Examining The Impact of Information Orientation, Digital Adoption, and Knowledge digitalization In Improving Information Management Practices Among Chinese Firms

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Abstract

Information orientation in organizations determine success under changing dynamics. It is achieved through several organizational-level dimensions like Information sharing, Technology integration, Data Driven Decision Making, and Network resource acquisition. This research focuses on the role of information orientation (along with its all dimensions), digital adoption, and knowledge digitalization (three independent variables) in enhancing information management practices (dependent variable) through the moderating role of knowledge management (moderating variable). The sample study was collected from different information technology and software-based companies providing valuable services in the local and global markets. A valid sample of 477 questionnaires was used for the analysis section, which covered several statistical methods and procedures. The relationships were examined using the PLS-SEM technique. The study results show that information orientation, network resource acquisition, and digitalization of knowledge are positively connected with the information management practices. The additional results cover the moderating effect of knowledge management among the selected companies, for which the results reflect that it has a significant moderate effect on the relationship between network resource acquisition and information management, digital adoption and information management, and informational orientation and information management. The study claims that by focusing on informational orientation and its dimensions, IT and software companies can boost their informational management practices over a long period.

Keywords

Information Orientation, Knowledge Management, Digitalization of Knowledge, Information Management, PLS-SEM, China.

1. Introduction

It is inferred that in modern, complex business environment, organizations and firms at global context are facing an increasing demand for high-quality information to make informed strategic decisions. Such strategic decisions have their longer impact on the success and failure of organizations. For this purpose, the idea of Informational Orientation (INO) has emerged as a critical concept that covers the capacity of an organization to gather, process, and utilize information in an effective manner to drive performance and innovation. According to **Marchand *et al.*** (2000), the notion of INO is not merely about access to information but extends to the culture, behavior, and technology of the organizations which is further related to the information management. The given concept sheds the light on how well an organization understands and leverages information as a strategic resource, therefore, becoming pivotal for competitive advantage in the changing business environment.

The observation from the available studies provides the insights that among others, the information orientation integrates the dimensions like information technology and management practices, information sharing, technology integration, and information behaviors and values. Information technology practices involve the infrastructure and systems that support data gathering, analysis, and dissemination (**Marchand *et al.***, 2000). Effective information management practices refer to systematic approaches in handling and utilizing data to support organizational goals. Meanwhile, information behaviors and values highlight the organizational culture around information sharing, openness, and ethical considerations in data handling. Together, these components contribute to an organization's overall readiness to react and adapt based on real-time insights and trends, fostering a proactive and responsive decision-making environment (**Mohanty *et al.***, 2024).

Over the past and recent studies under organizational resources, the foundation provided by the resource-based view (RBV) theory is very productive. This theory was initially presented by **Barney** (1991), who suggested that an organization comprises different skills and resources. A company's success is the form of profits and sales, mainly connected with access to valuable, rare, hard-to-copy, and well-organized resources (**Barney**, 1991; **Kraaijenbrink *et al.***, 2010). The given idea of the resources is well linked with the earlier study of **Penrose** (2009), which explained that a company's growth chiefly relies on how it uses its different resources. Additionally, the classification of the resources determines two major divisions: tangible and intangible. Tangible resources include cash, equipment, and buildings (**Marshall; Standifird**, 2005). Intangible resources, on the other hand, include components like the skills of the management and employees, technology, customer trust, and organizational culture (**Itami; Roehl**, 1991). They also cover the capabilities, processes, information, and knowledge the organization controls, which further reflect different strategies to improve its flexibility and effectiveness (**Theeke; Lee**, 2017). Therefore, it is quite essential to understand that how these characteristics work together is crucial for organizations and individuals, especially those aiming to boost innovation and stay competitive in today's fast-changing business world (**Alshanty; Emeagwali**, 2019). The concept of the resource-based view applies to factors like knowledge and knowledge management, information management, and knowledge digitalization. Within the context of the resource-based view theory, the concept of knowledge has been recognized as one of the most influential factors that affect the organization's competitiveness. In addition, traditional ways of sharing, storing, and managing knowledge use a single method. This single method has made it harder for business firms to gather information and use their different knowledge-based resources quickly. However, the digital revolution and advancements, which are mainly driven by technologies like artificial intelligence, big data, blockchain, and cloud computing, it has now become very easy for firms to create an era of knowledge that is more dynamic, accessible, and continually updated as per the contemporary requirements. This change allows business organizations to move beyond traditional limits while managing their digital knowledge.

This research investigates the influence of three independent variables of this study viz., information orientation (along with all its dimensions of Information sharing, Technology integration, Data Driven Decision Making, and Network resource acquisition), digital adoption and knowledge digitalization in enhancing information management practices (dependent variable) through the moderating role of knowledge management (moderating variable) among the Chinese firms involved in technology.

There is a dearth of research studies with focus on information orientation and information management practices. However, a few studies have tested the role of knowledge management practices as a major predictor of a firm's performance while adding a traditional method of data analysis. Therefore, the available literature is completely missing in carrying out the impact of knowledge management, digital adoption, and network resource acquisition in one framework towards information management practices. This gap in literature is linked with knowledge management to be investigated as a moderator. This gap significantly exists in the body of literature in the field of stated independent variables and their impact on information management practices.

2. Literature Review

This section summarizes past and present studies covering the given variables. Table 1 summarizes the variables, research methods, geographical area as covered, significant results, implications to the industry, and source of the authors with publication years.

Table 1: Overview of the Literature.

