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Can HPWS Promote Digital Innovation? E-Learning as Mediator and Supportive Organisational Culture as Moderator

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Abstract: Nowadays, corporations constantly innovate to stay ahead of the competition in the contemporary business environment. Thus, enterprises invest in high-performance work systems (HPWS) that foster employee growth and improve their abilities, in turn, to accomplish digital innovation in the circular economy. The primary objective of this study is to better understand how high-performance work systems (HPWS) and digital innovation interact, while also examining the potential mediating roles of e-learning and the moderating effects of a supportive organisational culture between them. For data collection, a questionnaire and quantitative method was used, and the survey included a sample of 575 workers from the tourism sector of China. According to the findings, HPWS is favourably correlated with digital innovation, and e-learning serves as a partial intermediary in this relationship. The outcomes also demonstrate that an encouraging organisational culture further strengthens the connection between HPWS and digital innovation. These findings emphasized the value of introducing HPWS and e-learning initiatives in organisations to promote digital innovation while also highlighting the necessity of a supportive culture to maximize the advantages of these projects.

Keywords: HPWS; e-learning; supportive organisational culture; digital innovation; tourism sector

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1. Introduction

In the era of digitalization, enterprises have come to rely on digital technology to increase their personnel's efficiency, maintain competitiveness, and meet customer demands in a rapidly shifting technological landscape [1]. High-performance work systems (HPWS) have been related to the advancement of workplace innovation, specifically digital innovation. The practices that make up HPWS are comprised of approaches designed for developing workers' abilities, understanding, and motivation; involve employee communication, training, and development; and performance-based rewards [2]. When businesses successfully innovate with the latest technologies, they are better positioned to acquire a competitive edge, maximize productivity, and satisfy changing customer needs [3]. Hence, it is significant for businesses to understand the factors that contribute to digital innovation. A vital aspect of a firm's success in the digital age includes digital innovation, which involves the use of digital technologies to create new and improved products, services, and processes [4]. The high-performance work system (HPWS) is a collection of procedures that raise employee motivation and skill levels. By incorporating the principles of the circular economy, organisations can further leverage their selective staffing practices and HPWS implementation [5]. In a circular economy framework, businesses strive to minimize waste, promote resource efficiency, and encourage the reuse, recycling, and repurposing of materials. Selective staffing aligns with these principles by ensuring that individuals with the best skills and behavioural patterns are hired, leading to improved productivity and reduced resource wastage [3]. Moreover, the extensive training provided to employees underpins

