

Digital Readiness and Digital Competences Influence on Information Management System: Organizational Support as Moderator

QU Zheng

Recommended citation:

Zheng, QU (2024). "Digital Readiness and Digital Competences Influence on Information Management System: Organizational Support as Moderator". *Profesional de la información*, v. 33, n. 4, e330408.
<https://doi.org/10.3145/epi.2024.ene.0408>

Manuscript received on December 30th 2023

Accepted on May 20th 2024



QU Zheng ✉

<https://orcid.org/0009-0008-4759-8173>

Institute of Cultural and Creative Industry

Shanghai Jiaotong University

Shanghai, 201109, China

quzheng2018@126.com

Abstract

Digital technology has made its impact globally through changes in both organizational processes and information management system (IMS). The current research aimed to examine the manner in which digital readiness and digital competences influence the implementation of IMS in Chinese organizations with organizational support as a moderator. The study also examines the mediating role of digital competences among digital tool application, digital media awareness and effectiveness of IMS. Survey questionnaires were used to collect data from a sample of 290 employees of private sector organizations in China. SPSS-AMOS data analysis tools were used to check the associations among variables. The outcomes indicated that the digital tool application and digital media awareness have a positive nexus with effectiveness of IMS. The results also revealed that the digital competences significantly mediates among digital tool application, digital media awareness and effectiveness of IMS, and that organizational support also significantly moderates among digital competences and effectiveness of IMS in private sector organizations in China.

Keywords

Digital Tool Application, Organizational Support, Digital Media Awareness, Digital Competences, Effectiveness of IMS.

1. Introduction

The development of digital technology has accelerated in the modern world and has influenced organizational processes globally, including those in China. Being one of the most developed economy of the world, China has gone through various changes towards digitization which affects almost all the fields of business and management (Luo *et al.*, 2023). Digital readiness is the ability of an organization to go digital and to actively incorporate the use of digital technologies in its operations (Machado *et al.*, 2021). This readiness entails the preconditions such as, technical infrastructure, policy environment, and organizational culture that is supportive of digital transformation. The government in China has been key in facilitating digital readiness through the launching of the Internet Plus initiative and Digital China that seeks to make internet integration for the conventional sectors (Zhou *et al.*, 2021; Zhang, 2023). Of the three major sub-activities of digital readiness, two of them include usage of digital tools and digital media awareness. The usage of digital tools can be described as the incorporation of applications, software, computer platforms, as well as any technology designed to enhance organizational work processes in terms of efficiency, production, and/or communication.

In China, Wen *et al.* (2022) assert that the use of the digital media tools has been propelled by both the national policies and the competitiveness of the markets. For example, cloud solutions, big data, and analysis, artificial intelligence are becoming embedded to the business enabling digital readiness. Digital media awareness, on the other hand, deals with



the knowledge of the digital media especially as a form of marketing communication and management of brands (**Di Vaio et al.**, 2021; **Prosper et al.**, 2023). In the Chinese context, **Su and Flew** (2021) believed that when it comes to digital mode, media awareness is important for reaching out to many users of the most used platforms like WeChat, Weibo and Alibaba. It is concluded that the organizations with high digital media awareness can properly manage and use these platforms to improve their clients' attention, their overall reputation, and presence.

Likewise, digital competences relate to the abilities and scholastic skills that are needed when using digital technologies. In more recent times, however, **Khin and Ho** (2019) asserted that skills in the use of digital technology have come to be regarded as important for organizational productivity in China. Higher levels of digital competences among employees influence the organization's use of Information Management System (IMS) more positively by enhancing the quality of data processed, decisions made, and organizational performance. Digital competences also work as a mediator that can positively influence the usage of the tool, increase awareness of digital media and make IMS more efficient and effective. The competences of the workforce, according to **Oberländer et al.** (2020), determine the possibility of efficient use of the available digital tools and the knowledge of the specifics of digital media. Skilled users of technology in the workforce should be able to fully explore the advantages given by the use of tools and media networks thereby able to understand efficient methods of information processing. In the context of China, several technological and learning trends have become apparent and manifest thus enhancing the workforce's ability to function effectively in digital environments (**Yurinova et al.**, 2022; **Strehovec**, 2023).

Information Management System (IMS) is a major system that is used in organizations to help in the management of information within organizations, data storage, processing, and collection (**Berdik et al.**, 2021). Proper IMS implementation, according to **Aydiner et al.** (2019), results in increased operational effectiveness, improved decision making, and increased competitiveness of enterprises. In recent decades, Chinese manufacturers have been quick in integrating IMS in their operations irrespective of the business sectors and these include manufacturing, finance, healthcare and e-commerce. Nonetheless, IMS is subject to certain principles which include digital readiness and skills.

Organizational support is regarded as a significant moderating variable in this study. It relates to the measures by which an organization can support the change process as well as can offer facility, training, and tools for digitization. In the context of China, organizational support is defined as the investment in the digital environment, provision of training programs and the cultivation of a positive attitude or mind-set to embrace change and go digital (**Zhu**, 2019). Organizational support is crucial in the case of IMS because it positively moderates the relationship between digital readiness and competences and system performance.

Manufacturing is a critical industry in China, thus, it forms part of the manufacturing industry that has benefited from the government's drive to go digital (**Dou; Gao**, 2022; **Tarwneh**, 2023). Due to this, China has introduced advance technologies to accomplish initiatives under "Made in China 2025" strategies and agenda for improving manufacturing industry. The current study considers China as an appropriate setting for analyzing the role of digital readiness and competences and their collective effect on IMS. The purpose of this research, hence, was to assess the extent to which the use of the digital tools and media awareness aids digital readiness and the consequent influence on IMS efficacy. More specifically, the goal of this research was to ascertain the impact of digital readiness and digital competences on IMS within Chinese organizations. The investigation focuses on assessing the extent to which such digital readiness initiatives as the use of digital tools and digital media awareness play a part in shaping IMS. Besides, the study aims at investigating the moderating influence of digital competences in this relationship. Another objective was to check the moderating role of organizational support in the relationship between digital readiness, digital competences, and IMS effectiveness in order to get specific suggestions for improvement of digital transformation processes.