No	Study Variables	Study Methods	Study Results	Study Source
1	Intrinsic vs. Extrinsic Orientation, Motivational Orientation (MTO), Cognitive-Informational Orientation (CIO), Advantaged vs. Disadvantaged Schools	Confirmatory Factor Analysis, Analysis of Variance	Disadvantaged pupils had higher MTO than advantaged pupils; MTO scores varied by grade and school type, CIO scores differed by grade and school type.	(**Tzuriel**, 1989)
2	Information Processing, Networked Organizations, Structure vs. Strategy, Human Resources	Conceptual Analysis of Legacy and Future Organizational Structures	Organizations with networked structures will link teams as needed, emphasizing knowledge and performance over hierarchy; challenges include developing flexible information architecture.	(**Jarvenpaa; Ives**, 1994)
3	Information Behavior, Knowledge Worker Performance, Motivation, Information Technology Capability	Case Study, Online Survey with Quantitative Analysis using Microsoft Excel	High motivation to use information, but capability to organize and maintain valuable information is lower than other aspects; analytic style seen as advantageous.	(**Hwang**, 2011)

No	Study Variables	Study Methods	Study Results	Study Source
4	Knowledge Management (KM), Information Management (IM), Organizational Approaches, KM Methodologies	Empirical Study with Conceptual Framework and Typology of KM Practices	KM practices vary significantly between organizations, with different methodologies indicating potential distinctions between KM and IM.	(**Bouthillier; Shearer**, 2002)
5	SMEs, Digital Information and Technology Adoption, Drivers and Outcomes, Adoption Theories	Literature Review	Digital technology for marketing enhances SME competitiveness; adoption theories are diffusion of innovation, technology-organization-environment framework, and institutional theory.	(**Molinillo; Japutra**, 2017)
6	Humanitarian Supply Chain (HSC), Information and Digital Technology (IDT) Adoption, Barriers to Adoption	Literature Review, Expert Discussions, Fuzzy Analytic Hierarchy Process (F-AHP)	Identified five main barriers (strategic, organizational, technological, financial, human) and 25 sub-barriers; strategic barriers ranked highest in importance for IDT adoption in HSCs.	(**Kabra *et al.***, 2023)
7	Farm-level Management Information Systems (MISs), Digital Technology Adoption, Drivers and Barriers	Comprehensive Literature Review (1998-2019), Automated and Manual Search	Diffusion of innovations is the primary theoretical framework; traits of farms and technological features play key roles in adoption.	(**Giua *et al.***, 2021)
8	Big Data Analysis, Digital Marketing, Corporate Environment, Consumer Behavior	Systematic Literature Review, Bibliometric Analysis using VOS viewer	Big data analysis and AI will increasingly define marketing strategies with a focus on consumer behavior insights.	(**Figueiredo *et al.***, 2021)
9	Farm Management Information Systems (FMIS), Agricultural Productivity, Digital Applications, Adoption Behavior	Survey of 285 German Farmers, Analysis of FMIS Adoption Factors	FMIS adoption is primarily influenced by system suitability, economic efficiency, and compatibility; low user adoption suggests barriers remain.	(**Schulze Schwering; Lemken**, 2020)
10	Core IRM competencies, training, and implementation	Examination of IRM tasks at University of Arizona Libraries, development of core competencies, implementation of training sessions	Plan for training modules to develop core competencies for IRM team members	(**Martin; Zaghloul**, 2011)
11	Resource acquisition, sharing, and usage in IIA research	Online survey with 89 IIA researchers, data collection on resource behaviors and challenges	Freely available resources play a crucial role in IIA research; challenges identified include cost, documentation, and usability	(**Chen; Li**, 2010)
12	DSS development for NRM, POSEIDON system application	Design and application of POSEIDON DSS generator for NRM problem formulation, knowledge acquisition from free text	POSEIDON assists resource managers in identifying issues for NRM decision-making through intelligent analysis of NRM documents	(**Gunn *et al.***, 1999)

3. Methods and Material

The study has several constructs including informational orientation, information management, knowledge digitalization, network resource acquisition, digital adoption, and knowledge management. These variables are well shown in Table 2 covering the nature in the study, dimensions/items being used for their measurements and finally, the abbreviations being applied in the analysis portion. After the development of the questionnaire, this study chiefly focused on information technology and software companies as working China. Initially, a sample of 500 questionnaires were distributed among the top-executives and managers linked with these firms. A time span of 5 weeks was used for the purpose of data collection. A detailed investigation shows that out of total distributed sample, 23 questionnaires were found missing with the valid responses, hence dropped from the sample. A valid response sample of 477 questionnaires were finally used for the analysis sections.

Table 2: Study Variables.

Variable	Nature	Sub Dimensions and Items	Abbreviations
Informational Orientation	IV	• Information sharing- 3 items • Technology integration- 3 items • Data Driven Decision Making- 4 items • Network resource acquisition- items	INS, TNO, DDD, NRA
Digital adoption	IV	4 items	DIA
Knowledge Digitalization (**Han *et al.***, 2024)	IV	6-7 items	KND
Information Management practices	DV	4 items	IMG
Knowledge Management	Moderator	4 items	KWM

Structural equation modeling is a robust technique that provides the best and most reliable results while checking the relationships between the latent constructs. It helps combine the elements of factors analysis and simple regression analysis when analyzing the structural nexus between the variables. The smart PLS-SEM technique is used in this study, which aims to explain the maximum variation in the main dependent variable along with better predictive capabilities. Moreover, the PLS-SEM is also beneficial when applying moderate analysis to the direct relationships between the model variables. However, before applying for the PLS-SEM, this research followed statistical methods for data analysis.