their familiarity with sustainable processes and practices, enabling them to contribute to the organisation's circular economy initiatives [6]. Internal mobility opportunities within a circular economy context can facilitate the development of employees' skills in sustainable business practices, promoting their involvement in the design and implementation of innovative circular solutions [5]. Thus, the combination of selective staffing, HPWS, and the circular economy concept creates a synergistic approach that drives both organisational success and sustainability [7]. Employees can acquire the information and skills necessary to comprehend and apply the ideas of the circular economy through training and development programmes [1]. However, fostering a culture of digital innovation requires not only technological investments but also significant human-resource investments [6]. However, the tourism industry is one of the most competitive and dynamic areas and it has been quickly adopting digital technologies to improve its consumer experience and retain its competitiveness [7]. high-performance work systems (HPWS) are a set of human-resource management practices that are designed to boost employee engagement, motivation, and skill levels in order to enhance organisational performance [8]. Innovation in the digital sphere refers to the creation and implementation of new technologies, applications, and services that enhance business performance and establish a competitive edge [9]. Business involvement, training and development, and performance-based rewards are examples of practices that HPWSs adopt to enhance the skills, knowledge, and motivation of their employees [10]. In the context of establishing an innovative culture and facilitating the adoption of digital technology, HPWS is an important aspect [2]. Additionally, HPWSs foster a culture of innovation by encouraging employee involvement and creativity [11]. However, further research is required to fully understand the nature and scope of this association. E-learning has emerged as a popular tool for promoting employee learning and development in organisations and has the potential to enhance employee skills and knowledge in the digital domain [12]. However, the use of e-learning as a mediator between HPWS and digital innovation has not been extensively studied. E-learning can be delivered through a variety of formats, including online courses, webinars, and simulations [13]. In addition, e-learning could enhance the impact of HPWS on digital innovation by providing employees with the necessary skills and knowledge to effectively adopt and utilise digital technologies [12]. Accordingly, e-learning acts as a middleman by offering a flexible platform for delivering training that is specifically targeted towards the circular economy. Employees can obtain pertinent material using e-learning at their own time and pace, learning the expertise they require to successfully apply circular ideas [4]. Thus, this study aims to examine how e-learning mediates the relationship between HPWS and digital innovation. A supportive organisational culture, characterized by a climate of trust, openness, and risk-taking culture, that values and supports innovation, risk-taking, and experimentation, has also been found to be a critical factor in promoting digital innovation [14]. A supportive organisational culture encourages employees to take risks, try new approaches, and think creatively, which could lead to the development of innovative products, services, and processes [15]. As a moderator between HPWS and digital innovation, a supportive organisational culture enhances the impact of HPWS on digital innovation by providing an environment that fosters innovation and supports the adoption of digital technologies. Additionally, the role of supportive organisational culture in promoting digital innovation has been recognized but its moderating effect on the relationship between HPWS and digital innovation has not been thoroughly examined. While the literature has been explored, the factors such as digital technology [16] and digital workplace [17] as key determinants in the achievement of digital innovation; in addition, previous researchers also explored the impacts of HPWS on knowledge-sharing behaviour [18] and employee wellbeing [19]; however, the relationship between factors suggested by this study and digital innovation remains underexplored. Therefore, to meet this gap, this research aims to examine the relationship between HPWS and digital innovation. Furthermore, this research explores how e-learning mediates and supportive organisational culture moderates in the relationship between HPWS and digital innovation. By exploring these relationships, this

study seeks to provide insights into how organisations can strategically invest in human resources to foster a culture of digital innovation and gain a competitive edge in the digital age. Specifically, this study has three main objectives.

- Does HPWS is positively linked with digital innovation?
- Does e-learning mediate in the relationship between HPWS and digital innovation?
- Do supportive organisational cultures moderate between the HPWS and digital innovation link?

However, the specific mechanisms through which a supportive organisational culture enhances the impact of HPWS on digital innovation remain underexplored and further research is needed to better understand this relationship. The remaining paper was arranged as follows: Section 2 includes a model for developing hypotheses and conducting research; the subsequent section contains methodology and measurement of items. Section 4 comprised analysis and data results and, lastly, Section 5 encompasses discussion along with implications and future directions.

2. Hypothesis Development and Research Model

2.1. HPWS and Digital Innovation

HPWS is a term used to describe a collection of distinct but connected HR procedures intended to recruit, retrain, and inspire staff members [20]. Additionally, HPWS improves employee knowledge and abilities, which can improve their capacity to exploit digital technologies and create novel solutions. These procedures include selective hiring, in-depth training, internal mobility, job stability, a clear job description, result-driven evaluation, and engagement are all part of HPWS [21]. Employers who practice selective staffing pick and hire candidates with the best skills and behavioural patterns. The process by which businesses improve employees' familiarity with their business' processes, markets, clients, colleagues, and goods is referred to as extensive training [10]. Internal mobility refers to the practice of businesses offering employees broad career paths and internal promotion. Therefore, the implementation of a high-performance work system (HPWS) promotes digital innovation and enhances the likelihood of employee promotion [5]. In order to encourage employees to work harder, companies often use a result-oriented appraisal, which evaluates individuals based on long-term, objective, and quantifiable results [2]. Digital innovation is the creation and application of new products, services, and technology that enhance organisational performance and competitive advantages [22]. HPWS also offers prizes and incentives for creativity, which can encourage staff to create and deploy new digital technologies [23]. These practices can improve employee engagement and motivation, which can lead to a greater commitment to organisational goals, including the development and implementation of digital innovations [20]. This enables employees to stay current with emerging technologies and fashions while also building the skills needed for digital innovation [24]. The application of digital technologies and business models that improve sustainability within the circular economy is made possible by digital innovation, which is inspired by HPWS [20]. Employees who receive frequent training and development are more likely to feel at ease with new technologies, be eager to experiment with them, and be able to use them in their work. Employee involvement and empowerment are key components of HPWS practices, which can boost innovation, knowledge exchange, and experimentation [25]. Therefore, HPWS practices place a strong emphasis on providing staff with chances for ongoing learning and growth [24]. Employees are more likely to provide original solutions and concepts for digital innovation when they are given the opportunity to participate in decision-making processes and to voice their opinions [26]. Additionally, HPWS promotes employee participation and communication, which may improve idea sharing and teamwork on initiatives including digital innovation. Additionally, it gives employees the latitude and resources they need to put novel ideas into action, fostering digital innovation [27]. Hence, this research suggests that HPWS is positively associated with digital innovation.