This research also fills several significant research gaps found in literature on digital transformation and Information management systems. First, it focuses on the context of Chinese organizations, as worldwide investigations predominantly disregard the participants of the digital economy despite their growing importance. Second, Chinese organizations have remained understudied despite their influence within the digital economy; this study attempts to fill this gap. Third, this study reviews how the application of digital tools and the awareness of digital media influences digital readiness, which is a scantily researched field. Fourth, the study investigates digital competences as a mediator variable and analyzes the relationship between digital skills and its impact on IMS effectiveness, which is also a field neglected in this research domain. Lastly, this study examines organizational support as a moderator, thus adding to the list of variables that either facilitate or hamper the successful implementation of IMS, and adding novelty to the contemporary research.

2. Literature Review

2.1. Digital Tool Application and Effective IMS

Habib et al. (2021) argue that the use of digital tools augments the operation of Information Management Systems (IMS) most especially in the accuracy, access and functionality of the data. Technological advancements in form of the

internet, data storage and analytics, artificial intelligence among others make it possible for organizations to process, store and retrieve large amounts of information. Most of the digital tools in China have been influenced by government policies also due to the fact that digital transformation is ongoing at a fast pace across the country (Băzăvan, 2019). ElMaraghy *et al.* (2021) found out that leveraging the digital tools in an organization's IMS can help minimize the reliance on people, which may result in lower reliability due to technical errors and fatigue.

Ranjan and Foropon (2021) reiterate that real-time data is critical in making decisions, especially the data held in data repositories of organizations. Hence, it is an important that effective IMS should be in place to process the information for an improved understanding. The accessibility to an effective IMS in a firm is evident of its capability and consistent flow of timely and accurate information for operational success. In general, correct implementation of digital tools fosters both technical competence in establishing an effective IMS, along with organizational flexibility and dexterity, which makes businesses more capable of responding to emerging market trends and new technologies (Helmold, 2023). Last, but not the least, a positive usage of digital tools in organizations is a way of enhancing institutional transformation of information management processes for the achievement of organizational performance.

2.2. Digital Media Awareness and Effective IMS

Since digital media awareness increases the Information Management Systems' effectiveness, it facilitates the exchange of information such as communication and collaboration throughout organizations (Di Vaio *et al.*, 2021). Since business transaction in China extensively involves use of communication channels such as WeChat, Weibo, and Alibaba, high level of media awareness helps organizations to exploit the digital media as efficient tools of exchanging and managing information. It enables the management of the business to take advantage of the interactive nature of the digital media in the provision of timely updates on operations, engagements with customers, and other stakeholders, as well as provision of other information that should reach all consumers of it, in the right mode and at the right time (Nisar *et al.*, 2019). Increased awareness of digital media helps gather and assimilate the information originating from the customers as well as the trends in the industry which in turn helps in taking better decisions and business planning. Furthermore, Elia *et al.* (2020) find that organizations with proper understanding of digital media can therefore control and moderate the information flow in the digital space thus creating a better flow of information which is better sorted. It also enhances the outside relations which give better management of information, as well as enhances the inside relations of the business. Digital media is gradually attaining a deeper incorporation in the respective business activities (Di Vaio *et al.*, 2021). Therefore, its awareness escalates the efficiency of IMS, as it assists in maintaining competitiveness and up-to-datedness of organizations in the conditions of digital environment.

2.3. Digital Competences as Mediator

Digital competences work as a small mediator between digital media awareness and various facets of the performance of Information Management Systems (IMS). In China, the focus on developing the human capital's capabilities and understanding of digital technologies means and developing digital awareness is on priority. This ensures employees to sufficiently be capable in deploying relevant sophisticated digital technologies as cloud computing, big data processing, and artificial intelligence (Wang *et al.*, 2019). These competences improve the utilization of the results of the technological resources, improving the processing, storage and utilization of better information. According to Quttainah and Singh (2024), digitally competent and aware workforce can enhance the use of the features organizational IMS and produce the desired outcomes of the system, which includes enhanced accuracy of information management, and easy access and retrieval of information while maintaining a high operational efficiency. Digital competences also enable the employees to detect and address issues in the use of digital tools so that progressive enhancement and adaptation can be made towards the technological environments (Ciarli *et al.*, 2021). This capability is very useful in such industries as, the ability to ensure the provision of large amounts of accurate and timely information is highly important in volatile industries. Hence, the effective realization of digital competences within an organization overtakes the conventional approach of having the tools available within IMS to increase the overall performance of the organization (Helmold, 2023). In other words, through facilitating the optimal optimization of various digital tools available, digital competences help IMS to achieve its full potential of better decision-making, the creation of value through work performance and the sustenance of competitive advantage.

