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USE OF ENTERPRISE RESOURCE PLANNING (ERP) SYSTEM IN CHINESE SMALL AND MEDIUM ENTERPRISES (SMES)

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Research Paper

Abstract: *Major organizations are maturing and have extensively used Enterprise Resource Planning (ERP) System systems. However, due to intense rivalry, China's small and medium enterprises (SMEs) have not yet implemented ERP systems. Therefore, the study aimed to test a model for the use of ERP System in Chinese SMEs. Using cross-sectional research design and purposive sampling technique data were collected from 660 Chinese SMEs ERP users. The SEM analysis results show that organizational, environmental, and service quality factors have a positive and significant impact on ERP usage in Chinese SMEs, while system and information quality also positively influence both ERP usage and user satisfaction. Task-technology fit, driven by task characteristics, has a positive effect on ERP usage, and human self-efficacy contributes positively to both ERP usage and user satisfaction. Additionally, ERP usage and user satisfaction both have a positive and significant impact on SME performance. These findings suggested that SMEs in China should focus on the enhancement of ERP-related factors to increase ERP adoption. Additionally, improving system and information quality, alongside fostering user confidence, can significantly enhance both ERP usage and performance.*

Keywords: *Enterprise resource planning (ERP), TOE model, D&M IS model, Task-Technology Fit theory, Human self-efficacy*

1. Introduction

In the contemporary global marketplace, attaining a competitive advantage necessitates the utilization of intellectual assets and technology in conjunction with processes that align with strategic objectives and optimize resource allocation in business operations (Kunduru, 2023). As a recent technological innovation, ERP systems integrate both administrative and operational functions, effectively dismantling traditional organizational silos (Bialas et al., 2023). As stated by Chang

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(2020) process integration might help firms in reducing costs and boost efficiency by compressing cycle times and delivery times, optimizing communication, maintaining optimal inventories, improving product quality, enhancing network relationships, and increasing search activities.

When an ERP system is deployed for data processing and analysis, an organization can access current and real-time information (Ahmed et al., 2024; Bialas et al., 2023). This might provide more management centralization, standardization of operations, and enhanced decision making capabilities (Solano & Cruz, 2024). Because of the organizational communication process, ERP adoption has increased interaction and improved communication across all functional areas within a firm (Li, 2024). Kunduru (2023) mention how ERP systems consolidate many business processes that were previously housed in separate software units and allow different departments within a firm to access and utilize them singly." Businesses benefit from production planning and control, emphasizing improved inventory management, traceability, and resource efficiency (Cardo-Pito, 2024). These benefits often lead to enhanced client relations, boosting purchase satisfaction or providing immediate access to high-quality services (Agarwal & Gupta, 2024). Considering business size an important distinguishing factor for ERP advantages is necessary. According to Solano and Cruz (2024), while economic factors hold more weight in larger businesses, SMEs may find inventory control, timely delivery, and customer engagement more significant.

Suša Vugec et al. (2024) further contended that although ERP has demonstrated significant operational potential, many vendors primarily cater to large enterprises, while SMEs are more likely to benefit from such software due to their agility and aggressive pursuit of gaining a competitive edge. According to empirical data, big businesses are more likely than SMEs to implement digital applications, whereas SMEs are comparatively less likely to do so (Gessa et al., 2023). To adopt digital applications, SMEs often need more resources and knowledge (Jhurani, 2024). SMEs pay little attention to ERP systems in other countries, and at the same time Chinese SMEs are still low, with total ICT spending accounting for about 30% of total ICT spending by Chinese enterprises (Pan & Xu, 2024). China has many SMEs but has a lower ERP penetration rate indicates a larger space for growth which shows low growth in performance. This argument is further supported by the survey of IDC (Internet Data Center) (Hancerliogullari Koksalmis & Damar, 2022) where they argued that Chinese SMEs pay little attention to ERP and in their survey they further argued that about two-thirds of SMEs consider digitalization very important to their companies.

In another context, China's economy could grow if they have proper investment in ERP. Other authors also argued that the overall growth rate of the companies could be increased if they have proper attention on ERP system (Deelert et al., 2020). With this significance, at the same time, the domestic ERP in China market is still in a highly decentralized state: regionally, ERP penetration is higher in the eastern coastal areas; industry-wise, the manufacturing industry has always been the largest vertical area of ERP investment as compared to SMEs. This means that the central and western regions or industries outside the manufacturing ERP market have good growth opportunities like SMEs. Therefore, the study should focus on the ERP system of SMEs to increase economic growth.

Based on the previous discussion, this paper uses a theoretical model to investigate the justifications for the ongoing usage of ERP systems. Like other information technologies, these systems are impacted by external events and how the whole organization operates. As a result, organizational factors, technical aspects, and environmental influences should be considered, as described in the TOE model (Tornatzky et al., 1990). At the same time, the model of successful information technology adoption, also known as the D&M model by DeLone and McLean (D&M), offers the earlier factors in the study, like information quality and system quality (DeLone & McLean, 2002). In research around information technology, it is mentioned in many studies that the model has been validated, changed, and extended over time in significant ways. The TTF model tries to find how well the technology fits the job by primarily looking at whether the technology supports the task well. When features of the technology and task come together, the model works by pushing for usage and performance results (Goodhue & Thompson, 1995). Using the Technology-Organization-Environment (TOE) framework, the research explores factors that possibly affect the decisions regarding adopting ERP systems. The study uses the DeLone and McLean (D&M) information system success model, which puts technical qualities into two broad groups: system quality and information quality.

The study with the adopted model contributed a body of knowledge on the ERP system in the context of Chinese SMEs through integrating three established frameworks TOE, D&M, and TTF models which provide a comprehensive understanding of the factors driving ERP adoption and sustained usage. By examining organizational, technical, and environmental factors (TOE) alongside the system and information quality dimensions (D&M), the research offers a multidimensional view of ERP system success. Additionally, the study's use of the TTF model highlights the importance of aligning ERP functionalities with organizational tasks, providing deeper insights into how well ERP systems support SME performance in China. This combination of models offers a strong theoretical foundation for understanding the specific challenges and benefits of ERP systems in the unique SMEs of China which is also contributing practical implications for enhancing ERP system success and adoption. The study was further divided into four chapters, literature review, research methods, data analysis and interpretation, and discussion and conclusion.

2. Literature Review

2.1 Theoretical Review

Tornatzky et al. (1990) developed the Technology, Organization, and Environment (TOE) framework, which looked at how much technology different companies took on related to information system (IS) and information technology (IT) services and products. Now, everyone thinks this is an excellent way to look at taking up IT. TOE theory is helpful as it looks into how ERP is used after it is set up, helping to understand how ERP systems succeed later. Post-implementation happens after an ERP system starts being used in everyday tasks and means slowly mixing ERP's ways of managing and operating with business actions and choices (Solano & Cruz, 2024). This helps increase organizational power because many studies showed that IT changes can fit well using the TOE framework (Teo et al., 2006). An ERP system's post-

implementation deployment is the process by which it pervades everyday operations; that is, the management and operational philosophies that ERP espouses are progressively integrated with corporate processes and decision-making (Kunduru, 2023). There are two ways that this tight integration shows itself.

Initially, ERP systems affect organizations broadly. ERP systems are integrated information systems comprising many modules and applications, unlike other single-function systems (like MRP). For instance, the ERP system generates daily work schedules and various data to make management choices As a result, from a holistic standpoint, the TOE theory offers a suitable theoretical foundation for identifying elements that may impact post-implementation success (Teo et L., 2006). Therefore, fundamental architecture of this model was based on the TOE framework, which served as the foundation. Several criteria, including the quality of the information and the system, are considered in the technological environment. These elements are extracted from the IS Success Model (DeLone & McLean, 2002). The engagement of senior management is a significant variable in an organizational environment. The study's environmental component emphasizes the value of high-quality services, primarily since ERP development and implementation are outsourced to outside specialists.

Furthermore, Task-Technology Fit (TTF) theory is mainly focused on how well ERP systems support organizational tasks. Within the ERP context, the better the alignment between system capabilities and task requirements, the higher the likelihood of successful adoption and improved performance. Effective customization, ease of use, and training are crucial for ensuring that ERP systems fit business needs. In organizations applying TTF theory helps highlight the importance of tailoring ERP systems to match dynamic tasks and resource constraints for optimal value. Thus, based on three IS models, TOE model, and TTF following conceptual framework has been formulated below in Figure 1.