H1. *HPWS is directly linked with digital innovation.*

2.2. E-Learning Mediates

The use of e-learning has become the standard training strategy for delivering convenient information access and a personalized training experience, which boosts performance, productivity, and retention [28]. Businesses can ensure that their staff members have the skills needed to implement digital advances, such as HPWS, by offering them training in these areas. This is especially crucial for the tourism sector because of the rapid advancement of digital technologies [29]. Employee acceptance levels of e-learning systems can be influenced by their impression of learning design and management; hence it is important to critically evaluate employee perceptions of e-learning [28]. It is proposed that e-learning mediates the interaction between HPWS and digital innovation in tourism organisations. Since e-learning offers a convenient and adaptable means to deliver training and development courses to staff members, it enhances their abilities and expertise in utilising digital technologies for innovation [26]. Secondly, e-learning can make it easier for staff members to share knowledge and promote best practices, which could encourage teamwork in the attainment of digital innovations [30]. Businesses can establish online communities of training where staff members can exchange knowledge, ask questions, and work together on projects by using the e-learning tool [31]. Furthermore, e-learning can assist businesses in remaining competitive in the tourism sector while keeping up with the continually evolving technology world [32]. Organisations guarantee that their staff members are informed of the newest technical advancements and are able to quickly respond to market changes by giving them access to training and development programmes [33]. In addition, e-learning can perform a crucial role in mediating the association between HPWS and digital innovation within tourism organisations. The interaction between HPWS and digital innovation inside tourism organisations can be mediated by e-learning, in our opinion. E-learning can improve an organisation's capacity to develop and implement digital innovations that enhance organisational performance and competitive advantage by offering employees training and development programmes, facilitating information sharing and collaboration, and aiding organisations in remaining competitive [31].

H2. *The association between HPWS and digital innovation is mediated through e-learning.*

2.3. Supportive Organisational Culture Moderates

High-performance work systems (HPWS) are a collection of human resource management techniques created to improve employee commitment, inspiration, and expertise, which can foster digital innovation [17]. When new technologies, goods, and services are developed and put into use, it is referred to as digital innovation. This boosts business performance and gives companies a competitive edge [23]. Organisational culture refers to the shared values, beliefs, and norms that guide the behaviour of individuals within an organisation [14]. A supportive organisational culture is one where employees feel free to take chances and try out novel ideas, and where creativity is encouraged [16]. A supportive organisational culture helps employees to accept and apply circular concepts by fostering values and behaviours that support them in risk-taking, innovation, and collaboration, resulting in a work environment where people feel free to use circular economy principles [14]. Therefore, supportive cultures increase open dialogue and teamwork among employees and give staff members the time, skills, and technology access they need to participate in digital innovation and required to promote the exchange of ideas and the creation of digital innovations through collaboration [34]. SOC makes it possible to create and use business models and digital technologies that support sustainable practices such as waste minimization and resource optimisation [5]. Employees are more likely to adopt HPWS practices in such a culture and apply their knowledge and abilities to create digital breakthroughs [34]. Accordingly, this study suggests that a supportive organisational culture moderates the relationship between HPWS and digital innovation within tourism

organisations. Since an encouraging organisational culture motivates staff members to take chances and be creative, a supportive organisational culture might result in the creation of digital breakthroughs [16,35]. In conclusion, tourism businesses should promote an innovative culture and give their staff the resources they need to participate in digital innovation by recognising the role that a supportive organisational culture plays in moderating the link between HPWS and DI shown in Figure 1.