2.4. Organizational Support as Moderator

The level of organizational support which the school provides in relation to an effective IMS in light of the identified digital competences, is to act as a moderator between digital competences and IMS. Therefore, organizations offer resources, training, and support to create a proper context to help an employee to enhance and use their digital competencies (Cetindamar Kozanoglu; Abedin, 2021). These levels of support improve the handling of information systems and the efficiency in management of data, expressed in resultant decisions. Liebowitz (2019) believed that even with fully capable employees, there would be poor optimal utilization of talents which in this case translate to

poor information management if there is no adequate support from organizations. Digital competences, therefore, intervene between awareness of digital media and efficient IMS. **Boulianne and Theocharis** (2020) believe that little by little, people and organizations realize that digital media's possibilities should be exploited. Consequently, some special digital competencies have to be gained such as identification, assessment, and construction of information in the context of multiple platforms. Specifically, digital manpower with powerful competences enables the effective utilization of digital media to enhance the smooth running of the information systems (**Susanto et al.**, 2019). This means that data is well sorted, communication is boosted and decision-making in organizations is well enhanced. **Falloon** (2020) points out that depending on the awareness of digital media as well as information management, facility of applying digital competences practically is the core linkage present. Lack of these competences hinders one from realizing the advantages associated with the use of digital media in that they create several form of challenges and information loss. Thus, digital competences also serve as a link between awareness and application, as well as guarantee that IMS is focused on effective accuracy, access, and usability (**Morte-Nadal; Esteban-Navarro**, 2022). This moderating role emphasizes the need for information professionals to engage in the process of learning and skills updating throughout their professional careers because the pace of technological changes in the context of a digital society indicates the necessity of the constant development of digital competencies necessary for effective management of information.

Therefore, the extent of IS support proves to have significant impact on the effectiveness of information and, in turn, is not determined solely by the level of individual competences as stimulated by digital tools (**Antonietti et al.**, 2022). This support can include making sure that employees have the resources and motivation to regularly strengthen their digital savviness, thus, improving efficiency of information management systems. Based on the above discussions, the following five hypotheses can be derived:

- H1: Digital tool application positively influences effective information management system.
- H2: Digital media awareness positively influences effective information management system.
- H3: Digital competences work as a mediator between digital tool application and effective information management system.
- H4: Digital competences work as a mediator between digital media awareness and effective information management system.
- H5: Organizational support moderates the relation between digital competences and effective information management system.

3. Research Methodology

This paper investigates the impact of digital tool application and digital media awareness on the digital competences and effectiveness of IMS; and also examines the mediating role of digital competences among digital tool application, digital media awareness and effectiveness of IMS and also checks the moderating role of organizational support among digital competences and effectiveness of IMS in private sector organizations in China. The study used the survey questionnaires to collect the data from the selected employees. The questionnaire items were extracted from previous studies , such as digital tool application was measured with four questions (**Hong; Kim**, 2018), digital media awareness with three questions (**Hong; Kim**, 2018), digital competences with four questions (**Barragán-Sánchez et al.**, 2020), organizational support measured with six questions (**Islam; Ahmed**, 2018), and effective IMS with four questions (**Żywiołek; Schiavone**, 2021). These questions are summarized in Table 1.

Table 1: Measurements of Variables.

Variables	Items	Statements	Sources
Digital Tool Application (DTA)	DTA1	I can fix a computer virus or malware on my laptop or desktop computer.	(Hong; Kim, 2018)
	DTA2	I can upload and download media, including online photos, files, video files, and sound files.	
	DTA3	I can manage software or apps from a computer or mobile devices.	
	DTA4	I can set up and change security options in a web browser.	
Digital Media Awareness (DMA)	DMA1	I can recognize bias or rumors in digital media content.	(Hong; Kim, 2018)
	DMA2	I can critically interpret digital media content.	
	DMA3	I know how to protect intellectual property rights when I use digital media content.	
Digital Competences (DC)	DC1	I am able to help another person while using technologies.	(Barragán-Sánchez et al., 2020)
	DC2	I am able to inform others about the risks of technologies usage.	
	DC3	I am able to inform families about the risks of technologies usage.	
	DC4	I am able to design actions to prevent the risks of technologies usage.	
Organizational Support (OC)	OS1	My firm takes pride in my accomplishment.	(Islam; Ahmed, 2018)
	OS2	My company really cares about my well-being.	
	OS3	My company values contributions to its values.	
	OS4	My firm strongly considers my goals and values.	
	OS5	My organization shows concern for me.	
	OS6	My organization is willing to help me	
Effective IMS (EIMS)	EIMS1	IMS provides the access to information and knowledge.	(Żywiołek; Schiavone, 2021)
	EIMS2	IMS provides the usefulness of information and knowledge.	
	EIMS3	IMS maintains the level of knowledge.	
	EIMS4	IMS has the ability to use big data	

The sample of the study comprised employees of private sector organizations. The surveys were sent using mails and

personal visits. A total of 503 surveys were sent but only 290 surveys were returned, representing about 58 percent rate of response. SPSS-AMOS was used to check the associations among variables. This is an effective statistical tool that deals effectively with primary data and gives best outcomes even using large data sets (Hair Jr et al., 2020). The study used two predictors such as digital tool application (DTA) and digital media awareness (DMA), while study used one mediating variable such as digital competences (DC) and one moderating variable such as organizational support (OS) and one dependent variable such as effective IMS (EIMS). These variables are mentioned in Figure 1.