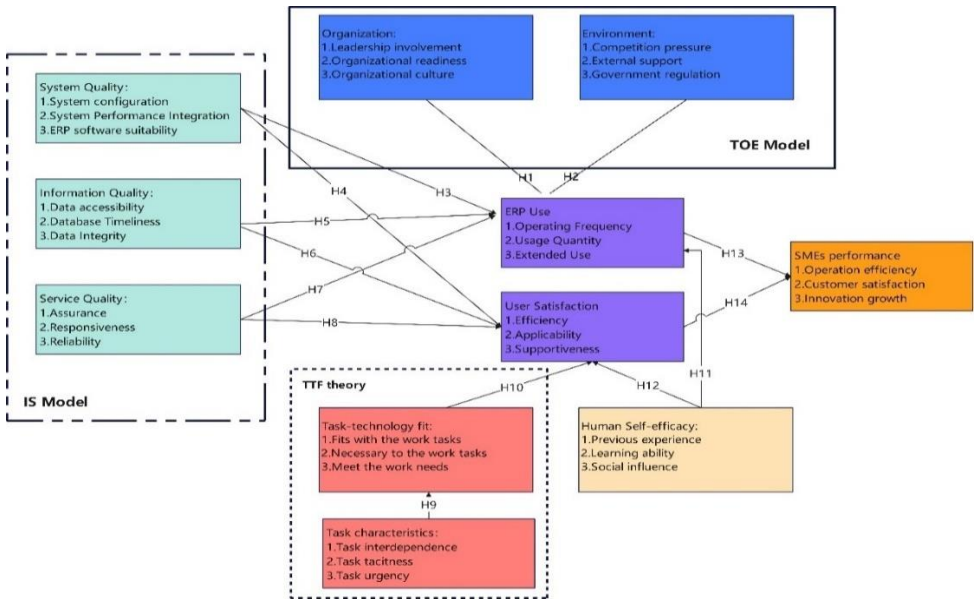

Figure 1: Research Model

2.2 Hypothesis Development

2.2.1 Organization and ERP Use

The organizations could be divided into three dimensions namely leadership involvement, organization readiness, and organization culture. Among these, leadership involvement entails support in ethical, financial, and resource allocation aspects and real-time realization of project/organizational goals. Commitment and support from the top management are crucial for successfully implementing ERP systems (Aljoghaiman & Bhatti, 2022). Moreover, organizational readiness also increases ERP use because effective project management ensures the planned implementation of ERP systems, allowing the system to connect various aspects of the organization seamlessly (Wiratama & Egeten, 2023). Furthermore, organizational culture according to Jo and Bang Jo and Bang (2023) is also a significant reason for project implementation failure. Companies implementing ERP systems must adjust their business processes to align with their best practices of ERP systems. This change not only impacts the customer's culture but is also constrained by it (Senoaji et al., 2024). Deelert et al. (2020) concluded that embedded value biases reflect the development culture in information system design methodologies. Thus, based on previous discussion, it is hypothesized that,

H1: *Organizations positively and significantly influence to ERP use.*

2.2.2 Environment and ERP Use

The environment could be conceptualized from industry pressure, external support, and government regulation. Among these, industry pressures such as those from competitors and partners enhance the perceived benefits of transitioning to ERP systems. In contrast, government support, including policies and funding for cloud ERP systems, does not have a similar effect. Similarly, El Haouat et al. (2024) found that competitive pressure influences decision-making in developing countries, whereas government pressure does not. AlBar and Hoque (2019) revealed that competitive and regulatory environments are essential and influential factors. Equally, external support with shown the relationship with trading partners is crucial for both practitioners and scholars. While relationships with partners may relate to the success of buyer-seller relationships, they are essential in Internet-based inter-organizational systems (IOS). The quick response from partners, observed through rapid feedback from potential collaborators, has become a key concern in inter-organizational systems planning. This responsiveness helps enhance the planning capabilities of this system (Ebirim et al., 2024). SME owners may use cloud ERP solutions despite needing more resources and competencies due to subjective strong rules (Maroufkhani et al., 2020). Thus, based on previous discussion, it is hypothesized that,

H2: *Environment positively and significantly influence to ERP use.*

2.2.3 System Quality, ERP Use, and User Satisfaction

System quality could be measured by system configuration, system performance integration, and ERP software suitability. Among these, system configuration shows that ERP architecture describes a robust system configuration that articulates the scope of functionality and how all components are organized and integrated (Frans et

al., 2024). A well-designed ERP architecture helps define how ERP system modules are seamlessly integrated into the organization (Sadhu et al., 2024). Conversely, an ill-defined architecture can lead to an accumulation of potential dysfunctions in the ERP system (Almad & Dhoon, 2024). Furthermore, system performance, from the IS Success Model DeLone and McLean, (1992), describes cloud ERP system performance. Chang (2020) noted this as an advantage for Taiwanese small businesses transitioning to cloud ERP. Cloud ERP provides more significant support, system performance, fast system updates, and ERP mobility than on-premise systems, according to (Balić et al., 2022). This may strengthen cloud ERP's apparent benefit, as noted above. Furthermore, it is worth noting that some ERP software packages can only function properly when used in conjunction with specific firm databases and operating systems (Peters & Aggrey, 2020). Further authors also argued that when the system quality improves satisfaction of the user also increases (Jo & Park, 2023). Thus, it is hypothesized that,

H3: *System quality positively and significantly influence to ERP use.*
H4: *System quality positively and significantly influence to user satisfaction.*

2.3 Information Quality, ERP Use, and User Satisfaction

The information quality could be addressed by data accessibility, database timelines, and data integrity. Among these, data accessibility according to Jo and Park (2023) discovered that the availability of data for end-users, and data accessibility are the most significant aspects influencing their operations. These criteria are related to offering consumers correct information without interruptions at appropriate moments. According to a study by Haddara and Elragal (2013), it has been demonstrated that both small and large companies in Norway think that accessibility of data is considered to be one of the most beneficial aspects. Furthermore, data integrity is also important which serves as a factor that assists in reducing errors occurring in transactions and gives decision-making information that can be viewed as useful or more accurate. Numerous studies have examined how Information Quality (IQ) relates to the use of information technology, although the exact nature of this relationship is not always clearly defined (Lestari & Musrady, 2023; Senoaji et al., 2024). Other studies conducted to look into possible links between these aspects, though findings often change depending on different contexts (Abdullah et al., 2023; Chang, 2020). Despite this, the studies have shown mixed results, and no firm conclusions have been established. Therefore, the following hypothesis has been formulated below,

H5: *Information quality positively and significantly influence to ERP use.*
H6: *Information quality positively and significantly influence to user satisfaction.*

2.4 Service Quality, ERP Use, and User Satisfaction

Within the field of Customer Relationship Management (CRM) systems found a significant association between the incidence of "extended use" and the perceived quality of service (ServQ). This correlation was shown to be significant. Information system (IS) staff do not immediately reflect the quality of the enterprise resource planning (ERP) system in the services they provide. However, they do contribute to good service quality by engaging in polite interactions with users (assurance)

(Haddara & Elragal, 2013), showing concern for user interests, understanding their needs (empathy), and offering prompt solutions to user problems (responsiveness). According to Sudarmo et al. (2024), this might motivate users to acquire knowledge and explore other functionalities of the installed system. Positive interactions with Information Systems professionals may enhance the user experience when using a mandated system (Chang, 2020). The study used to measure observational factors related to Service Quality were sourced from (Bandara et al., 2024). Another study also found that service quality is a significant predictor of user satisfaction and increases satisfaction positively (Billman et al., 2024; Hashim et al., 2023). Thus, the following hypothesis is formulated below,

H7: *Service quality positively and significantly influence to ERP use.*
H8: *Service quality positively and significantly influence to user satisfaction.*

2.5 Task characteristic and Technology FIT

Tasks are "the transformation from inputs to outputs, resulting from an individual's use of information technology" (Goodhue & Thompson, 1995). Task characteristics involve examining whether the use of technology involves non-routine and dependency features. The ERP systems developed by different manufacturers vary for various purposes. However, key objective is to manage cross-data integration appropriately and investigate the information that is most useful for overall operations inside the organization. As stated by Goodhue and Thompson (1995), the qualities of a job can either directly or indirectly impact the nature of a particular system and the efficiency with which information technology is used. Alkhwaldi et al. (2023) also reiterated that task and technology characteristics directly impact task-technology fit. Further studies also enforced that task performance positively and significantly increases the technology fit (El-Masri et al., 2023). Therefore, a study has formulated the following hypothesis below,

H9: *Task characteristics positively and significantly influence to task-technology fit.*