4. Results and Discussion

The respondents comprised executives and top managers from technology companies in China. As per the established years of the firm (Table 3), 26% and 21.7% of respondents said their companies were established less than 3 years and between 3-5 years. Moreover, 17.3% of respondents claimed that their firms were established between 5-10 years. Moreover, only 10.9% said that the established duration of their firms was greater than 10 years. The respondents were also asked to categorize the number of employees in their relative firms. A total of 35.1% of respondents work in companies with ≤ 100 employees, while 19.1% worked in firms with 101–300 employees. Furthermore, 8.9% of respondents work in organizations with 301–500 employees, and 13.7% are employed in companies with 501–1000 employees, and 23.2% are in firms with ≥ 1001 employees. The total number of respondents were 461.

Another distribution of the respondents was based on their views related to family enterprises or not where they are working. According to the frequency distribution, 32.5% of respondents work in family enterprises, while 67.5% are employed in non-family businesses. The total number of respondents was 461. The respondents were also distributed in terms of the network membership of their relative organizations. Based on the frequency distribution, 39.1% of respondents were members of a formal local network, while 60.9% did not belong to such a network. The respondents were also categorized regarding their involvement in industrial cluster activities. According to the frequency distribution, 28.2% of respondents were active in an industrial cluster, while 71.8% were not involved in such activities. The total number of respondents was 461. In addition, gender-wise distribution revealed that 68.7% of respondents were male while 31.3% were female. In the age category, it was found that 29% of respondents were ≤ 25 years old, while 12.1% were 26–35 years old. Additionally, 13.2% of respondents were within the 36–45-year-old category, and 45.5% were 46 years and above. The total number of respondents was 461. In the education category, 36.2% of respondents had completed their undergraduate degree, while 23.4% held a master's degree. Additionally, 13.5% of respondents had education above a master's level, and 26.9% opted for "Other" education category. The total number of respondents was 461. It is found that there is a good variation in terms of gender, age, qualification, working experience, enterprise background, size, and other dimensions, respectively. Table 3 presents frequency and percentage of the demographic characteristics.

Table 3: Frequencies and % of the Respondents Profile.

Category	Frequency	Percentage
Firm Established for Years		
< 3 years	120	26
3–5 years	100	21.7
5–10 years	80	17.3
> 10 years	50	10.9
Total	461	100
Number of Employees		
≤ 100	162	35.1
101–300	88	19.1
301–500	41	8.9
501–1000	63	13.7
≥ 1001	107	23.2
Total	461	100
Family Enterprise		
Yes	150	32.5
No	311	67.5
Total	461	100
Network Membership		
Yes	180	39.1
No	281	60.9
Total	461	100
Industrial Cluster Activity		
Yes	130	28.2
No	331	71.8
Total	461	100
Gender		
Male	317	68.7
Female	144	31.3
Total	461	100
Age Group		
Age ≤ 25 years old	134	29
26–35 years old	56	12.1
36–45 years old	61	13.2
46 years and above	210	45.5
Total	461	100
Education Level		
Graduated	167	36.2
Master	108	23.4
Above Master	62	13.5
Other	124	26.9
Total	461	100

The study developed a measurement model with the help of items from the past literature. Figure 1 shows the developed measurement model in Smart PLS, where the circular shapes are used to demonstrate the latent variables and items by using rectangles (or boxes).

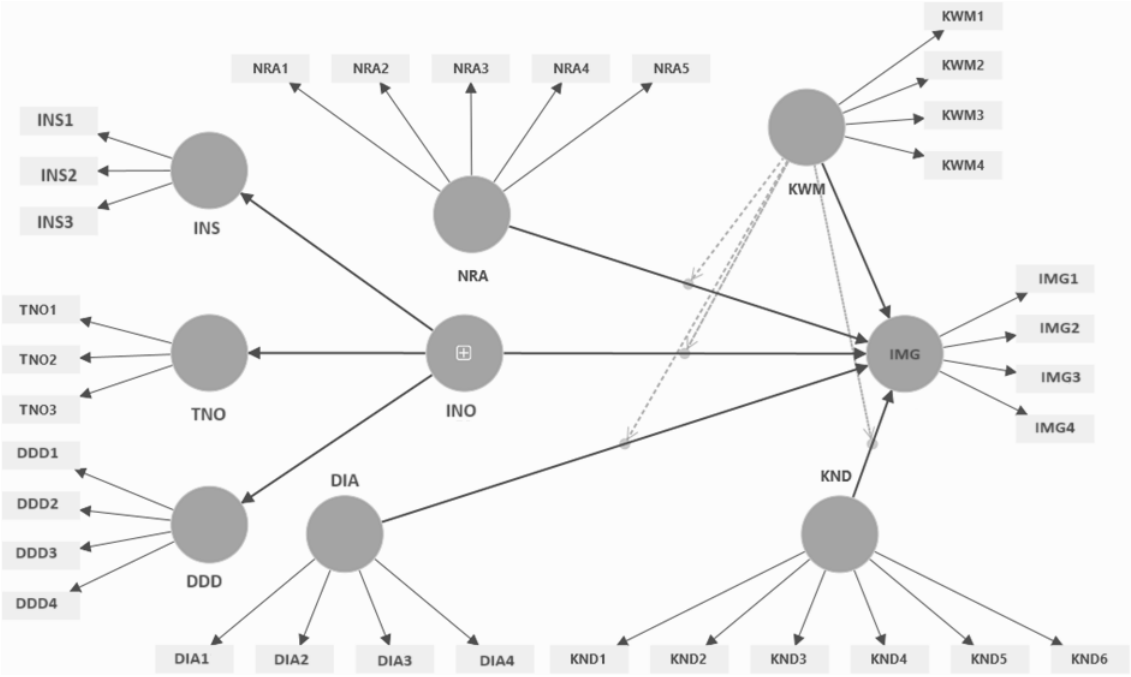

Figure 1: Measurement Model Layout Covering all the Latent Variables.
Note: INO- Information orientation, INS- Information sharing, TNO- Technology integration, DDD- Data driven decision making, KND- Knowledge digitalization, NRA- Network resource acquisition KWM; Knowledge management, IMG; Information management, DIA; Digital adoption.