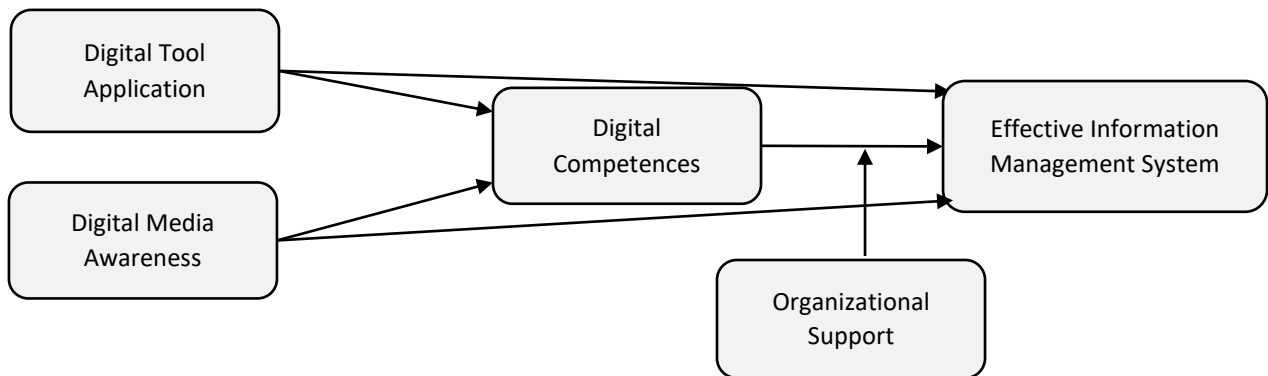


Figure 1: Research Model.

4. Results and Findings

Right at the outset, the convergent validity was measured to check the correlation among items. The results showed that average variance extracted (AVE) and loadings values were larger than 0.50, while composite reliability (CR) values were bigger than 0.70 and MSV and ASV values were less than AVE values. These results indicate a high correlation among items. These results are mentioned in Table 2.

Table 2: Convergent Validity.

Items		Loadings	CR	AVE	MSV	ASV
DMA1	<--- DMA	0.994	0.890	0.579	0.406	0.237
DMA2	<--- DMA	0.982				
DMA3	<--- DMA	0.709				
DTA1	<--- DTA	0.827	0.930	0.818	0.406	0.132
DTA2	<--- DTA	0.862				
DTA3	<--- DTA	0.832				
DTA4	<--- DTA	0.694				
DC1	<--- DC	0.995	0.881	0.650	0.602	0.312
DC2	<--- DC	0.630				
DC3	<--- DC	0.998				
DC4	<--- DC	0.992				
OS1	<--- OS	0.788	0.954	0.842	0.702	0.261
OS2	<--- OS	0.854				
OS3	<--- OS	0.792				
OS4	<--- OS	0.803				
OS5	<--- OS	0.766				
OS6	<--- OS	0.514				
EIMS1	<--- EIMS	0.782	0.840	0.572	0.261	0.170
EIMS2	<--- EIMS	0.579				
EIMS3	<--- EIMS	0.828				
EIMS4	<--- EIMS	0.809				

Next, discriminant validity was checked among variables by using the Fornell Larcker technique. The values showed a correlation with construct itself higher than the values showing the correlation with other constructs. This indicated a low correlation among variables. These results are mentioned in Table 3.

Table 3: Discriminant Validity.

	OS	DMA	DTA	DC	EIMS
OS	0.761				
DMA	0.637	0.905			
DTA	0.464	0.265	0.806		
DC	0.364	0.136	0.538	0.917	
EIMS	0.443	0.178	0.511	0.437	0.756

The study also examined the model good fitness, whose outcomes exposed that RMSEA value was less than 0.05 while TLI and CFI values were larger than 0.90. These values exposed that model was good fit. These values are given in Table 4.

Table 4: Model Good Fitness.

Selected Indices	Result	Acceptable level of fit
TLI	0.912	TLI > 0.90
CFI	0.917	CFI > 0.90
RMSEA	0.001	RMSEA < 0.05 good; 0.05 to 0.10 acceptable

Figure 2 exhibits the measurement assessment model which exposes the direct path showing a direct nexus among variables. This nexus indicates that digital tool application and digital media awareness have a positive nexus with effectiveness of IMS in private organization in China and thus H1 and H2 are accepted

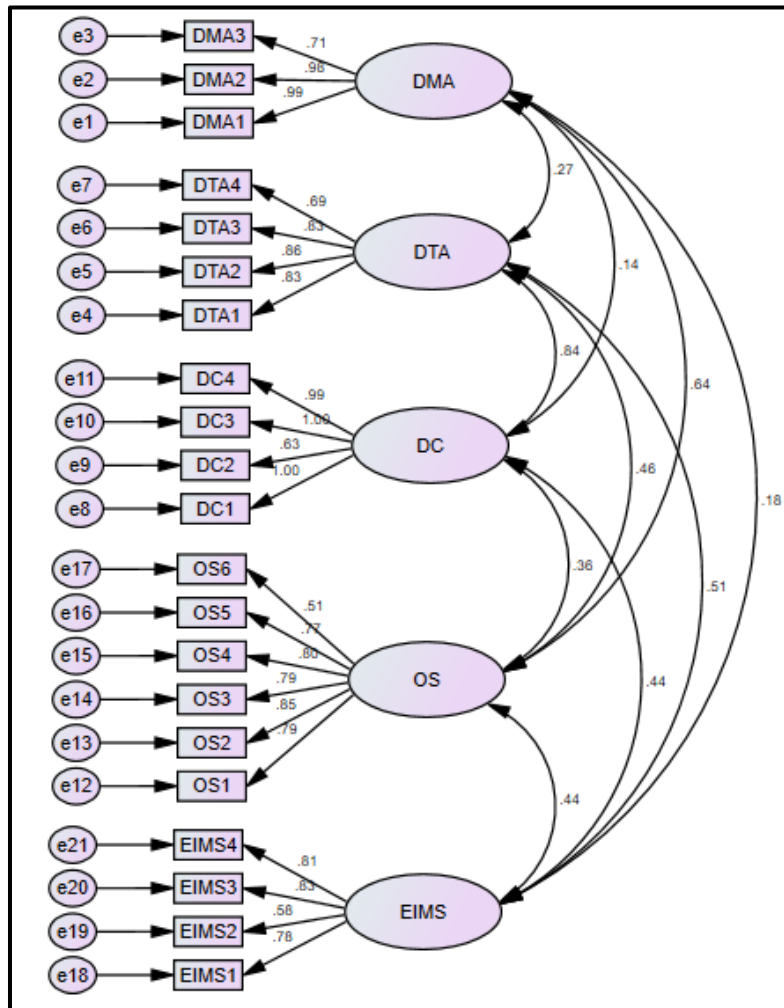


Figure 2: Measurement Assessment Model.