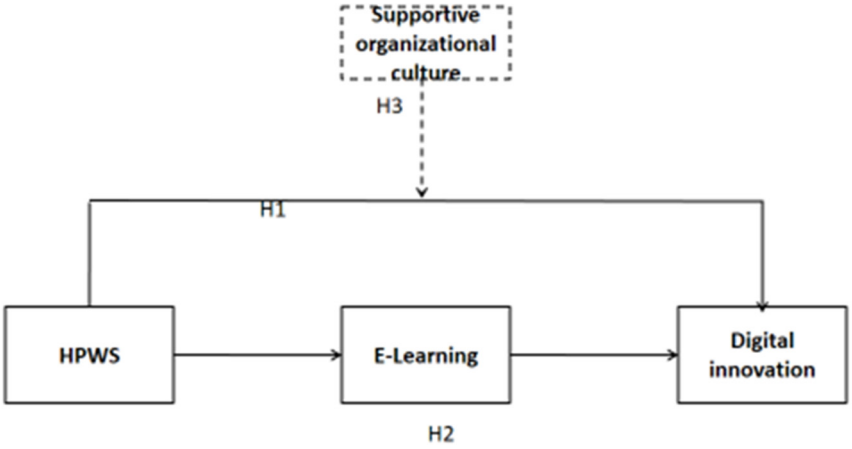

Figure 1. Theoretical Framework.

H3. *The HPWS and digital innovation link is moderated through supportive organisational culture.*

3. Methodology

For data collection, we select participants from tourism firms situated in China. The list of tourism firms was obtained from SMEDA and we choose tourism firms that are rationally thorough and illustrative of the service industry. These firms participated in the digital practices and employed HPWS as their operational mechanism. They offer services and sell products via e-applications which are definitely accessible to the clients. Consumers can place orders through their mobile applications on the internet and official websites. This was quantitative research and a random sampling technique was used for the survey. Data were gathered through 575 questionnaires sent through e-mail and postal addresses to participants of the survey from diverse tourism organisations. For sampling, the targeted respondents of the study were CEOs, owners, and senior managers who are involved in the decision-making process and know all aspects of the business operations. The research questionnaires were distributed with the help of five research associates in soft form; the questionnaire link was shared with all respondents who agreed to participate in the survey. After one month of effort, out of a total of 575 questionnaires, just 421 questionnaires were returned back and wherein only 398 questionnaires were complete and further useable for analysis. The remaining 177 questionnaires were incomplete and discarded and represent a return rate of 69.21%. The document was attached with each questionnaire to describe the study purpose and assured confidentiality that respondent's detail will be used for research purposes only. Additionally, earlier consent from all participants was taken and also they could not be forced to fulfil the questionnaire.

A two-part questionnaire was included. The respondents' age, education, and experience are included in Section 1's demographic information. The research variable items are included in Section 2.

This study has main three objectives. First, this study examines how HPWS is positively linked with digital innovation. Second, this research investigates in what way e-learning mediates the relationship between HPWS and digital innovation. Third, this study explores how supportive organisational culture moderates between the HPWS and digital innovation link.

3.1. Measurement

For the measuring of the study constructs, namely HPWS, e-learning, supportive organisational culture, and digital innovation, items from earlier studies were utilised in the current study. Five-point Likert scales, ranging from "1 = strongly disagree" to "5 = strongly agree," were used to confirm the accuracy and consistency of each item.