The loadings of the selected items are presented in Table 4. The path loadings for the IMG items IMG1, IMG2, IMG3, and IMG4 were 0.787, 0.851, 0.915, and 0.862. The path loadings for the DIA items entitled DIA1, DIA2, DIA3, and DIA4 were 0.82, 0.643, 0.888, and 0.89. The path loadings for the TNO items entitled TNO1, TNO2, and TNO3 were 0.819, 0.91, and 0.856. The path loadings for the KND items entitled KND1, KND2, KND3, KND4, KND5, and KND6 were 0.839, 0.846, 0.648, 0.805, 0.808, and 0.699. The path loadings for the KWM items entitled KWM1, KWM2, KWM3, and KWM4 were 0.909, 0.871, 0.716, and 0.834. The path loadings for the NRA items entitled NRA1, NRA2, NRA3, NRA4, and NRA5 were 0.831, 0.854, 0.803, 0.862, and 0.782. Table 4 presents these overloading.

Table 4: Outer Loadings.

List	Outer loadings	List	Outer loadings
IMG1 <- IMG	0.787	KWM2 <- KWM	0.871
IMG2 <- IMG	0.851	KWM3 <- KWM	0.716
IMG3 <- IMG	0.915	KWM4 <- KWM	0.834
IMG4 <- IMG	0.862	NRA1 <- NRA	0.831
DIA1 <- DIA	0.82	NRA2 <- NRA	0.854
DIA2 <- DIA	0.643	NRA3 <- NRA	0.803
DIA3 <- DIA	0.888	NRA4 <- NRA	0.862
DIA4 <- DIA	0.89	NRA5 <- NRA	0.782
INO1 <- INO	0.832	DDD1 <- DDD	0.889
TNO1 <- TNO	0.819	DDD1 <- INO	0.763
TNO2 <- INO	0.734	DDD2 <- INO	0.75
TNO2 <- TNO	0.91	DDD2 <- DDD	0.81
TNO3 <- INO	0.702	DDD3 <- INO	0.809
TNO3 <- TNO	0.856	DDD3 <- DDD	0.863
KND1 <- KND	0.839	DDD4 <- DDD	0.892
KND2 <- KND	0.846	DDD4 <- INO	0.899
KND3 <- KND	0.648	INS1 <- INS	0.857
KND4 <- KND	0.805	INS1 <- INO	0.77
KND5 <- KND	0.808	INS2 <- INS	0.893
KND6 <- KND	0.699	INS2 <- INO	0.845
KWM1 <- KWM	0.909	INS3 <- INS	0.648

Note: INO- Information orientation, INS- Information sharing, TNO- Technology integration, DDD- Data driven decision making, KND- Knowledge digitalization, NRA- Network resource acquisition KWM; Knowledge management, IMG; Information management, DIA; Digital adoption.

The factor loadings of the above-explained variables further determine the consistency and reliability. The results in Table 5 cover the reliability and internal consistency of the model, using different as shown in the first column, followed by the variables INO, IMG, DIA, TNO, KND, KWM, NRA, DDD, and INS. The Cronbach's alpha for these variables is 0.917, 0.876, 0.838, 0.827, 0.868, 0.853, 0.884, 0.887, and 0.732, whereas the Composite reliability (rho_a) is 0.93, 0.882,

0.896, 0.829, 0.868, 0.853, 0.891, 0.892, and 0.795. Additionally, the Composite reliability in terms of rho_c: 0.932, 0.916, 0.887, 0.897, 0.901, 0.902, 0.915, 0.922, and 0.846. All of these measures show the reliability in the model (**Hair *et al.***, 2021; **Parsaoran; Hartono**, 2023; **Pokhrel; Anup**, 2024). The concurrent validity measure, Average variance extracted (AVE) for these variables, shows the values of 0.585, 0.731, 0.666, 0.743, 0.605, 0.698, 0.684, 0.747, and 0.651. These values are above 0.50. Therefore, convergent validity is present in this combination of variables, where IMG is the main outcome variable.

Table 5: Testing the Consistency and Reliability.

Criteria	INO	IMG	DIA	TNO	KND	KWM	NRA	DDD	INS
Cronbach's alpha	0.917	0.876	0.838	0.827	0.868	0.853	0.884	0.887	0.732
Composite reliability (rho_a)	0.93	0.882	0.896	0.829	0.868	0.853	0.891	0.892	0.795
Composite reliability (rho_c)	0.932	0.916	0.887	0.897	0.901	0.902	0.915	0.922	0.846
Average variance extracted (AVE)	0.585	0.731	0.666	0.743	0.605	0.698	0.684	0.747	0.651
Note: INO- Information orientation, INS- Information sharing, TNO- Technology integration, DDD- Data driven decision making, KND- Knowledge digitalization, NRA- Network resource acquisition KWM; Knowledge management, IMG; Information management, DIA; Digital adoption.									