2.6 Task-technology fit and ERP Use

The extensive literature review of TTF models is included in Table 2. Based on the literature, the variables observed for task-technology fit are 1) Alignment with work tasks, 2) Essential for work tasks, and 3) Fulfilling work requirements. This study examines the alignment between tasks and technology in ERP systems. These models examine the factors that impact task-technology fit and view them as essential in enterprises adopting ERP systems. The question items assessing the observational variables of Task-technology fit are derived from studies conducted by (Jeyaraj, 2022). In other study also found the positive and significant impact of technology fit on ER use (Senoaji et al., 2024). They further argued that further research could be explored on other countries' SMEs to show the importance of ERP use. Thus, a study has formulated the following hypothesis below,

H10: *Task technology fit positively and significantly influence to ERP use.*

2.7 Human self-efficacy. ERP Use, and User Satisfaction

Human self-efficacy refers to a belief that an individual is capable of completing actions required to reach particular performance objectives (Lee & Bobko, 1994). This belief impacts the actions they take and choices made in various contexts. Schunk and DiBenedetto (2021) examined how rewards influence knowledge-sharing attitudes within organizations. Their study included self-efficacy theory in the framework, looking at how the belief in one's abilities was related to the willingness or reluctance to share knowledge. The study connected self-efficacy with behaviors related to organizational knowledge-sharing practices. Knowledge-sharing is a process of social interaction and collaboration. Individuals with higher self-efficacy judgments demonstrate a greater propensity to cooperate and disclose knowledge (El-Masri et al., 2023) and facilitate knowledge sharing, (Boudreau et al., 2003; Jayawickrama et al., 2016) investigated knowledge retention in ERP implementations within UK SMEs and explored various approaches and factors affecting knowledge retention. According to the literature, the variables observed in this study related to people's self-efficacy included 1) previous experience, 2) learning ability, and 3) social influence (Elmunsyah et al., 2023; Ferrando, 2022).

H11: *Human self-efficacy positively and significantly influence to ERP use.*
H12: *Human self-efficacy positively and significantly influence to user satisfaction.*

2.8 ERP use and SMEs performance

Many different things, like intention, how often used, self-reported use, and actual use, have been used in research to check how information systems get used. Various measures could give different results, as seen with the DeLone and McLean (D&M) model and other such frameworks (Mullins & Cronan, 2021). Hussain et al. (2024) found a significant link between intended and actual use. Also, how often something is used might not be the best way to measure how information systems get used. Basu and Jha (2024) further suggested that more frequent use does not always mean better results. They made a method to check usage based on its effectiveness, not just how often or long something gets used. Kim et al. (2024) changed how system utilization is thought of by combining both structure and function of system use. They found that ERP usage increases the SME's performance. In other study, it was further found the positive and significant impact of ERP use on SMEs performance (Roffia & Dabić, 2024). Thus, based on previous discussion, it is hypothesized that,

H13: *ERP use positively and significantly influence to SMEs' performance.*

2.9 User Satisfaction and SMEs Performance

User happiness is often regarded as the primary indicator of the success of an information system (Seddon et al., 1994). User happiness is essential in websites as it is vital for developing enduring connections and is pivotal in preserving profitability and guaranteeing overall success (Patterson et al., 1997). It has consistently been a benchmark for measuring information system success. User satisfaction measuring the observed variables corresponding to User Satisfaction were taken from the study by (Maroufkhani et al., 2020). In another study, it was also found that User satisfaction

has a positive and significant impact on SME performance (Kisanga, 2024). Therefore, a study has the following research hypothesis below,

H14: *User satisfaction positively and significantly influence to SMEs' performance.*

3. Research methodology

This research investigates the management elements that affect enterprise resource planning (ERP) systems utilization in China's small and medium-sized businesses (SMEs). A quantitative research method is employed to examine and analyze the correlation between various independent variables such as environment, organization, task characteristics, task matching, The hidden factors of ERP usage, user happiness, and small and medium-sized enterprise (SME) performance, as well as system quality, information quality, service quality, and human self-efficacy as well. In addition, cross sectional research design was employed to collect the data. Both SPSS 26.0 and AMOS version 26 were used to analyze the records.

3.1 Research tools and scales

The research questions and conceptual framework were fully considered during the questionnaire development. The design of each observational variable entry was also based on information gathered from the literature review. Table 1 below demonstrates the progress in developing the latent and observed variable scales. The questionnaire utilizes a 5-point Likert scale (1=completely disagree, 5=completely agree).

Table 1: Scale Development Table

Latent Variables	Observed Variables	Development of Research Variables
Organization	-Leadership involvement -Effective project management -Organizational fit	(Chung et al., 2022; Deelert et al., 2020)
Environment	-Competition pressure -Trading Partners' Readiness -Regulatory environment	(Damali et al., 2021)
Human self-efficacy	-previous experience -learning ability -social influence	(Maheshwari & Kha, 2022; Schunk & DiBenedetto, 2021)
System quality	-System configuration -System Performance Integration -ERP software suitability	(Elmunsyah et al., 2023; Kirmizi & Kocaoglu, 2022)
Information quality	-Accuracy -Availability -Timeliness	(Bamufleh et al., 2021; Elmunsyah et al., 2023; Kala Kamdjoug et al., 2020; Rizkiana, 2021)
Service quality	-Assurance -Reliability -Responsiveness	(Bamufleh et al., 2021; Elmunsyah et al., 2023; Kala Kamdjoug et al., 2020; Rizkiana, 2021)
ERP use	-Usage Frequency -Usage Quantity -Extended Use	(Bamufleh et al., 2021; Elmunsyah et al., 2023; Rizkiana, 2021)

Table 1: Continue…

Latent Variables	Observed Variables	Development of Research Variables
User satisfaction	-Efficiency -Applicability -Supportiveness	(Bamufleh et al., 2021; Elmunsyah et al., 2023)
SMEs performance	-operation efficiency -customer satisfaction -innovation growth	(Costa Melo et al., 2023)

3.2 Data collection Procedure

The data was collected from ERP users of the Chinese SMEs employing a purposive non-probability sampling technique. Based on the non-probability sampling method, this study was conducted online through a Questionnaire Star from October 2023 to May 2024. The questionnaire participants were collected separately based on the economic regions of China, divided into four central regions: east, center, west, and northeast. Hair et al. (2012) suggested that a minimum of five connectors is required for each indicator analyzed. However, the most efficient way to determine the sample size is a 20:1 ratio (one sample for every 20 observed variables). Therefore, because there were 27 observed variables in this study, the corresponding sample size was 660 (33 × 20 observed variables). To increase the response rate the questionnaires were distributed among 800 respondents and those 670 were returned. Surprisingly 660 were valid for data analysis. However, after data collection and cleaning, the sample size for each district was far more significant than anticipated in this research(Zhao & Zhang, 2024).

4. Analysis and Findings

4.1 Demographic Characteristics

Table 2 predicted values show the demographic characteristics of the respondents. Among the respondents there were male (68%), with females representing 32%. The largest share of positions held are production personnel (29.8%), followed by financial staff (19.8%) and department managers (17.6%). In terms of age, the majority fall between 21-30 years (30%), with a notable portion also in the 31-40 age range (23.3%). Educational qualifications are skewed toward those with bachelor's degrees (62.9%), with junior college graduates at 30.6%. In terms of industry, construction (37%) and transportation (29.7%) are most represented. Regarding organization type, the majority work in private organizations (63.6%), with public organizations making up 36.4%. Companies are mainly mid-to-large-sized, with 25.2% employing 601-800 people. Lastly, 60.2% of the companies use local ERP products, compared to 39.8% using international ERP systems. The above results are predicted in Table 2.

Table 2: Demographics of Respondents Table (N = 660).

Item	Frequency	Percentage
Gender		
Male	450	68%
Female	210	32%

Table 2: Continue…

Item	Frequency	Percentage
Position		
President, Managing Director, CEO	3	0.50%
Information Systems (IS) manager	21	3.20%
COO	27	4.10%
Clerk	69	10.50%
Assistant Manager	96	14.50%
Department Manager	116	17.60%
Financial staff	131	19.80%
Production personnel	197	29.80%
Age		
21-30	198	30.00%
31-40	154	23.30%
41-50	133	20.20%
51-60	115	17.40%
60 or older	60	9.10%
Educational Qualification		
Junior College	202	30.60%
Bachelor	415	62.90%
Masters	33	5.00%
Doctoral	10	1.50%
Industry		
Agriculture and food	26	3.90%
Manufacturing	94	14.20%
Construction	244	37.00%
Transportation	196	29.70%
Services	93	14.10%
Other	7	1.10%
Type of organization		
Public	240	36.40%
Private	420	63.60%
Company Size		
1-200 employees	82	12.40%
201-400 employees	85	12.90%
401-600 employees	131	19.80%
601-800 employees	166	25.20%
801-1000 employees	159	24.10%
More than 1000 employees	37	5.60%
Implemented ERP system		
International ERP products	263	39.80%
Local ERP products	397	60.20%

4.2 Model Fitness

To get a good fit, the root mean square error of approximation (RMSEA) should be lower than 0.05. This means that the goodness-of-fit index (GFI), the normed fit index (NFI), the comparative fit index (CFI), and the Tucker-Lewis index (TLI) should all be more than 0.9 to get a satisfactory fit, and they should be greater than 0.8 to achieve an acceptable fit. Also, it is suggested that the chi-square (X2) to degrees of freedom (df) ratio should be kept under 0.5. The outcomes indicates the values are as follows: TLI = 0.976, GFI = 0.928, AGFI = 0.913, CFI = 0.979, RMSEA = 0.038, RMR = 0.079, and

X2/df = 1.949 which shown fitness of model. The above results are predicted in Table 3.