3.1.1. HPWS

For the measurement of HPWS, a nine-item scale was used which is adopted from (Fu et al., 2015) [17]. This construct measures how a set of practices enhances a worker's skills and productivity, as well as supporting organisational objectives and policies. The example item is "Are administered an employment test (e.g., skills tests) prior to hiring?".

3.1.2. E-Learning

To measure e-learning, a nine-item scale was used that is adapted from the prior research of (Chen et al., 2011) [36]. This variable describes the use of technical tools to convey informative content and training programs to novices in an interactive and communicative manner. The sample example is "The e-learning system makes it easy for you to find the content you need".

3.1.3. Supportive Organisational Culture

The supportive organisational culture is measured through a four-item scale which is adapted from (de Man and Luvison, 2014) [37]. This construct measures how a positive and comprehensive work setting, wherever workers feel valued, engaged, and sustained in their private and professional development. The question item is "Our senior executives often speak about the importance of digital innovation to our organization".

3.1.4. Digital Innovation

To measure digital innovation, a six-item scale was used which is adopted from [38]. This variable measures how an organisation uses different technologies and devices to enhance business services and processes, and develop products, in addition to generate novel value for consumers and stakeholders. The example question is "The applications of our digital solutions are totally different from our competitors".

3.1.5. Control Variables

The control variables used in this study are firm size, age, experience, and education of employees which could enhance the validity and reliability of the research model.

4. Results

4.1. Data Analysis and Results

We used CFA to examine how the study variables of high-performance work systems, e-learning, supportive organisational culture, and digital innovation have changed. We were able to compare our model to the best available. Three alternative models were discarded because they did not match the data as well as our fourth-factor model. The fit keys, with values of 2 = 1032.48, CFI = 0.92, GFI = 0.93, and RMSEA = 0.04, demonstrated the general model fitness. As stated in Table 1, the model's fitness was confirmed in accordance with Anderson and Gerbing [38].

Table 1. CFA Results.

Model Description	χ^2	df	χ^2/Df	Rmesha	GFI	CFI
Hypothesized 4th-factor model	1032.48	475	2.174	0.04	0.92	0.93
3rd-factor model	1145.52	395	2.900	0.13	0.84	0.85
Two-factor model	1215.47	375	3.241	0.18	0.72	0.73
Single-factor model	1452.42	355	4.091	0.22	0.62	0.63

4.2. Reliability and Validity

The research was conducted using SPSS 18.0 and structural equation modelling (SEM). Results show the average extracted, Cronbach's alpha, and convergent validity. Using an approach, the discriminant validity was assessed, according to Fornell and Larcker [39]. Table 1 shows that all values were accurate and that CR and AVE were above the cutoff limits, i.e., composite reliability was higher than 0.70, average variance extract was higher than 0.50, and CR > AVE. According to Table 2, Cronbach's alpha exceeded 0.60.

Table 2. Loading Factor, AVE, and Alpha Results.

Construct Details	L.F	*T*	Alpha	C-R	A-V-E
High-Performance Work System			0.88	0.92	0.78
HPWSys-1	0.86	18.64			
HPWSys-2	0.78	12.52			
HPWSys-3	0.82	24.34			
HPWSys-4	0.74	17.41			
HPWSys-5	0.89	16.29			
HPWSys-6	0.77	24.52			
HPWSys-7	0.86	14.57			
HPWSys-8	0.88	25.41			
HPWSys-9	0.74	22.46			
E-Learning			0.86	0.98	0.74
E-Lear-1	0.82				
E-Lear-2	0.78				
E-Lear-3	0.79				
E-Lear-4	0.87				
E-Lear-5	0.82				
E-Lear-6	0.86				
E-Lear-7	0.76				
E-Lear-8	0.79				
E-Lear-9	0.84				
Supportive Organisational Culture			0.82	0.84	0.76
SOCul-1	0.86	15.47			
SOCul-2	0.89	13.58			
SOCul-3	0.74	14.63			
SOCul-4	0.79	15.41			
Digital Innovation			0.98	0.96	0.72
DInn-1	0.84	15.23			
DInn-2	0.88	13.63			
DInn-3	0.78	14.54			
DInn-4	0.82	15.27			
DInn-5	0.87	14.59			
DInn-6	0.81	14.27			

4.3. Descriptive Statistics

Table 3 shows the outcomes of the correlation, standard deviation, and mean value. The VIF marks were below the cut-off standard of 10.0 which confirmed that there was no issue of multicollinearity.