The discriminant validity measured is named the HTMT ratio and is covered by using the results in Table 6. It shows that the HTMT ratio between the variables. It shows that the correlation is less than 0.90 between all of the given variables. For example, the HTMT ratio between INO and other variables is 0.715, 0.179, 0.301, 0.502, 0.766, and 0.581. The correlation between IMG and other variables was 0.73, 0.564, 0.802, 0.414, and 0.015. The correlation between TNO and other variables in the same model was also 0.492, 0.816 and 0.445. The other results show that correlation of KND with the KWM and NRA was 0.599, and 0.794. Besides, KWM has a correlation as 0.879 with the NRA. All of these values are less than 0.90, confirming that this model has achieved discriminant validity.

Table 6: HTMT Ratio.

Items	INO	IMG	DIA	TNO	KND	KWM	NRA
INO	N/A						
IMG	0.715	N/A					
DIA	0.179	0.73	N/A				
TNO	0.301	0.564	0.884	N/A			
KND	0.502	0.802	0.604	0.492	N/A		
KWM	0.766	0.414	0.468	0.816	0.599	N/A	
NRA	0.581	0.015	0.68	0.445	0.794	0.879	N/A
Note: INO- Information orientation, INS- Information sharing, TNO- Technology integration, DDD- Data driven decision making, KND- Knowledge digitalization, NRA- Network resource acquisition KWM; Knowledge management, IMG; Information management, DIA; Digital adoption.							

The items selected for the model were presented in Table 7 using the variance inflation factor (VIF). The results confirm that for the items of the given variables, the score of VIF is less than 5; therefore, the results favor the assumption that the model is multicollinearity-free. The literature also justifies the VIF as the most authentic method of checking the collinearity of the latent variables (**Dormann *et al.***, 2013; **Kyriazos; Poga**, 2023; **Feng; Chen**, 2024; **Streukens; Leroi-Werelds**, 2023; **Derraz *et al.***, 2023).

Table 7: VIF of the Selected Items.

Items	VIF	Items	VIF
IMG1	2.697	KWM3	1.501
IMG2	2.594	KWM4	3.058
IMG3	4.921	NRA1	2.988
IMG4	4.364	NRA2	2.629
DIA1	2.949	NRA3	2.062
DIA2	2.213	NRA4	2.698
DIA3	2.703	NRA5	2.132
DIA4	2.887	DDD1	3.423
TNO1	4.652	DDD1	3.149
TNO1	1.535	DDD2	2.36
TNO2	4.31	DDD2	3.807
TNO2	3.067	DDD3	2.851
TNO3	3.879	DDD3	3.569
TNO3	2.571	DDD4	2.219
KND1	4.254	DDD4	2.989
KND2	3.299	INS1	1.676
KND3	1.455	INS1	3.518
KND4	3.947	INS2	1.798
KND5	3.322	INS2	1.874
KND6	1.776	INS3	1.547
KWM1	3.072	INS3	1.258
KWM2	3.585		
Note: INO- Information orientation, INS- Information sharing, TNO- Technology integration, DDD- Data driven decision making, KND- Knowledge digitalization, NRA- Network resource acquisition KWM; Knowledge management, IMG; Information management, DIA; Digital adoption.			

The structural mode results by the end of the analysis aimed to help check the direct and moderating relationships between the stated variables. The results for the direct analysis are given through several paths as shown in the first column of Table 8. The first path examines the relationship between INO and IMG. The coefficient for the first path is 0.719, standard deviation as 0.227, the t-statistics of 3.171 and p-value of 0.002. This p-value is significant at 1% and shows that the INO's impact on the IMG in China has been positive and significant, provided that all other factors remain constant. This means that a one percent change in the INO means a change of 0.719% in the IMG for the firms where the data was collected using the questionnaire.

Table 8: Direct Paths.

Direct Analysis	Coefficients	STDEV	T statistics	P values
INO -> IMG	0.719	0.227	3.171	0.002
DIA -> IMG	0.176	0.107	1.638	0.101
KND -> IMG	0.090	0.019	4.736	0.000
KWM -> IMG	0.243	0.072	3.375	0.000
NRA -> IMG	0.534	0.131	4.066	0.000
Note: INO- Information orientation, INS- Information sharing, TNO- Technology integration, DDD- Data driven decision making, KND- Knowledge digitalization, NRA- Network resource acquisition KWM; Knowledge management, IMG; Information management, DIA; Digital adoption.				

The existing literature also provides similar results; however, with different regional and firm-level settings. For example, **Zeng** (2024) collects the data from 491 Chinese firms during the mid of 2022. The study findings show that organizational orientation positively affects the firm's outlook in the tourism hospitality industry sample. Information orientation or more precisely, the INO makes information management better by bringing together people, processes, and technology to handle data in more effective and efficient manner. It focuses on keeping data accurate, easy to access, and relevant, so the right people get the right information when they need it. By building a culture that values using information and making decisions based on insights, organizations can make the most of their data, simplify processes, and improve teamwork. This approach also promotes and support the training and tool development, helping in team management while sharing and usage the information in ways that benefit the whole organization. Therefore, the positive connection between INO and IMG is quite logical.

The second direct path as seen in Table 8, has a linkage between information management and firm performance. However, the direct path coefficient between DIA and IMG shows the value of 0.176 with the standard deviation as 0.107. Because of such higher value of the standard deviation, the t-statistics are not much good to claim for the significant results between the digital adoption and information management practices for the selected sample in this research. Therefore, the impact of the DIA on IMG has been concluded as positively insignificant, for which no debate is required. One reason for such insignificant result might be the inefficient role of the digital adoption or very minor role towards information management practices, which is not captured by the results. However, there is a possibility that increasing the sample size and expanding the investigation to other firms besides those that are information technology-based might generate some good estimations in the future. Therefore, the future research studies also need to focus on such insignificant results between digital adoption and information management practices.