Table 3: Goodness of Fit Index

Index	Standard	value
TLI	≥ 0.90	0.976
GFI	≥ 0.90	0.928
AGFI	≥ 0.90	0.913
CFI	≥ 0.90	0.979
RMSEA	≤0.05	0.038
RMR	< 0.08	0.079
X^2/df	≤ 2.0	1.949

4.3 Reliability analysis

The measurement was assessed using Structural Equation Modeling (SEM) which was analyzed in AMOS software. The measurement model evaluation was done to determine dependability and accuracy. Based on the results, the reliability evaluation used Cronbach's alpha coefficient and Composite Reliability (CR). As Hair et al. (2017), each construction showed Cronbach's Alpha and CR estimations higher than the given criterion of 0.7, which means that reliability is considered adequate for these constructs. Invalidity assessment, both convergent and discriminant validity were also considered. The critical metrics for convergent validity are Average Variance Extracted (AVE) and factor loadings. Fornell and Larcker (1981) suggest that all AVE values surpassed the 0.5 threshold, ranging from 0.524 to 0.922. Factor loadings were varying, from 0.711 to 0.898, with a wide range in between. According to Hensler et al. (2015), these findings prove convergent validity. As seen in Table 4 the scales used in the investigation showed dependable results.

Table 4: Scale Reliabilities and Validity Table

St. Dev.	Items	Mean	Factor Loading	Cronbach's Alpha	AVE	CR
1.352	SC1	3.727	0.846	0.908	0.723	0.887
1.359	SC2	3.441	0.841			
1.528	SC3	3.558	0.863			
1.219	SPI1	3.447	0.845	0.882	0.691	0.870
1.438	SPI2	3.500	0.821			
1.244	SPI3	3.412	0.828			
1.207	ESS1	3.412	0.819	0.897	0.693	0.871
1.424	ESS2	3.603	0.839			
1.355	ESS3	3.292	0.839			
1.392	DA1	3.445	0.839	0.901	0.699	0.875
1.385	DA2	3.659	0.832			
	DA3	3.394	0.838			
Database Timeliness	DT1	3.674	0.849	0.868	0.723	0.839
	DT2	3.564	0.851			
Data Integrity	DI1	3.480	0.860	0.830	0.702	0.825
	DI2	3.665	0.815			
Assurance	AS1	3.453	0.880	0.865	0.711	0.881
	AS2	3.536	0.821			
	AS3	3.564	0.828			

Table 4: Continue…

St. Dev.	Items	Mean	Factor Loading	Cronbach's Alpha	AVE	CR
Responsiveness	RES1	3.550	0.750	0.764	0.544	0.781
	RES2	3.542	0.721			
	RES3	3.524	0.741			
Reliability	REL1	3.555	0.743	0.773	0.560	0.795
	REL2	3.512	0.754			
	REL3	3.567	0.756			
Leadership involvement	LI1	3.558	0.761	0.824	0.583	0.808
	LI2	3.559	0.763			
	LI3	3.580	0.767			
Organizational readiness	OR1	3.647	0.733	0.829	0.584	0.808
	OR2	3.561	0.795			
	OR3	3.555	0.763			
Organizational culture	OC1	3.618	0.773	0.748	0.562	0.720
	OC2	3.558	0.726			
Competition pressure	CP1	3.577	0.807	0.826	0.665	0.856
	CP2	3.592	0.811			
	CP3	3.580	0.828			
External support	ES1	3.567	0.817	0.764	0.657	0.793
	ES2	3.618	0.804			
Government regulation	GR1	3.653	0.802	0.819	0.643	0.844
	GR2	3.544	0.784			
	GR3	3.559	0.819			
Task interdependence	TI1	3.591	0.808	0.787	0.888	0.813
	TI2	3.591	0.753			
Task tacitness	TT1	3.579	0.746	0.747	0.852	0.797
	TT2	3.627	0.771			
Task urgency	TU1	3.529	0.743	0.708	0.566	0.722
	TU2	3.642	0.761			
Fits with the work tasks	FWT1	3.618	0.792	0.798	0.649	0.787
	FWT2	3.612	0.819			
Necessary to the work tasks	NWT1	3.580	0.762	0.748	0.559	0.717
	NWT2	3.567	0.733			
Meet the work needs	MWN1	3.576	0.752	0.729	0.575	0.730
	MWN2	3.611	0.765			
Previous experience	PE1	3.618	0.773	0.802	0.588	0.811
	PE2	3.614	0.767			
	PE3	3.636	0.761			
Learning ability	LA1	3.611	0.767	0.806	0.594	0.815
	LA2	3.595	0.769			
	LA3	3.609	0.777			
Social influence	SI1	3.585	0.769	0.813	0.603	0.820
	SI2	3.574	0.757			
	SI3	3.585	0.803			
Operating Frequency	OF1	3.592	0.711	0.770	0.536	0.776
	OF2	3.602	0.723			
	OF3	3.635	0.762			
Usage Quantity	UQ1	3.588	0.715	0.777	0.524	0.768
	UQ2	3.548	0.731			
	UQ3	3.620	0.726			
Extend use	EU1	3.620	0.711	0.845	0.614	0.825
	EU2	3.605	0.728			

	EU3	3.558	0.898			
Efficiency	EFF1	3.623	0.759	0.69	0.832	0.789
	EFF2	3.594	0.752			
Applicability	APP1	3.562	0.723	0.696	0.806	0.777
	APP2	3.571	0.739			
Supportiveness	SUP1	3.539	0.737	0.703	0.922	0.826
	SUP2	3.606	0.742			
Operation efficiency	OE1	3.482	0.866	0.848	0.626	0.833
	OE2	3.567	0.78			
	OE3	3.559	0.721			
Customer satisfaction	CS1	3.606	0.745	0.733	0.830	0.788
	CS2	3.533	0.746			
Innovation growth	IG1	3.573	0.741	0.71	0.554	0.713
	IG2	3.573	0.747			

4.4 Correlation analysis

The statistical technique known as correlation analysis is used to gather information about the interrelationships and dependencies between two or more variables studied. It is helpful for researchers because it provides a foundation for further studies, such as regression analysis, and it also helps them understand the interactions between the variables. To investigate linear relationships between continuous variables, Pearson's correlation analysis is an appropriate method, which ranges from -1 to 1. A positive correlation coefficient shows a positive association, a negative correlation coefficient suggests a negative relationship and a correlation score of 0 implies there is no link between the two variables being compared. The information in the table reveals a strong and positive correlation between the 11 dimensions and that every indicator satisfies the criteria for indicator analysis and regression analysis. The results can be seen in the table.5 below.