In addition, the results also indicate that organizational support significantly moderates among digital competences and effectiveness of IMS in private organization in China and thus H5 was accepted. These outcomes are given in Table 5.

Table 5: Direct Path Analysis.

	Relationships	Beta	S.E.	C.R.	P
Digital Competences	<--- Digital Tool Application	0.844	0.038	22.210	0.000
Digital Competences	<--- Digital Media Awareness	0.059	0.023	2.565	0.022
Effective IMS	<--- Digital Media Awareness	0.086	0.039	2.205	0.031
Effective IMS	<--- Digital Tool Application	0.180	0.082	2.195	0.016
Effective IMS	<--- DC x OS	0.694	0.007	99.142	0.000
Effective IMS	<--- Digital Competences	0.337	0.068	4.955	0.000
Effective IMS	<--- Organizational Support	0.113	0.043	2.627	0.005

Finally, the results also revealed that the digital competences significantly mediate among digital tool application, digital media awareness and effectiveness of IMS in private organization in China and thus H3 and H4 are accepted. These outcomes are given in Table 6 and Figure 3.

Table 6: Indirect Path Analysis.

	Organizational Support	DC x OS	Digital Tool Application	Digital Media Awareness	Digital Competences
Digital Competences	0.000	0.000	0.000	0.000	0.000
Effective IMS	0.000	0.000	0.312	0.019	0.000

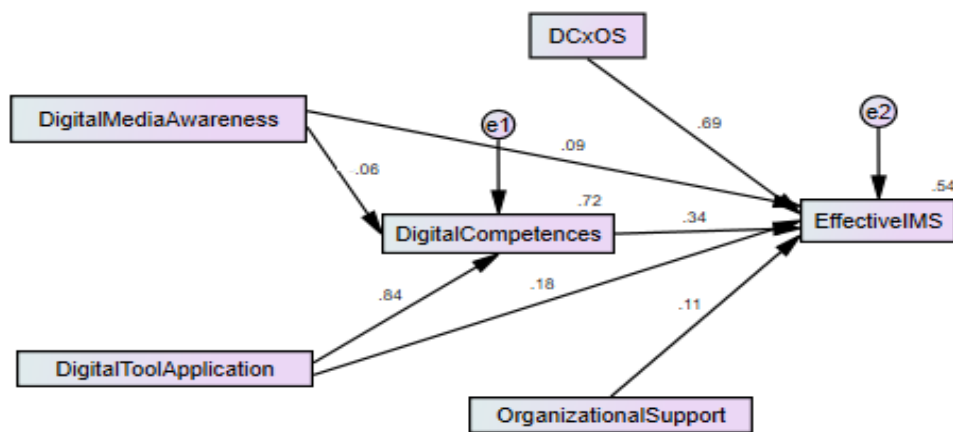


Figure 3: Structural Assessment Model.

5. Discussion

The study offers a more detailed analysis of how organizational digital readiness and employees' digital competences determine the usefulness of IMS in Chinese organizations, with organizational support as a moderator. The results reveal that digital readiness in terms of use of digital tools and awareness of digital media significantly affects effectiveness of IMS. It is consistent with the previous studies such as **Wen et al.** (2022) that in the specific case of IMS development, Chinese organizations have attained higher degrees of digital readiness poised for greater benefits on aspects that relate to data improvement, operational optimization, and decision-making. This is especially apparent in industries that have mild digital disruption, which is manufacturing industries being a backbone of the Chinese economy and key to the government's digitalization initiatives.

In conjunction with the apprehension and adoption of IMS by companies in the manufacturing industry, the present research also examines whether digital readiness plays a central role in improving IMS's effectiveness. The "Made in China 2025" blueprint for the modernization of manufacturing headed by AI rests on the imperative of digital renewal. Leaders of manufacturing organizations who meet the challenges of the digital age through the appropriate application and integration of ICT and digital media tools can supplement their organization's information management immensely (**Oesterreich et al.**, 2019). The study finds that due to the intricacy of manufacturing sector and the fact that the sector operates more often using digital technologies, it is possible to analyze the role of digital readiness and competencies affecting IMS. Thus, given the understanding of these dynamics, manufacturing firms can enhance organizational effectiveness and achieve competitive advantage in the global economy.

Digital tool application, according to **Wen et al.** (2022), is one of the components of the digital readiness that focuses on the utilization of the software, platforms, and technologies that are likely to ease processes and facilitate communication. In China the use of digital tools was stimulated by both the state and commercial initiatives. Today's business processes involve the use of technologies like cloud computing, big data analytics, and artificial intelligence (**Băzăvan**, 2019). The research reveals a positive correlation between the organizations' level of digital readiness and the applied digital tools, and, thereby, it predicts increased efficiency of IMS. This comes to illustrate the importance of digital tool application in improving the Information management capacity and the organizational performance.

The other critical areas of digital readiness include digital media awareness, which entails the understanding and appropriate utilization of social media platforms in marketing, communication and brand management domains. In the Chinese market where WeChat, Weibo and Alibaba are major players in the digital space, media awareness is crucial in the process of reaching out to the population (**Su; Flew**, 2021). The study reveals that there is a strong relationship between digital media awareness and how organizations can use them optimally towards increasing on their visibility, customers' contact, and on the brand. Consequently, there is a readiness towards the digital phase and its interaction with IMS' effectiveness. Since digital media is instrumental to the communication process, enhancing the management of information is necessary for the achievement of organizational objectives through effective information management evident when organizations opt to apply digital media optimally (**Aben et al.**, 2021).

