well. Last but not least, "willing and competent" workers should also be given the chance to impart their knowledge. Because the transfer of implicit knowledge through the process of osmosis is complicated and time-consuming but plays a crucial role in knowledge sharing.

### 5.3. Research Limits and Further Developments

This paper's findings, though reliable with academic arguments and practical forecasts, have some restrictions that give directions for future study. First of all, in this paper, a quantitative research design was used, which could develop issues of common method bias. While these dilemmas cannot be fully ruled out, some considerations diminish this problem. In future research, a qualitative or longitudinal research design should be used to better understand the relationship between the proposed variables. Secondly, we cannot argue that this study's theoretical model is fully representative of the perception we intend to explain. We recommend that in the future, another experimental model with similarly sound intentional descriptive variables might create further exciting outcomes. The addition of mediators and moderation between NC and IWB, such as organizational readiness and AI adoption, must be examined in the upcoming future. Although models might show a discrepancy from one another, they can be considered different aspects of the same phenomenon. Thirdly, current research authors recommend scholars carry out a number of studies in the future to explicitly investigate the underlying connections among all of these constructs. Lastly, this research was country-specific and carried out in the energy sector; further research should be conducted in other nations or sectors to further understand the possible influence of the presented model. Particularly, this may be helpful in examining what impacts social, political, and institutional environments would have on model relations.

## 6. Conclusions

Current research proposes that network capability, KS, and digital innovation lead to improved IWB for energy companies. This research further emphasizes the critical role of KS as a mediator and digital innovation as a moderator when the association between NC and IWB is investigated. This research outcome presents exciting practical implications for energy companies seeking to change their orientation towards more efficient and clean/green renewable energy.

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