Table 5: Correlation Matrix and Validity Assessment Table

	1	2	3	4	5	6	7	8	9	10
Task characteristics	1									
Task-technology fit	.629	1								
Organization	.506	.511	1							
Environment	.393	.374	.563	1						
System Quality	.419	.466	.530	.462	1					
Information Quality	.330	.510	.444	.340	.591	1				
Service Quality	.450	.468	.539	.399	.547	.491	1			
Human Self-efficacy	.461	.664	.523	.388	.563	.564	.510	1		
ERP Use	.529	.622	.771	.703	.682	.620	.680	.670	1	
User Satisfaction	.326	.508	.463	.389	.594	.582	.552	.667	.666	1
SMEs performance	.549	.671	.525	.397	.566	.498	.540	.696	.699	.608

4.5 Empirical Results

After measurement model assessment, the next step is to test the study hypothesis employing the SEM structural model. The SEM analysis results show that organizational, environmental, and service quality factors have a positive and significant impact on ERP usage in Chinese SMEs, while system and information quality also positively influence both ERP usage and user satisfaction. Task-technology

fit, driven by task characteristics, has a positive effect on ERP usage, and human self-efficacy contributes positively to both ERP usage and user satisfaction. Additionally, ERP usage and user satisfaction both have a positive and significant impact on SME performance, emphasizing the importance of aligning organizational, technical, and human factors for successful ERP implementation and enhanced business outcomes in SMEs. The above-discussed results are presented in Table 6 below,

Table 6: Hypothesis results

Hypotheses	Estimate	S.E.	T-value	P-value	Decision
H1：ORGANA→ERPUSA	0.205	0.20	10.411	***	Accepted
H2：ENVIRA→ERPUSA	0.212	0.017	12.606	***	Accepted
H3：SYSQA→ERPUSA	0.06	0.016	3.76	***	Accepted
H4：SYSQA→USATIA	0.118	0.027	4.4	***	Accepted
H5：INFOQA→ERPUSA	0.078	0.016	4.982	***	Accepted
H6：INFOQA→USATIA	0.106	0.027	3.893	***	Accepted
H7：SERQA→ERPUSA	0.188	0.024	7.879	***	Accepted
H8：SERQA→USATIA	0.191	0.038	4.976	***	Accepted
H9：TTCCA→TTFITA	0.782	0.043	18.101	***	Accepted
H10：TTFITA→ERPUSA	0.063	0.017	3.621	***	Accepted
H11：HSEFFA→ERPUSA	0.109	0.02	5.543	***	Accepted
H12：HSEFFA→USATIA	0.331	0.031	10.53	***	Accepted
H13：ERPUSA→SMESPA	0.602	0.054	11.078	***	Accepted
H14：USATIA→SMESPA	0.373	0.054	6.898	***	Accepted

Note: ORGANA-organization, ENVIRA-environment, SYSQA-system quality, IFOOQA-information quality, SERQA-service quality, TTCCA-task characteristics, TTFITA-task technology fit, human self-efficacy, ERPUSA- ERP usage, SMESPA-SMEs performance, USATIA-user satisfaction.

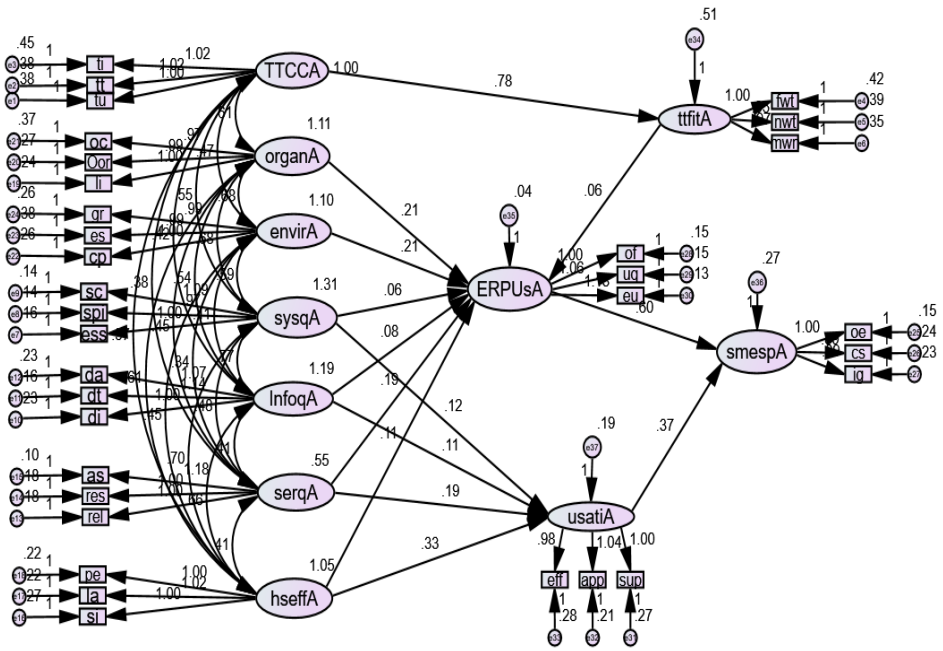

Figure 2: Empirical Model.

5. Discussion

The research objective was to test a model for the use of Enterprise Resource Planning (ERP) system in Chinese Small and Medium Enterprises (SMEs). This objective achieved through 14 hypotheses. The regression results show that organizations have a positive and significant impact on ERP use. The organization consisted of three factors leadership Involvement, Organizational Readiness, and Culture. The study with these dimensions shows that SMEs in China play an important role in increasing the ERP use. The results are in line with the following study of (Jo & Park, 2023). The findings of this research show that the structure seems to align with the evidence that has already been shown by other studies. In addition, the environment with three dimensions namely competition, external assistance, and regulations made by governments positive and significant impact on ERP use in China. This shows that when environmental improvement increased then the ERP use also increased. These observable aspects were noted in the literature review where was confirmed by various other research works (2017). The results from the research show that this structure fits with the practical data observed in actual situations, which further reinforces the findings already mentioned.

Furthermore, system quality also has a positive and significant impact on the ERP of China SMEs. These results show that when the system improves then the ERP usage of Chinese SMEs also increases. The findings are in line with the following studies Jo and Park (2023), where they also found that system quality is a significant predictor of improving ERP usage. On the other hand, system quality also positive and significant impact on user satisfaction in Chinese SMEs. These results show that the quality in the system is critical to their adoption and user satisfaction. DeLone and McLean's (2002) information systems success model suggests that high system quality leads to higher levels of system use and user satisfaction, a conclusion that is mirrored in these findings. For Chinese SMEs, these findings ensure that the ERP system functions effectively and reliably and is key to successful adoption and ongoing user satisfaction. On the other hand, information quality also has a positive and significant impact on ERP usage. These findings show that when organizations have a proper ERP systems then it provides accurate, timely, and relevant information and encourages users to utilize the system more effectively. The findings are similar to the study of Afifa et al. (2023) who supported that the perceived quality of information positively influences technology adoption, as users rely on reliable data for operational decisions. Therefore, it is enforced that organizations should have information quality because high-quality information is critical for decision-making, especially in SMEs where resource limitations demand efficient use of available data

Further depicted results show that information quality also positive and significant impact on user satisfaction of Chinese SMEs. This result shows that users who perceive the information provided through the ERP system as useful and reliable then they are more satisfied with the system. User satisfaction is essential for sustained ERP system use, as it enhances the overall experience and encourages continued engagement with the technology. Pramudito et al. (2023) highlight that information quality is a core component of user satisfaction, as it ensures users can trust the data they work with, leading to higher satisfaction levels in SMEs. Further predicted results show the positive and significant impact of service quality on the ERP usage of Chinese ERP.

This demonstrates that the quality of support services provided to users like timely assistance, reliable maintenance, and effective troubleshooting which plays a crucial role in encouraging SMEs to adopt and use ERP systems. The results are supported by Idkhan and Idris (2023), where they found that high service quality raises greater confidence in ERP systems, leading to more extensive and efficient use. As many SMEs in China rely on external vendors for ERP implementation and ongoing support, therefore it is argued that Chinese SMEs should focus on information quality because the effectiveness of these services directly impacts the system's usage.

Service quality also significantly and positively impacts user satisfaction which shows that when users experience high levels of support and service reliability, they are more satisfied with the ERP system overall. The result is consistent with the study of Jo and Park (2023) who confirmed that service quality is a critical factor in user satisfaction, as users are more likely to be content with systems that are well-supported and promptly serviced, particularly in SMEs that may lack internal IT resources. In this SMEs should focus on the improvement of service quality because it ensures that users feel supported in their interactions with the system, reducing frustrations and enhancing the overall user experience. Task characteristics also have a positive and significant impact on technology fit and this impact is shown when ERP systems align with the specific tasks required by SMEs, it enhances task efficiency. The results support the study of which Alyoussef (2023) also argued that task-technology tit emphasizing the alignment between technology and tasks leads to improved performance. These findings are significant for SMEs in China, because they ensure that ERP systems meet specific operational needs are crucial for maximizing their effectiveness and utility. Technology fit also positively and significantly impact on ERP usage. These findings shown that when the ERP system aligns well with the specific tasks and operational needs of SMEs, users are more likely to adopt and utilize the system. Task technology fit refers to how effectively the system supports the users' tasks, ensuring that the technology enables rather than hinders productivity. The results is consistent with the study of (Senoaji et al., 2024; Subhani et al., 2023) who also emphasized that a strong match between task requirements and technology capabilities leads to higher system use, as users perceive the ERP system to be a valuable tool in performing their operations effectively.