Table 3. Mean, SD, and Correlations.

Constructs		M	S-D	Alpha	1	2	3	4	5	6
1	Respondent Education	1.86	0.86	0.82	1.00					
2	Respondent Experience	1.24	0.33	0.85	−0.08	1.00				
3	HPWS	3.65	0.26	0.89	−0.03	−0.19	1.00			
4	E-Learning	3.65	0.35	0.81	0.03	−0.06	0.32 **	1.00		
5	SOC	3.75	0.58	0.86	−0.09	−0.16	0.24 **	0.32 *	1.00	
6	Digital Innovation	0.54	0.79	0.84	0.03	−0.10	0.28 **	0.38 **	0.246 **	1.00

Note: * <0.05, ** 0.01.

4.4. Hypothesis Testing

This research H1 demonstrates that HPWS is positively related to digital innovation. Furthermore, the H2 validates that e-learning mediates the linkage between HPWS and

digital innovation. Additionally, this research H3 confirms that supportive organisational culture moderates the association between HPWS and digital innovation. Table 4 presents the results of H1. Structural equational-modelling analysis was used. The results reinforced that H1 stating "High performance work system (HPWS) has significant influence on digital innovation (DI)" is accepted, (β = 0.28, *t* =14.57, *p* = Sig).

Table 4. Hypothesis Result of High-Performance Work System to Digital Innovation.

Model	Hypothesis Description	B	F	*T*	Sig	Remarks
HPWS → DI	HPWS to Digital Innovation	0.28	18.045	14.570	0.000	Accepted

For testing H2, suggesting that e-learning mediates between HPWS and digital innovation (HPWS → EL → DI), Preacher and Hayes's [40] approach was conducted with a 5000-bootstrap technique at a 95 % assurance level. The outcomes depicted in Table 5 show the indirect role of e-learning between HPWS and digital innovation. The results proved that e-learning acts as a mediator (β = 0.26, L = 0.1632 to U = 0.2274), Therefore, H2 was accepted, and it is proven that the HPWS and DI link is mediated through EL.

Table 5. Mediating Role of E-Learning between HPWS and Digital Innovation.

Construct Description	Data	Boot	SE	L	U	Sig
HPWS → EL → DI	0.2649	0.3282	0.46	0.1632	0.2274	0.0000

Third, Table 6 displays the moderating impact of an organisational culture that values high performance on the direct relationship between digital innovation and high-performance work systems. The analysis of hierarchical regression was used. The study's findings, which show that the SOC has a substantial negative moderating effect against the relationship between HPWS and DI, are as follows: (=0.34 **, *p* 0.01).

Table 6. Hierarchal Regression results for moderating role of supportive Organisational Culture.

	Digital Innovation					
Detail	Beta	*T* Value	Beta	*T* Value	Beta	*T* Value
Step-1						
Respondent education	0.11	0.05	0.3	0.16	1.05	1.35
Respondent experience	0.16	0.28	0.18	0.85	0.05	0.16
Step 2						
HPWS			0.34 *	5.75	0.28 *	4.84
SOC			0.22 *	4.68	0.32 *	5.18
Step 3						
HPWS x SOC					0.34 **	2.24
F		4.78 **		12.35 *		14.28 *
R2		0.05		0.26		0.26
R2				0.24		0.02

Notes * $p < 0.001$, ** $p < 0.05$.