Specifically, the analysis also reveals that digital competences moderate the relationship between the components of digital readiness, these being digital tool application and digital media awareness, and IMS effectiveness. Digital competences means the capability of working and interacting within digital environment as well as the abilities needed for proper use of technologies at one's hand (**Falloon**, 2020). In China such focus has been made towards digital education and training and this has led to the enhancement of a workforce rich in the ability to function in the digital form. **Cetindamar Kozanoglu and Abedin** (2021) concludes that the success in the use of digital tools and media platforms depend on the employees' ability in the use of technology, thereby implying that the employees who are fully conversant with technologies will greatly enhance the benefits of digital tools and media platforms for efficient handling of information.

The mediation effect exposed in this study calls for the need to improve on the funding that will be applied to the enhancement of IMS as well as the digital skills. Hence, studies like **Deja et al.** (2021) find that organizations that pay special heed to the development of digital competence can enhance the use of digital readiness to foster improved information management. An organizational support surfaces as a key moderating factor in this study. It means the level that an organization supports the change process, the type and amount of training that is offered to employees, and the environment that is facilitated for digital transformation (**Cetindamar Kozanoglu; Abedin**, 2021). There are two major ways organizational support may be defined in China as, through investment on digital support, providing consistent training programmes and cultivating the correct working culture that supports the use of digital support (**Zhao et al.**, 2021). To this effect, the study reveals that organizational support acts as a moderator which boosts the digital readiness and competences' influence on IMS effectiveness. **Wall et al.** (2024) find that well-developed support structures in the voluntary organizations would enhance the use of digital tools and competences, hence efficient information management. Organizations should ensure that they put in place favorable circumstances that enable them to embrace digital change and enhancing the IMS rollout.

6. Conclusion

The research conclude that the studies digital readiness and digital competences are vital for the success of IMS within organizations. By investing in digital infrastructure, the practical tools, and constant training, the efficiency of the companies and the quality of decision making can be improved. The implication of these findings for Chinese organizations particularly manufacturing firms are profound. The study also gives importance to SMEs indicating that the digital awareness has an advantage for complex organizations and using digital media in their marketing and communication. Being digitally competent at the workplace and having a strong supportive force can resolve the contradictions of digital transformation.

While the study provides valuable insights, it faced several limitations. The emphasis on the Chinese organizations and especially companies from the manufacturing industry may reduce the generalization of the conclusions in the other cultural and economic setting. This is because of the study's cross-sectional nature limited possibilities to capture causal relations between digital readiness, digital competences, and IMS effectiveness. The employment of self-assessment data means that potential response bias is relevant because participants may overestimate their digital competencies and organizational resources. This study also lacks the consideration of the dynamic environment in which digital transformation occurs, implying that technologies and market factors are constantly changing. The next steps of the research should include the study of these changes dynamically with the usage of longitudinal designs and extension of the research area to different kinds of industries and regions. Thus, following these limitations, the further works will offer more exhaustive picture of the factors that affects IMS effectiveness and the further consequences of digitalization.

The study would recommend that the findings of the study should act as guidelines to the policymakers and business leaders to formulate specific interventions that support the progression of digital competence and advance the country's digital transformation in order to maintain competitiveness in the global market. In a nutshell, the current research also offers a guide to transforming digital readiness into enhanced information management and organizational performance.

References

- Aben, Tom A E; van der Valk, Wendy; Roehrich, Jens K; Selviaridis, Kostas.** (2021). "Managing information asymmetry in public-private relationships undergoing a digital transformation: the role of contractual and relational governance". *International Journal of Operations & Production Management*, v. 41, n. 7, pp. 1145-1191. <https://doi.org/10.1108/IJOPM-09-2020-0675>
- Antonietti, Chiara; Cattaneo, Alberto; Amenduni, Francesca.** (2022). "Can teachers' digital competence influence technology acceptance in vocational education?". *Computers in Human Behavior*, v. 132, pp. 107-266. <https://doi.org/10.1016/j.chb.2022.107266>
- Aydiner, Arafat Salih; Tatoglu, Ekrem; Bayraktar, Erkan; Zaim, Selim.** (2019). "Information system capabilities and firm performance: Opening the black box through decision-making performance and business-process performance". *International Journal of Information Management*, v. 47, pp. 168-182. <https://doi.org/10.1016/j.ijinfomgt.2018.12.015>
- Barragán-Sánchez, Raquel; Corujo-Vélez, María-Carmen; Palacios-Rodríguez, Antonio; Román-Graván, Pedro.** (2020). "Teaching digital competence and eco-responsible use of technologies: Development and validation of a scale". *Sustainability*, v. 12, n. 18, pp. 7721. <https://doi.org/10.3390/su12187721>
- Băzăvan, Adrian.** (2019). "Chinese government's shifting role in the national innovation system". *Technological Forecasting and Social Change*, v. 148, pp. 119-738. <https://doi.org/10.1016/j.techfore.2019.119738>
- Berdik, David; Otoum, Safa; Schmidt, Nikolas; Porter, Dylan; Jararweh, Yaser.** (2021). "A survey on blockchain for information systems management and security". *Information Processing & Management*, v. 58, n. 1, pp. 102-397. <https://doi.org/10.1016/j.ipm.2020.102397>