Further impact results show that human self-efficacy also has a positive and significant impact on ERP usage. This highlights the importance of users' confidence in their ability to use the ERP system effectively. When users believe they have the necessary skills and competence to operate the system, they are more likely to engage with it and make full use of its features. These findings are in line with the study of Xu et al. (2024) where they found that self-efficacy is a key predictor of technology adoption, as users who feel capable are more inclined to explore and integrate the system into their work processes. Thus these findings enforced that Chinese SMEs should focus on human self-efficacy because providing training and resources to boost user confidence can significantly enhance ERP system usage. Furthermore self-efficacy also positively and significantly impacts to the user's satisfaction. These results shown that users who feel confident in Chinese SMEs in their ability to use ERP systems are more likely to be satisfied, leading to improved overall business performance. This is consistent with the empirical study of Rasheed and Ahmed (2024) who they also posits that user confidence drives satisfaction and usage. In the

Chinese SME context, ensuring users are properly trained and confident in using ERP systems is key to maximizing system effectiveness and business outcomes. Lastly, user satisfaction also positively and significantly impacts to SMEs performance of Chinese SMEs. These results highlighted that satisfied users are more likely to use ERP systems effectively which contributed to improved SME performance. The results are consistent with Sudarmo et al. (2024) who confirmed that satisfied ERP users enhance firm performance through increased productivity, efficiency, and decision-making quality. For Chinese SMEs, focusing on user satisfaction with ERP systems can lead to tangible performance improvement.

6. Implications

6.1 Practical Implications

The study contributed practically that companies should focused on the usage of ERP systems because ERP systems are widely used in big companies and continue advancing as enterprise management software. However, smaller businesses have not been using home office setups that much or very well, especially when it comes to gaining full understanding. Due to different outside reasons, some businesses cannot centralize their offline workspaces, so they rely on remote work instead. Big companies can deal with this better because their enterprise management systems are more developed, but managing resources online is still incomplete for many smaller companies. This leads to difficulties in keeping information updated and shared quickly and effectively. On the other side, there is a full understanding of what ERP systems use in SMEs. To overcome all previous difficulties in their business, this study contributed to helping small businesses introduce a proper ERP system in their organization to increase their performance. Furthermore, the study also contributed to study findings to increase the focus of their external stakeholders on the unique features of this locally developed software is necessary. Also, it becomes important to recognize that employees in the company, as ERP software users, have self-efficacy, which should be included in the study framework for ERP use.

6.2 Theoretical Implications

This research aimed to analyze the variables that affect the percentage of SMEs that use enterprise resource planning (ERP) systems to improve the efficiency of their organizations from a performance standpoint. Both the TOE model, which was provided by Tornatzky (1990), and the IS model, which DeLone and McLean offered, were used to develop an integrated model. As stated by the TOE and IS models, six primary factors affect the behavioral intention and the final behavior of technology adoption and use. These factors are identified as influencing the behavior. The organization, the environment, the technology, the system quality, the information quality, and the service quality are factors that fall under this category. To further study the concepts that have been provided in the past, this research includes additional aspects, the most notable of which are human self-efficacy and task-technology matching. An individual's evaluation of their capacity to plan and take action to work towards accomplishing particular goals is what is defined as self-efficacy. Self-efficacy is defined as an individual's capability to plan and take action. An

additional point of interest is the degree to which a system aids in executing tasks and automatically adjusts itself in line with the needs of the tasks. These factors' strong influence on the utilization of ERP systems by small and medium-sized enterprises (SMEs) highlighted the usefulness of adding them.

7. Conclusion and Future Research

The study aimed to test a model for the use of Enterprise Resource Planning (ERP) System in Chinese SMEs. Using cross-sectional research design data were collected from Chinese SMEs and respondents were 660 who were utilizing ERP systems in their workplaces. The SEM analysis results show that organizational, environmental, and service quality factors have a positive and significant impact on ERP usage in Chinese SMEs, while system and information quality also positively influence both ERP usage and user satisfaction. Task-technology fit, driven by task characteristics, has a positive effect on ERP usage, and human self-efficacy contributes positively to both ERP usage and user satisfaction. Additionally, ERP usage and user satisfaction both have a positive and significant impact on SME performance. These findings suggested that SMEs in China should focus on the enhancement of ERP-related factors to boost ERP adoption. Additionally, improving system and information quality, alongside fostering user confidence, can significantly enhance both ERP usage and performance

The study has several limitations that could be tested in future studies. This research conducted on China. To keep the ERP system model valid and useful more broadly, it is suggested that future research should look at other regions to see if the model works in different places. Furthermore, possible bias from the sampling method must also be thought about, because such bias could come from things like the type of business or how the organization is built, which could influence the results. So, for future studies, it is strongly advised that such biases be carefully addressed to make research findings more authentic. This study gathered data mainly through quantitative analysis, and questionnaires were used to collect needed information. As a result, the outcomes of this study rest solely on statistical processing of the gathered data. Therefore, future research could explore mixed methods quantitative and qualitative methods that could increase strengths of the study.

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References

Abdullah, A.-M., Naser, K., & Bader, A.-M. (2023). Creative Accounting Practices By Companies Listed On The Kuwait Stock Exchange (Kse). *International Journal of Economics and Finance Studies*, *15*(4), 233-255. https://doi.org/10.34109/ijefs.202315412

Afifa, M. A., Saleh, I., & Van, H. V. (2023). Accounting information quality in the digital era–a perspective from ERP system adoption? *Global Knowledge, Memory and Communication*(ahead-of-print). https://doi.org/10.1108/GKMC-03-2023-

0101

Agarwal, P., & Gupta, A. (2024). Harnessing the Power of Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM) Systems for Sustainable Business Practices. https://doi.org/10.14445/22312803/IJCTT-V72I4P113

Ahmad, S., & Dhoon, M. (2024). User experience of using e-government applications and its impact on user satisfaction: case of Jordan. *International Journal of Procurement Management*, *19*(3), 386-412. https://doi.org/10.1504/IJPM.2024.137147

Ahmed, W., Najmi, A., & Majeed, S. (2024). Understanding the impact of technological flexibility at different decision levels to reap enterprise resource planning benefits. *Journal of Systems and Information Technology*, *26*(1), 115-139. https://doi.org/10.1108/JSIT-03-2020-0036

AlBar, A. M., & Hoque, M. R. (2019). Patient acceptance of e-health services in Saudi Arabia: an integrative perspective. *Telemedicine and e-Health*, *25*(9), 847-852. https://doi.org/10.1089/tmj.2018.0107

Aljoghaiman, A., & Bhatti, M. A. (2022). The role of e-business technologies in supply chain performance: Evidence from Saudi Arabian textile industry. *International Journal of eBusiness and eGovernment Studies*, *14*(1), 18-42. https://doi.org/10.34109/ijebeg.%20202214102

Alkhwaldi, A. F., Alobidyeen, B., Abdulmuhsin, A. A., & Al-Okaily, M. (2023). Investigating the antecedents of HRIS adoption in public sector organizations: integration of UTAUT and TTF. *International Journal of Organizational Analysis*, *31*(7), 3251-3274. https://doi.org/10.1108/IJOA-04-2022-3228

Alyoussef, I. Y. (2023). Acceptance of e-learning in higher education: The role of task-technology fit with the information systems success model. *Heliyon*, *9*(3). https://doi.org/10.1016/j.heliyon.2023.e13751

Balić, A., Turulja, L., Kuloglija, E., & Pejić-Bach, M. (2022). ERP Quality and the Organizational Performance: Technical Characteristics vs. Information and Service. *Information*, *13*(10), 474. https://doi.org/10.3390/info13100474

Bamufleh, D., Almalki, M. A., Almohammadi, R., & Alharbi, E. (2021). User acceptance of Enterprise Resource Planning (ERP) systems in higher education institutions: A conceptual model. *International Journal of Enterprise Information Systems (IJEIS)*, *17*(1), 144-163. https://doi.org/10.4018/IJEIS.20210101.oa1

Bandara, F., Jayawickrama, U., Subasinghage, M., Olan, F., Alamoudi, H., & Alharthi, M. (2024). Enhancing ERP responsiveness through big data technologies: an empirical investigation. *Information Systems Frontiers*, *26*(1), 251-275. https://doi.org/10.1007/s10796-023-10374-w

Basu, A., & Jha, R. (2024). ERP adoption prediction using machine learning techniques and ERP selection among SMEs. *International Journal of Business Performance Management*, *25*(2), 242-270. https://doi.org/10.1504/IJBPM.2024.137005

Bialas, C., Bechtsis, D., Aivazidou, E., Achillas, C., & Aidonis, D. (2023). Digitalization of the healthcare supply chain through the adoption of Enterprise resource planning (ERP) Systems in Hospitals: an empirical study on influencing factors and cost performance. *Sustainability*, *15*(4), 3163. https://doi.org/10.3390/su15043163

Billman, A., Budi, S., Daniel, H., & Bahri, B. (2024). Analysis Pengaruh Fun, Enjoyment,