5. Discussion

The findings of this study provide important insights into the role of high-performance work systems (HPWS), e-learning, and supportive organisational culture in promoting digital innovation. First off, this study discovered a link between HPWS and digital innovation, suggesting that businesses that invest in HPWS are more likely to support this trend. HPWS uses techniques including employee participation, training and development, and performance-based incentives that help employees learn new skills, promote teamwork

and collaboration, and promote an innovative culture. Therefore, organisations should concentrate on deploying HPWS to improve their capacity for digital innovation. These research outcomes are consistent with the prior literature that employers who practice selective staffing pick and hire candidates with the best skills and behavioural patterns. The process by which businesses improve employees' familiarity with their business' processes, markets, clients, colleagues, and goods is referred to as extensive training [10]. Internal mobility refers to the practice of businesses offering employees broad career paths and internal promotion. Therefore, the implementation of a high-performance work system (HPWS) promotes digital innovation and enhances the likelihood of employee promotion [5]. The H1 achieves the first and primary goal of this study that HPWS is directly linked with digital innovation.

Second, this study also explored that e-learning mediates the link between HPWS and digital innovation to some extent. E-learning offers a powerful platform for employee training and development that can improve workers' knowledge and abilities and eventually encourage digital innovation. The partial mediation implies that although employee motivation and creativity also have a substantial influence, e-learning is an important aspect in fostering digital innovation. The findings of the H2 support the previous literature that businesses can ensure that their staff members have the skills needed to implement digital advances such as HPWS by offering them training in these areas. This is especially crucial for the tourism sector because of the rapid advancement of digital technologies [29]. Employee acceptance levels of e-learning systems can be influenced by their impression of learning design and management; hence, it is important to critically evaluate employee perceptions of e-learning [28]. The H2 achieves the second goal of this research that e-learning performs mediation in the linkage between HPWS and digital innovation.

Third, this study determined that the association between HPWS and digital innovation is moderated by an encouraging organisational culture. Trust, transparency, and a willingness to take chances are qualities that define a supportive culture. Employees in such a culture may have the freedom and liberty to test out novel concepts and technology, which may ultimately result in digital innovation. The results are congruent with findings that a supportive organisational culture is one where employees feel free to take chances and try out novel ideas, and where creativity is encouraged [16]. A supportive organisational culture helps employees to accept and apply circular concepts by fostering values and behaviours that support them in risk-taking, innovation, and collaboration, resulting in a work environment where people feel free to use circular economy principles [14]. Therefore, supportive cultures increase open dialogue and teamwork among employees and give staff members the time, skills, and technology access they need to participate in digital innovation and required to promote the exchange of ideas and the creation of digital innovations through collaboration [34]. The moderating impact shows that organisations should work on developing a supportive organisational culture in addition to investing in HPWS and e-learning in order to maximise the advantages of these initiatives. Hence, the H3 attained the third goal of this research that SOCs moderate the association between HPWS and digital innovation.

In conclusion, HPWS practices give staff members the knowledge and zeal to promote sustainable practices inside the circular economy. By offering a forum for instruction on the concepts of the circular economy. Overall, the study's findings emphasise the value of a multifaceted strategy for fostering digital innovation in businesses. Organisations should spend money on HPWS and e-learning capabilities while simultaneously building a culture that welcomes risk-taking and innovation. Organisations can do this to improve their digital innovation capabilities and stay one step ahead of the competition in the quickly shifting business environment of today.

5.1. Practical Implications

The findings of this study have several practical implications for organisations striving to enhance their digital-innovation capabilities. First and foremost, this research focused