- Boulianne, Shelley; Theocharis, Yannis.** (2020). "Young people, digital media, and engagement: A meta-analysis of research". *Social science computer review*, v. 38, n. 2, pp. 111-127. <https://doi.org/10.1177/0894439318814190>
- Cetindamar Kozanoglu, Dilek; Abedin, Babak.** (2021). "Understanding the role of employees in digital transformation: conceptualization of digital literacy of employees as a multi-dimensional organizational affordance". *Journal of Enterprise Information Management*, v. 34, n. 6, pp. 1649-1672. <https://doi.org/10.1108/JEIM-01-2020-0010>
- Ciarli, Tommaso; Kenney, Martin; Massini, Silvia; Piscitello, Lucia.** (2021). "Digital technologies, innovation, and skills: Emerging trajectories and challenges". *Research Policy*, v. 50, n. 7, pp. 104-289. <https://doi.org/10.1016/j.respol.2021.104289>
- Deja, Marek; Rak, Dorota; Bell, Brigitte.** (2021). "Digital transformation readiness: perspectives on academia and library outcomes in information literacy". *The Journal of Academic Librarianship*, v. 47, n. 5, pp. 102-403. <https://doi.org/10.1016/j.acalib.2021.102403>
- Di Vaio, Assunta; Palladino, Rosa; Pezzi, Alberto; Kalisz, David E.** (2021). "The role of digital innovation in knowledge management systems: A systematic literature review". *Journal of business research*, v. 123, pp. 220-231. <https://doi.org/10.1016/j.jbusres.2020.09.042>
- Dou, Qianqian; Gao, Xinwei.** (2022). "The double-edged role of the digital economy in firm green innovation: Micro-evidence from Chinese manufacturing industry". *Environmental Science and Pollution Research*, v. 29, n. 45, pp. 67856-67874. <https://doi.org/10.1007/s11356-022-20435-3>
- Elia, Gianluca; Margherita, Alessandro; Passiante, Giuseppina.** (2020). "Digital entrepreneurship ecosystem: How digital technologies and collective intelligence are reshaping the entrepreneurial process". *Technological forecasting and social change*, v. 150, pp. 119-791. <https://doi.org/10.1016/j.techfore.2019.119791>
- ElMaraghy, Hoda; Monostori, Laszlo; Schuh, Guenther; ElMaraghy, Waguih.** (2021). "Evolution and future of manufacturing systems". *CIRP Annals*, v. 70, n. 2, pp. 635-658. <https://doi.org/10.1016/j.cirp.2021.05.008>
- Falloon, Garry.** (2020). "From digital literacy to digital competence: the teacher digital competency (TDC) framework". *Educational technology research and development*, v. 68, n. 5, pp. 2449-2472. <https://doi.org/10.1007/s11423-020-09767-4>
- Habib, Muhammad Nauman; Jamal, Waseef; Khalil, Uzma; Khan, Zunnoorain.** (2021). "Transforming universities in interactive digital platform: case of city university of science and information technology". *Education and Information Technologies*, v. 26, pp. 517-541. <https://doi.org/10.1007/s10639-020-10237-w>
- Hair Jr, Joe F; Howard, Matt C; Nitzl, Christian.** (2020). "Assessing measurement model quality in PLS-SEM using confirmatory composite analysis". *Journal of Business Research*, v. 109, pp. 101-110. <https://doi.org/10.1016/j.jbusres.2019.11.069>
- Helmold, Marc.** (2023). *Virtual and Innovative Quality Management Across the Value Chain: Industry Insights, Case Studies and Best Practices*. Springer. <https://doi.org/10.1007/978-3-031-30089-9>
- Hong, Ah Jeong; Kim, Hye Jeong.** (2018). "College Students' Digital Readiness for Academic Engagement (DRAE) Scale: Scale Development and Validation". *The Asia-Pacific Education Researcher*, v. 27, pp. 303-312. <https://doi.org/10.1007/s40299-018-0387-0>
- Islam, Talat; Ahmed, Ishfaq.** (2018). "Mechanism between perceived organizational support and transfer of training: Explanatory role of self-efficacy and job satisfaction". *Management Research Review*, v. 41, n. 3, pp. 296-313. <https://doi.org/10.1108/MRR-02-2017-0052>
- Khin, Sabai; Ho, Theresa C F.** (2019). "Digital technology, digital capability and organizational performance: A mediating role of digital innovation". *International Journal of Innovation Science*, v. 11, n. 2, pp. 177-195. <https://doi.org/10.1108/IJIS-08-2018-0083>
- Liebowitz, Jay.** (2019). *Building Organizational Intelligence: A Knowledge Management Primer*. CRC Press. <https://doi.org/10.1201/9780367810689>
- Luo, Shiyue; Yimamu, Nafisa; Li, Yueran; Wu, Haitao; Irfan, Muhammad; Hao, Yu.** (2023). "Digitalization and sustainable development: How could digital economy development improve green innovation in China?". *Business Strategy and the Environment*, v. 32, n. 4, pp. 1847-1871. <https://doi.org/10.1002/bse.3223>
- Machado, Carla Gonçalves; Winroth, Mats; Almström, Peter; Ericson Öberg, Anna; Kurdve, Martin; AlMashalah, Sultan.** (2021). "Digital organisational readiness: experiences from manufacturing companies". *Journal of Manufacturing Technology Management*, v. 32, n. 9, pp. 167-182. <https://doi.org/10.1108/JMTM-05-2019-0188>
- Morte-Nadal, Tamara; Esteban-Navarro, Miguel Angel.** (2022). "Digital competences for improving digital inclusion in e-government services: A mixed-methods systematic review protocol". *International Journal of Qualitative Methods*, v. 21, pp. 160-235. <https://doi.org/10.1177/16094069211070935>