Service Quality dan Quality System Factors of e-Learning System terhadap Student Satisfaction and Student Loyalty Setelah Pandemi Covid-19. *Jurnal Teknologi Industri dan Rekayasa (JTIR)*, *4*(12), 1-11. https://doi.org/10.53091/jtir.v4i12.58

Boudreau, J., Hopp, W., McClain, J. O., & Thomas, L. J. (2003). On the interface between operations and human resources management. *Manufacturing & Service Operations Management*, *5*(3), 179-202. https://doi.org/10.1287/msom.5.3.179.16032

Cardo-Pito, T. (2024). Enterprise resource planning systems. In *Research Handbook on Accounting and Information Systems* (pp. 35-49). Edward Elgar Publishing. https://doi.org/10.4337/9781802200621.00011

Chang, Y.-W. (2020). What drives organizations to switch to cloud ERP systems? The impacts of enablers and inhibitors. *Journal of Enterprise Information Management*, *33*(3), 600-626. https://doi.org/10.1108/JEIM-06-2019-0148

Chung, S. H., Farah, B. N., & Tang, H.-L. (2022). The Relationships Between the Factors of a TOE Framework and Student ERP Systems Learning: A Curriculum Development Case. *Journal of Information Technology Education*. https://doi.org/10.28945/4924

Costa Melo, I., Alves Junior, P. N., Queiroz, G. A., Yushimito, W., & Pereira, J. (2023). Do we consider sustainability when we measure small and medium enterprises'(SMEs') performance passing through digital transformation? Sustainability, 15(6), 4917. https://doi.org/10.3390/su15064917

Damali, U., Kocakulah, M., & Ozkul, A. S. (2021). Investigation of Cloud ERP Adoption in the Healthcare Industry Through Technology-Organization-Environment (TOE) Framework: Qualitative Study. *International Journal of Healthcare Information Systems and Informatics*, *16*(4). https://www.researchgate.net/profile/Ahmet-Ozkul/publication/355329027

Deelert, J., Jaturat, N., & Kuntonbutr, C. (2020). The mediating effect of ERP management on the relationship between TOE framework and organizational performance. *International Journal of Management (IJM)*, *11*(12). https://doi.org/10.34218/IJM.11.12.2020.121

DeLone, W. H., & McLean, E. R. (1992). Information systems success: The quest for the dependent variable. *Information systems research*, *3*(1), 60-95. https://doi.org/10.1287/isre.3.1.60

DeLone, W. H., & McLean, E. R. (2002). Information systems success revisited. Proceedings of the 35th annual Hawaii international conference on system sciences, 2966-2976. https://doi.org/10.1109/HICSS.2002.994345

Ebirim, G. U., Unigwe, I. F., Asuzu, O. F., Odonkor, B., Oshioste, E. E., & Okoli, U. I. (2024). A critical review of ERP systems implementation in multinational corporations: trends, challenges, and future directions. *International Journal of Management & Entrepreneurship Research*, *6*(2), 281-295. https://doi.org/10.51594/ijmer.v6i2.770

El Haouat, Z., Essalih, S., Bennouna, F., Ramadany, M., & Amegouz, D. (2024). Environmental optimization and operational efficiency: Analysing the integration of life cycle assessment (LCA) into ERP systems in Moroccan companies. *Results in Engineering*, *22*, 102131. https://doi.org/10.1016/j.rineng.2024.102131

El-Masri, M., Al-Yafi, K., & Kamal, M. M. (2023). A task-technology-identity fit model of smartwatch utilisation and user satisfaction: A hybrid SEM-neural network approach. *Information Systems Frontiers*, *25*(2), 835-852. https://doi.org/10.1007/s10796-022-10256-7

Elmunsyah, H., Nafalski, A., Wibawa, A. P., & Dwiyanto, F. A. (2023). Understanding the impact of a learning management system using a novel modified DeLone and McLean model. *Education Sciences*, *13*(3), 235. https://doi.org/10.3390/educsci13030235

Ferrando, J. (2022). Rehabilitation of the Urca Casino New Creation Center. *Rita Revista Indexada de Textos Academicos*(18), 120-141. https://doi.org/10.24192/2386-7027(2022)(v18)(07)

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, *18*(1), 39-50. https://doi.org/10.1177/002224378101800104

Frans, S., Dominica, M. R. T. D., Lucky, I. K., Lilik, S., & Eva, Y. U. (2024). Application of The User Centered Design Method To Evaluate The Relationship Between User Experience, User Interface and Customer Satisfaction on Banking Mobile Application. *Jurnal Informasi Dan Teknologi*, *6*(1), 7-13. http://dx.doi.org/10.60083/jidt.v6i1.465

Gessa, A., Jiménez, A., & Sancha, P. (2023). Exploring ERP systems adoption in challenging times. Insights of SMEs stories. *Technological Forecasting and Social Change*, *195*, 122795. https://doi.org/10.1016/j.techfore.2023.122795

Goodhue, D. L., & Thompson, R. L. (1995). Task-technology fit and individual performance. *MIS quarterly*, 213-236. https://doi.org/10.2307/249689

Haddara, M., & Elragal, A. (2013). ERP adoption cost factors identification and classification: a study in SMEs. *International Journal of Information Systems and Project Management*, *1*(2), 5-21. https://aisel.aisnet.org/ijispm/vol1/iss2/2

Hair, J., Hollingsworth, C. L., Randolph, A. B., & Chong, A. Y. L. (2017). An updated and expanded assessment of PLS-SEM in information systems research. *Industrial management & data systems*, *117*(3), 442-458. https://doi.org/10.1108/IMDS-04-2016-0130

Hair, J. F., Sarstedt, M., Pieper, T. M., & Ringle, C. M. (2012). The use of partial least squares structural equation modeling in strategic management research: a review of past practices and recommendations for future applications. *Long range planning*, *45*(5-6), 320-340. https://doi.org/10.1016/j.lrp.2012.09.008

Hancerliogullari Koksalmis, G., & Damar, S. (2022). An empirical evaluation of a modified technology acceptance model for SAP ERP system. *Engineering Management Journal*, *34*(2), 201-216. https://doi.org/10.1080/10429247.2020.1860415

Hashim, M. S., Bakar, A. A., & Auzzir, Z. A. (2023). Enhancing Global Business Resilience: Disaster Preparedness Strategies Among Msme Manufacturers In Northern Peninsular Malaysia. *International Journal of eBusiness and eGovernment Studies*, *15*(4), 146-167. https://doi.org/10.34111/ijebeg.2023150408

Hussain, M. K., Siddique, A., Kazmi, H., & Obaidullah, N. (2024). Factors Affecting User Acceptance of ERP Systems in SMEs. *Bulletin of Multidisciplinary Studies*, *1*(1), 01-13. https://doi.org/10.48112/bms.v1i1.758

Idkhan, A. M., & Idris, M. M. r. (2023). The Impact of User Satisfaction in the Use of E-

Learning Systems in Higher Education: A CB-SEM Approach. *International Journal of Environment, Engineering and Education*, *5*(3), 100-110. https://doi.org/10.55151/ijeedu.v5i3.91

Jayawickrama, U., Liu, S., & Smith, M. H. (2016). Empirical evidence of an integrative knowledge competence framework for ERP systems implementation in UK industries. *Computers in Industry*, *82*, 205-223. https://doi.org/10.1016/j.compind.2016.07.005

Jeyaraj, A. (2022). A meta-regression of task-technology fit in information systems research. *International Journal of Information Management*, *65*, 102493. https://doi.org/10.1016/j.ijinfomgt.2022.102493

Jhurani, J. (2024). Revolutionizing Enterprise Resource Planning: The Impact Of Artificial Intelligence On Efficiency And Decision-making For Corporate Strategies. *International Journal of Computer Engineering and Technology (IJCET)*, *13*, 156-165. https://iaeme.com/Home/issue/IJCET?Volume=13&Issue=2

Jo, H., & Bang, Y. (2023). Understanding continuance intention of enterprise resource planning (ERP): TOE, TAM, and IS success model. *Heliyon*, *9*(10). https://doi.org/10.1016/j.heliyon.2023.e21019

Jo, H., & Park, D.-H. (2023). Mechanisms for successful management of enterprise resource planning from user information processing and system quality perspective. *Scientific Reports*, *13*(1), 12678. https://doi.org/10.1038/s41598-023-39787-y

Kala Kamdjoug, J. R., Bawack, R. E., & Tayou, A. E. T. (2020). An ERP success model based on agency theory and IS success model: The case of a banking institution in Africa. *Business Process Management Journal*, *26*(6), 1577-1597. https://doi.org/10.1108/BPMJ-04-2018-0113