on the value of spending money on high-performance work systems (HPWS). To promote an innovative culture and improve staff abilities, organisations can put into practice strategies such as employee participation, training and development, and performance-based rewards. By doing this, businesses may generate a workforce that is more creative and better suited to utilising digital technologies and coming up with original digital solutions. This study also highlights the value of e-learning as a tool for encouraging digital innovation. Firms may equip their staff with the skills and information needed to adopt new technology and create novel solutions by using e-learning platforms. Organisations should therefore invest in e-learning projects to improve employee knowledge and abilities, which will ultimately result in digital innovation. Third, this research highlights the significance of creating an organisational culture that supports innovation and takes risks. Organisations should foster a climate of openness, trust, and willingness to try out novel concepts and technology. Organisations can encourage staff to take chances and generate creative solutions to improve their capacity for digital innovation by doing this. This research also enlightens the value of a multifaceted strategy for encouraging digital innovation. Organisations should prioritise developing a supportive organisational culture that promotes innovation and risk-taking in addition to investing in HPWS and e-learning. In doing this, businesses may generate a workforce that is more creative and better suited to utilising digital technologies and coming up with original digital solutions. Additionally, according to the study's practical implications, investing in HPWS and e-learning, and a supportive organisational culture, are crucial for enhancing digital innovation capabilities. In the quickly evolving business environment of today, organisations that promote digital innovation in multiple ways are more likely to stay one step ahead of the competition.

5.2. Theoretical Implications

This study's findings have some theoretical implications on high-performance work systems (HPWS), e-learning, and supportive organisational culture. First, by focusing on the beneficial connection between HPWS and digital innovation, this study adds to the body of knowledge on HPWS. The findings imply that organisations more likely to establish an innovative culture that fosters digital innovation are those that adopt HPWS practices. This study adds to our understanding of how HPWS affects innovation by demonstrating how it might, in particular, support digital innovation. Second, by highlighting e-learning's function as a mediator in the interaction between HPWS and DI, this study adds to the body of knowledge on the subject. The results imply that e-learning can improve employee knowledge and abilities, which can result in digital innovation. The significance of e-learning as a tool for developing digital literacy is highlighted by this study. This study highlights the importance of e-learning as a tool for encouraging digital innovation and offers suggestions for how to utilise it in conjunction with other HPWS practices to maximise its impact.

Third, the study adds to the body of knowledge on supportive organisational culture by underlining how it influences whether HPWS and digital innovation interact. The results imply that a supportive workplace environment can give staff members the freedom and autonomy to try out novel concepts and technology, which can ultimately result in digital innovation. To improve digital-innovation capabilities, this study emphasises the need of developing a supportive culture that promotes creativity and risk-taking. Overall, the study's theoretical implications assist researchers in comprehending the intricate interactions between HPWS, e-learning, a supportive organisational culture, and digital innovation. This study sheds light on the ways in which these factors interact and emphasizes the significance of these factors in promoting a culture of digital innovation in organisations.

5.3. Limitations and Future Directions

This study has a number of limitations that should be taken into account when evaluating the results. First of all, only one industry's data was used in this study; it may

be difficult to extrapolate the results to other sectors. To ascertain how much these results can be applied across industries, further studies should examine the association between HPWS, e-learning, supportive organisational culture, and digital innovation. Secondly, this study also used self-reported data, which could add bias and reduce the validity of the results. To improve the validity of the results, future research could evaluate digital innovation using objective metrics and other factors. Thirdly, this study did not examine how external variables such as market competition or the regulatory environment influence digital innovation. The effects of these external factors on the interactions between HPWS, e-learning, supportive organisational culture, and digital innovation could be investigated in further research. Finally, to determine the degree to which these associations change over time, future research might investigate the longitudinal effects of HPWS, e-learning, and a supportive organisational culture on digital innovation. They may also shed light on practical methods for fostering digital innovation in businesses.

6. Conclusions

The study investigated the association between the HPWS, digital innovation, the mediator, e-learning, and the moderator, supportive organisational culture. The results showed that HPWS positively had a major impact on digital innovation. Additionally, e-learning mediates and supportive organisational culture moderates in the relationship between HPWS and digital innovation. These findings imply that organisations may encourage digital innovation by putting HPWS into practice, encouraging a culture of learning and innovation, and using e-learning as a tactical tool. This study provides insightful information for organisations looking to improve digital innovation through the successful integration of high-performance work systems, e-learning, and supportive organisational culture by highlighting the significance of both organisational practices and personnel development.

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