- Nisar, Tahir M; Prabhakar, Guru; Strakova, Lubica.** (2019). "Social media information benefits, knowledge management and smart organizations". *Journal of Business Research*, v. 94, pp. 264-272. <https://doi.org/10.1016/j.jbusres.2018.05.005>
- Oberländer, Maren; Beinicke, Andrea; Bipp, Tanja.** (2020). "Digital competencies: A review of the literature and applications in the workplace". *Computers & Education*, v. 146, pp. 103-752. <https://doi.org/10.1016/j.compedu.2019.103752>
- Oesterreich, Thuy Duong; Teuteberg, Frank; Bensberg, Frank; Buscher, Gandalf.** (2019). "The controlling profession in the digital age: Understanding the impact of digitisation on the controller's job roles, skills and competences". *International Journal of Accounting Information Systems*, v. 35, pp. 100432. <https://doi.org/10.1016/j.accinf.2019.100432>
- Prosper, Olivia; Gurski, Katharine; Teboh-Ewungkem, Miranda; Peace, Angela; Feng, Zhilan; Reynolds, Margaret; Manore, Carrie.** (2023). "Modeling Seasonal Malaria Transmission: A Methodology Connecting Regional Temperatures to Mosquito and Parasite Developmental Traits". *Letters in Biomathematics*, v. 10, n. 1, pp. 3-27. <https://doi.org/10.30707/LiB10.1.1682014077.793816>
- Quttainah, Majdi Anwar; Singh, Priya.** (2024). "Implementation of Digital Competency-building Strategy in Management Education". *Abhigyan*, v. 42, n. 1, pp. 9-22. <https://doi.org/10.1177/09702385241233072>
- Ranjan, Jayanthi; Foropon, Cyril.** (2021). "Big Data Analytics in Building the Competitive Intelligence of Organizations". *International Journal of Information Management*, v. 56, pp. 102-231. <https://doi.org/10.1016/j.ijinfomgt.2020.102231>
- Strehovec, Janez.** (2023). "The Upcycling and Reappropriation—On Art-Specific Circular Economy in the Age of Climate Change". *Cultura*, v. 20, n. 1, pp. 27-41. <https://doi.org/10.3726/CUL012023.0003>
- Su, Chunmeizi; Flew, Terry.** (2021). "The rise of Baidu, Alibaba and Tencent (BAT) and their role in China's Belt and Road Initiative (BRI)". *Global Media and Communication*, v. 17, n. 1, pp. 67-86. <https://doi.org/10.1177/1742766520982324>
- Susanto, Heru; Leu, Fang-Yie; Chen, Chin Kang; Mohiddin, Fadziwati.** (2019). *Managing Human Capital in Today's Globalization: A Management Information System Perspective*. Apple Academic Press. <https://doi.org/10.1201/9780429457890>
- Tarwneh, Eqab Dyab Yasin.** (2023). "The Christian Doctrine of the Trinity: Interpretations by Muslim Scholars". *European Journal for Philosophy of Religion*, v. 15, n. 1, pp. 69-89. <https://doi.org/10.24204/ejpr.2023.4112>
- Wall, Tony; Ngo, Nga; Nguyễn Hữu, Chúc; Lan, Phạm Ngọc; Knight, Sarah.** (2024). "Organisational Digital Capability: A Cross-Country Review of Guidance". *Higher Education, Skills and Work-Based Learning*, v. 14, n. 3, pp. 711-722. <https://doi.org/10.1108/HESWBL-06-2023-0157>
- Wang, Yanyu; Su, Xin; Wang, Huan; Zou, Renyu.** (2019). "Intellectual Capital and Technological Dynamic Capability: Evidence From Chinese Enterprises". *Journal of Intellectual Capital*, v. 20, n. 4, pp. 453-471. <https://doi.org/10.1108/JIC-06-2018-0096>
- Wen, Huwei; Zhong, Qiming; Lee, Chien-Chiang.** (2022). "Digitalization, Competition Strategy and Corporate Innovation: Evidence From Chinese Manufacturing Listed Companies". *International Review of Financial Analysis*, v. 82, pp. 102-166. <https://doi.org/10.1016/j.irfa.2022.102166>
- Yurinova, Evgenia A; Byrdina, Olga G; Dolzhenko, Svetlana G.** (2022). "Transprofessional competences of school teachers in the digital environment: education employers' perspective". *Education and Information Technologies*, v. 27, n. 2, pp. 1841-1863. <https://doi.org/10.1007/s10639-021-10687-w>
- Zhang, Yifan.** (2023). "Application of digital health concept in the design of interactive composition teaching platforms". *Journal of Commercial Biotechnology*, v. 28, n. 3, pp. 119-128. <https://doi.org/10.5912/jcb1576>
- Zhao, Chenhui; Cooke, Fang Lee; Wang, Zhen.** (2021). "Human resource management in China: what are the key issues confronting organizations and how can research help?". *Asia Pacific Journal of Human Resources*, v. 59, n. 3, pp. 357-373. <https://doi.org/10.1111/1744-7941.12295>
- Zhou, Lihong; Ying, Minglei; Wu, Jiang.** (2021). "Conceptualising China's approach to 'Internet Plus Government Services': A content analysis of government working plans". *Information Development*, v. 37, n. 4, pp. 633-646. <https://doi.org/10.1177/0266666920964898>
- Zhu, Xiaoming.** (2019). *Emerging Champions in the Digital Economy: New Theories and Cases on Evolving Technologies and Business Models*. Springer. <https://doi.org/10.1007/978-981-13-2628-8>
- Żywiołek, Justyna; Schiavone, Francesco.** (2021). "The Value of data sets in Information and Knowledge Management as a Threat to Information Security." In: *22nd European Conference on Knowledge Management, ECKM 2021*. pp. 882-891. Academic Conferences and Publishing International Limited. <https://doi.org/10.34190/EKM.21.185>