The third path as shown in Table 8 focuses on the relationship between knowledge digitalization and IMG. Several past researchers have supported this argument that knowledge digitalization is a good indicator for achieving better information management practices different firms worldwide. For example, **Revere *et al.*** (2007) have conducted the literature review to inform design of an interactive digital knowledge management. The study mainly aims to connect the digital knowledge management regarding the collection of relevant information in terms of public health documents, learning, and data management. Another study as conducted by **Convery** (2010) have focused on the relationship between information management, information management, and record management under the shadow of digital age. Digital knowledge helps to improve the information management by making data easier to collect, organize, and access. It enables professionals to build essential skills for managing digital resources effectively, enhancing the accessibility and usability of information. In various fields of life, industries and organizations, the idea of digital knowledge helps people find and share resources more easily, even when challenges like documentation or licensing arise. Overall, the usage of digital tools aims to allow the information management practices to adapt quickly to changing environments, fostering better decision-making and collaboration across disciplines.

The fourth path in Table 8 shows the connection between knowledge management and IMG. The path coefficient is 0.243 and the deviation from this average coefficient is recorded as 0.072. The stated path shows that knowledge management is directly connected with the information management practices, which is a productive outcome for Chinese firms. The given p-value of 0.000 is significant at 1%, showing a confidence level of 99% to infer that keeping other factors as constant, an increase in the knowledge management practices means an increase in the IMG of similar firms. The literature also supports these relationships where the increase in knowledge management means an increase in the information management practices. The current literature also explores the relationship between information management and knowledge management while taking both the theoretical and empirical viewpoint. For example, **González-Valiente *et al.*** (2021) claim that both the information and knowledge management have been overlapped within the domain of information sciences. KWM improves information management practices by capturing and organizing valuable insights

within an organization, along with making the information more accessible and useful for different stakeholders as linked with the organization. It creates clear processes to identify key information, while converting it into practical knowledge, and share it with the right people at the right time. This mechanism aims to further reduce the duplication, ensures consistency, and allows teams to use existing knowledge in an effective manner. Therefore, by supporting the collaboration and continuous learning, KWM help to promote the better decision-making, more efficient workflows, and a culture of innovation, which further leads to a stronger information management system.

The study also examined the positive relationship between NRA and IMG as shown in Table 8, where the coefficients are 0.534 and t-value is highly significant at 1%, indicating that more resource acquisition means better information management practices by the selected firms of China. Figures 2 to Figure 5 also show the coefficients, standard deviation, t and p-values graphs of these direct paths.

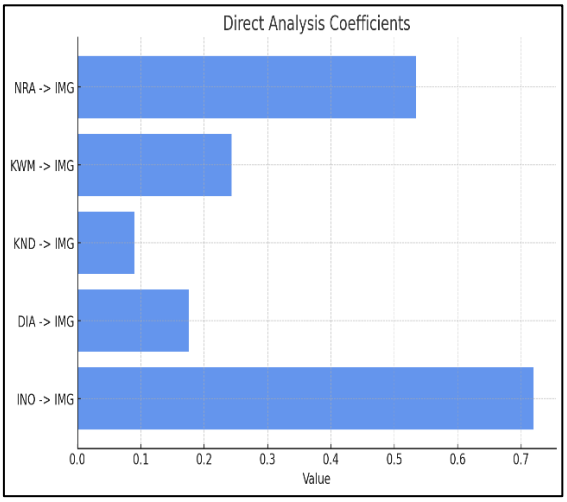

Figure 2: Path Coefficients.

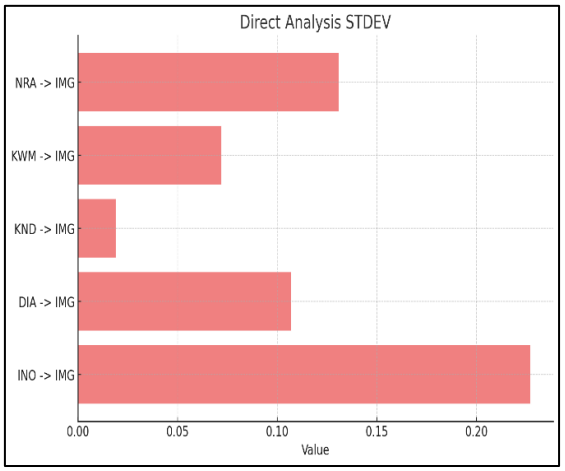

Figure 3: Path Coefficients' Standard Deviation.

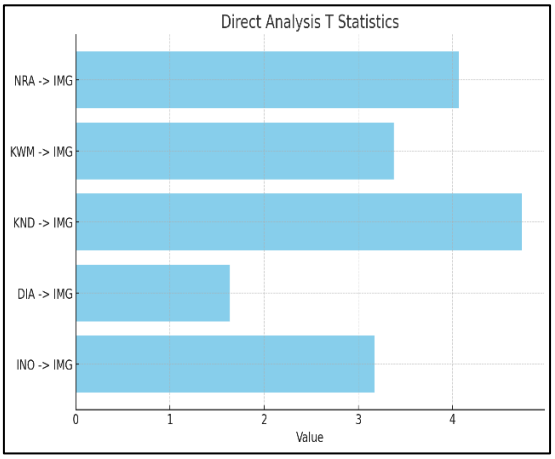

Figure 4: Path Coefficients' T-value.

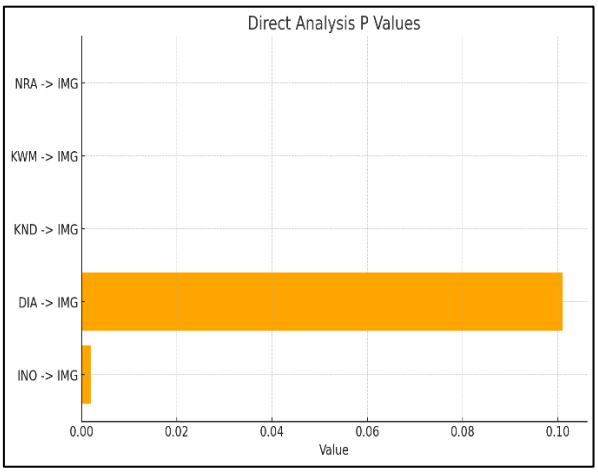

Figure 5: Path Coefficients' P-values.

Moderation analysis is to be considered the second part of the structural model of the study, for which the results are given in Table 9. It was found that the interaction effect between KWM and NRA is 0.231 towards the firm performance, causing to a positive and productive change in the main dependent variable. This coefficient reflects a t-value of 2.585, leading to a significance level of 5%. It is inferred that knowledge management practices have a significant moderating effect on the relationship between network resource acquisition and information management (IMG). However, explaining whether the KWM is strengthening this positive relationship between NRA and IMG needs further investigation.

Table 9: Moderation Analysis.

Direct Analysis	Coefficients	STDEV	T statistics	P values
1. KWM x NRA -> IMG	0.231	0.090	2.585	0.010
2. KWM x KND -> IMG	-0.002	0.048	0.046	0.963
3. KWM x DIA -> IMG	0.177	0.068	2.607	0.009
4. KWM x INO -> IMG	0.190	0.077	2.466	0.014
Note: INO- Information orientation, KND- Knowledge digitalization, NRA- Network resource acquisition KWM; Knowledge management, IMG; Information management, DIA; Digital adoption.				

The last moderating path in Table 9 explains the KWM as a moderator between INO and IMG by using the coefficient of 0.190. This coefficient implies that, considering all other factors as constant, a one percent increase or decrease in the value of the interaction term of KWM and INO leads to a change of 0.190% in the IMG, hence revealing some productive and fruitful interactive effect. The direct path of INO to IMG is also positively significant as expressed earlier in the direct path analysis of this research. This means that both the direct and moderating effects on firm performance are significant in statistical estimations when accounting for INO and KWM.

Figure 6 is used for this purpose, where the low and higher NRA are shown in the x-axis and IMG on the Y-axis. Moreover, both high and low level of knowledge management were reflected using the blue and dark red graph lines.

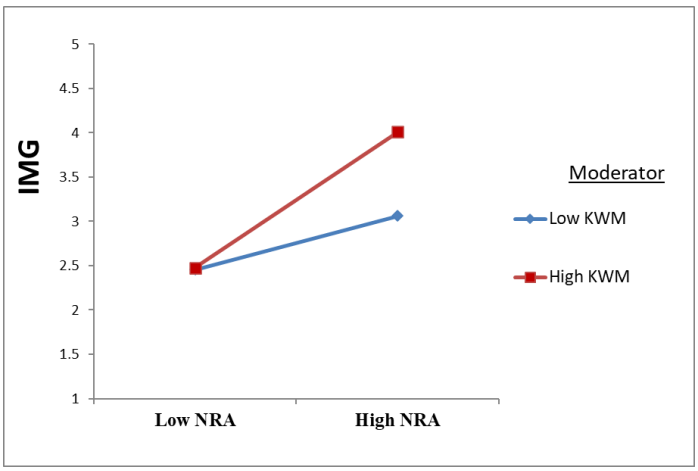

Figure 6: Moderating Role of KWM between IMG and INO.

The given results in Figure 6 show that KWM aims to strengthen the positive relationship between NRA and IMG for the sample of the given respondents. The specific investigation further expresses that firms with higher knowledge management practices tend to strengthen more the relationship between network resource acquisition and IMG, compared to those with low knowledge management (KWM). Therefore, we are strict to conclude that a higher level of

knowledge management practices strengthens the relationship between NRA and IMG compared to the low level of knowledge management practices, respectively.

However, the second path for the moderating effect of the KWM between KND and IMG has shown an insignificant p-value, which is 0.963 (See Table 9). Therefore, this research has concluded that knowledge management practices have no significant moderating effect on knowledge digitalization and information management. Hence, this relationship is not accepted on statistical findings where the coefficient is negative and low, and ultimately no presentation of the results by using the interaction graph for the high and low knowledge management along with the low and higher knowledge digitalization and information management.

The third path of the moderation analysis aims to investigate the moderating role of KWM between digital adoption and information management. The results confirm a significant moderation outcome where the coefficient is 0.177 and t-value is 2.607, leading to a p-value of 0.009. This p-value is significant with 1% level (Table 9). Therefore, we claim the significant moderating effect of knowledge management between digital adoption and information management. However, the direct path shows that the coefficient between the DIA and IMG is not significant, hence no direct relationship is present. With the addition of KWM, the results confirm that knowledge management significantly moderates the relationship between digital adoption and IMG.

Figure 7 shows this relationship by using both high and low role of the knowledge management with the presence of low and high digital adoption and, finally the IMG. The graphs in Figure 8 show that a higher level of the KWM tends to moderate more between the DIA and IMG, as compared to the firms with low KWM and vice versa. However, it is important to note that no direct relationship between DIA and IMG exists in the current research, and the same has been presented in direct path investigation.

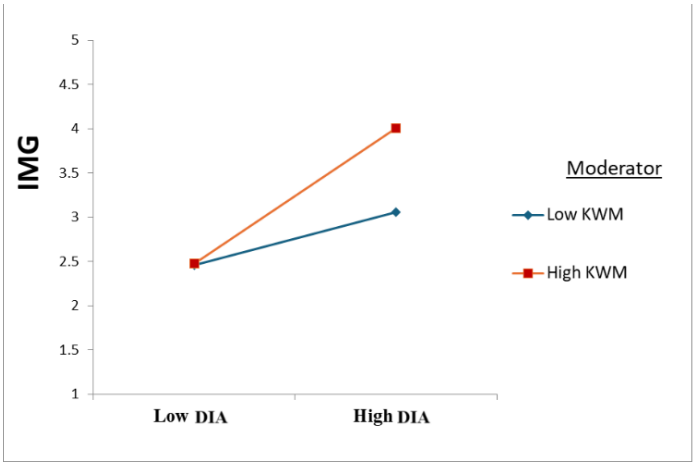

Figure 7: Moderating Role of KWM between DIA (Low and High) and IMG.

The analysis by using the graphs of KWM (both high and low) determines further explanation. For example, Figure 8 shows that firms with a higher level of KWM have more moderating influence between INO and IMG compared to those with a low KWM level.

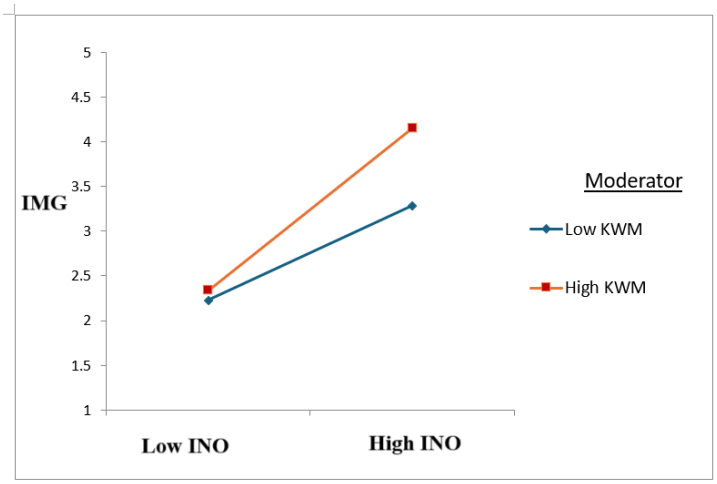

Figure 8: Moderating Role of KWM between INO (Low and High) and IMG.

The F-square of the model as generated using the Smart PLS for the given relationships are shown in Table 10.

Table 10: Predictors and f-square Values.

Predictor	f^2 Value	Explanation of f^2 Value
INO	0.186	A moderate effect size, suggesting that INO has a medium impact on the dependent variable relative to other predictors in the same model. The DV is IMG.
DIA	0.041	A small effect size, indicating that DIA or digital adoption has a minimal contribution to explaining variance in the outcome.
KND	0.020	A small effect size shows that KND (Knowledge Development) has a relatively small impact on the outcome variable, IMG.
KWM	0.036	A small effect size, suggesting that KWM (Knowledge Management) has a minor contribution to the model's explanatory power for the main DV; IMG.
NRA	0.280	A large effect size, indicating that NRA (New Resource Allocation) has a significant impact on the outcome variable, contributing strongly to the model. The DV is IMG.
KWM x NRA	0.115	A moderate effect size indicates that the interaction between KWM and NRA moderately affects the dependent variable, IMG.
KWM x KND	0.000	No effect, implying that the interaction between KWM and KND does not contribute to the explained variance of the IMG.
KWM x DIA	0.145	A moderate effect size indicates that the interaction between KWM and DIA has a meaningful impact on the IMG, which is the main outcome variable.
KWM x INO	0.101	A moderate effect size suggests that the interaction between KWM and INO has a notable impact on the main dependent variable of the study.
Note: INO- Information orientation, KND- Knowledge digitalization, NRA- Network resource acquisition KWM; Knowledge management, IMG; Information management, DIA; Digital adoption.		

5. Conclusion and Suggestions

Using the structural model output, the study concludes that informational orientation is positively and significantly connected with the information management in China. Additionally, the digitalization of knowledge, knowledge management, and network resource acquisition boost such management of the information in China. The additional results using the moderating effect of the KWM confirms the path between network resource acquisition and IMG, digital adoption and IMG, and informational orientation and information management. The study results open the path for several policy implications and recommendations. Firstly, to promote the IMG of the firms working in China, it is suggested that managers and top executives need to improve the INO practices by accounting for factors like Information sharing, Technology integration, and Data Driven Decision Making, respectively. The improvement in the INO tends to require several organizational supports for which this research suggest providing human resource, financial resource, information technology resource, and resources required for increasing the information orientation practices throughout the firm.

However, ignoring the significance of the knowledge management practices for improved INO and IMG relationship, it is equally required that the top management and executives in China can work on the knowledge acquisition, knowledge dissemination and responsiveness. By focusing on these three dimensions, the targeted firms could sustain knowledge management practices within and outside the organization for higher information management. Moreover, acquiring different sources within and outside the organization from different network actors also create a path for the higher IMG. In this way, it is further suggested that the targeted firms focus on the connection between different tangible and intangible organization resources and performance under the shadow of a resource-based view, which may also create a basis for value creation and competitive advantages. Therefore, there is a great need to focus on the positive relationship between network resource acquisition and IMG. Ultimately, this study also connected with various limitations which can be addressed in the future studies. For example, this study presents the results using the one method of data collection and quantitative analysis. It fully neglects the qualitative survey interview techniques of collecting the responses from the respondents. Additionally, the sample is mainly from information technology and software firms, and no attention was paid to those other firms working in similar locations in China.

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