Kim, D., Cho, J., & Jung, S. (2024). Exploring the determinants of information systems performance: A case of Korean SMEs. *International journal of advanced smart convergence*, *13*(2), 235-248. https://doi.org/10.7236/IJASC.2024.13.2.235

Kirmizi, M., & Kocaoglu, B. (2022). The influencing factors of enterprise resource planning (ERP) readiness stage on enterprise resource planning project success: a project manager's perspective. *Kybernetes*, *51*(3), 1089-1113. https://doi.org/10.1108/K-11-2020-0812

Kisanga, H. E. (2024). Outcomes of E-Commerce Adoption on Enhancing Small and Medium Enterprises Performance in Tanzania: A Case of Ilala Municipal Council. *European Journal of Theoretical and Applied Sciences*, *2*(3), 721-734. https://doi.org/10.59324/ejtas.2024.2(3).56

Kunduru, A. R. (2023). Effective usage of artificial intelligence in enterprise resource planning applications. *International Journal of Computer Trends and Technology*, *71*(4), 73-80. https://doi.org/10.14445/22312803/IJCTT-V71I4P109

Lee, C., & Bobko, P. (1994). Self-efficacy beliefs: Comparison of five measures. *Journal of applied psychology*, *79*(3), 364. https://psycnet.apa.org/buy/1994-35764-001

Lestari, T. U., & Musrady, R. A. F. (2023). The Impact of ERP And XBRL Implementation on The Accounting Information Quality. *Jurnal Ilmiah Manajemen, Ekonomi, & Akuntansi (MEA)*, *7*(2), 373-393. https://doi.org/10.31955/mea.v7i2.3019

Li, J. (2024). The Past, Present and Future of Enterprise Resource Planning. *Journal of*

Enterprise and Business Intelligence, *4*(1), 32-41. https://doi.org/10.53759/5181/JEBI202404004

Maheshwari, G., & Kha, K. L. (2022). Investigating the relationship between educational support and entrepreneurial intention in Vietnam: The mediating role of entrepreneurial self-efficacy in the theory of planned behavior. *The International Journal of Management Education*, *20*(2), 100553. https://doi.org/10.1016/j.ijme.2021.100553

Makerd, P., & Siriwichai, C. (2022). Factors Affecting Worker's Contribution to The Social Enterprise in Thailand. *International Journal of Operations and Quantitative Management*, *28*(1), 193-210. https://doi.org/10.46970/2022.28.1.11

Maroufkhani, P., Wan Ismail, W. K., & Ghobakhloo, M. (2020). Big data analytics adoption model for small and medium enterprises. *Journal of Science and Technology Policy Management*, *11*(4), 483-513. https://doi.org/10.1108/JSTPM-02-2020-0018

Mullins, J. K., & Cronan, T. P. (2021). Enterprise systems knowledge, beliefs, and attitude: A model of informed technology acceptance. *International Journal of Information Management*, *59*, 102348. https://doi.org/10.1016/j.ijinfomgt.2021.102348

Pan, X., & Xu, G. (2024). The impact of managers' IT experience on the enterprises' digital transformation: Empirical evidence from China. *Applied Economics*, *56*(30), 3652-3668. https://doi.org/10.1080/00036846.2023.2207813

Patterson, P. G., Johnson, L. W., & Spreng, R. A. (1997). Modeling the determinants of customer satisfaction for business-to-business professional services. *Journal of the academy of marketing science*, *25*, 4-17. https://doi.org/10.1007/BF02894505

Peters, E. S., & Aggrey, G. K. (2020). An ISO 25010 Based Quality Model for ERP Systems. *Advances in Science, Technology and Engineering Systems Journal*, *5*, 578-583. https://api.semanticscholar.org/CorpusID:216653752

Pramudito, D. K., Arijanti, S., RUkmana, A. Y., Oetomo, D. S., & Kraugusteeliana, K. (2023). The Implementation of End User Computing Satisfaction and Delone & Mclean Model to Analyze User Satisfaction of M. TIX Application. *Jurnal Informasi dan Teknologi*, 7-12. https://doi.org/10.60083/jidt.v5i3.383

Rasheed, T., & Ahmed, S. (2024). Online information retrieval self-efficacy of library professionals: a predictor of patrons' satisfaction in university libraries. *Digital Library Perspectives*, *40*(2), 264-281. https://doi.org/10.1108/DLP-12-2023-0108

Rizkiana, A. (2021). Can investor sentiment in social media be used to make investment decision in stock market?. *Academy of Accounting and Financial Studies Journal*, *25*(1), 1-6. https://api.semanticscholar.org/CorpusID:252037588

Roffia, P., & Dabić, M. (2024). The role of management control and integrated information systems for the resilience of SMEs. *Review of Managerial Science*, *18*(5), 1353-1375. https://doi.org/10.1007/s11846-023-00657-6

Sadhu, A. K. R., Parfenov, M., Saripov, D., Muravev, M., & Sadhu, A. K. R. (2024). Enhancing Customer Service Automation and User Satisfaction: An Exploration of AI-powered Chatbot Implementation within Customer Relationship Management Systems. *Journal of Computational Intelligence and*

Robotics, *4*(1), 103-123. https://thesciencebrigade.com/jcir/article/view/249

Schunk, D. H., & DiBenedetto, M. K. (2021). Self-efficacy and human motivation. In *Advances in motivation science* (Vol. 8, pp. 153-179). Elsevier. https://doi.org/10.1016/bs.adms.2020.10.001

Seddon, P., Kiew, M.-Y., & Patry, M. (1994). A Partial Test and Development of the DeLone and McLean Model of IS Success. *Australasian Journal of Information Systems*. https://aisel.aisnet.org/icis1994/2

Senoaji, F., Nuraeni, L., Suwarna, A. I., Safrida, S., & Sriyono, S. (2024). The Application of Human Organization Technology Model to Evaluate ERP Information Systems in General Contractor, Supplier and Trade National Companies. *MALCOM: Indonesian Journal of Machine Learning and Computer Science*, *4*(1), 45-50. https://doi.org/10.57152/malcom.v4i1.978

Solano, M. C., & Cruz, J. C. (2024). Integrating analytics in enterprise systems: A systematic literature review of impacts and innovations. *Administrative Sciences*, *14*(7), 138. https://doi.org/10.3390/admsci14070138

Subhani, W., Latiff, A. S. A., & Wahab, S. A. (2023). Effort expectancy, task technology fit, and ERP adoption behavior: Moderating effect of trust in technology: evidence from SMEs of Pakistan. *Pakistan Journal of Commerce and Social Sciences (PJCSS)*, *17*(3), 424-445. https://hdl.handle.net/10419/280679

Sudarmo, S., Vandika, A. Y., & Fahrijal, R. (2024). The Effect of Enterprise Resource Planning (ERP) System Implementation, User Training, and Management Support on User Satisfaction in Manufacturing Companies. West Science Information System and Technology, 2(02), 233-243, http://dx.doi.org/10.58812/wsist.v2i02.1209.

Suša Vugec, D., Pivar, J., & Stjepić, A.-M. (2024). Technological Trends in Human Resource Management—Innovation Analysis. In *Building the Future with Human Resource Management* (pp. 1-36). Springer. https://doi.org/10.1007/978-3-031-52811-8_1

Teo, T. S., Ranganathan, C., & Dhaliwal, J. (2006). Key dimensions of inhibitors for the deployment of web-based business-to-business electronic commerce. *IEEE Transactions on engineering Management*, *53*(3), 395-411. https://doi.org/10.1109/TEM.2006.878106

Tornatzky, L., & Fleischer, M. (1990). The process of technology innovation, Lexington, MA, *Lexington Books.* https://search.worldcat.org/title/1167088072

Wiratama, J., & Egeten, A. E. J. (2023). Modeling the Readiness Measurement for Enterprise Resource Planning System Implementation Success. *Jurnal Nasional Teknik Elektro dan Teknologi Informasi*, *12*(3), 159-166. https://doi.org/10.22146/jnteti.v12i3.7699

Xu, J., Falkenstein, M. J., & Kuckertz, J. M. (2024). Feeling more confident to encounter negative emotions: The mediating role of distress tolerance on the relationship between self-efficacy and outcomes of exposure and response prevention for OCD. *Journal of Affective Disorders*, *353*, 19-26. https://doi.org/10.1016/j.jad.2024.02.091

Zhao, M., & Zhang, T. (2024). The Influence of Physical Education Management on the Psychological Quality of College Students. *Revista de Psicología del Deporte (Journal of Sport Psychology)*, *33*(1), 364-374. https://rpd-online.com/index.php/rpd/article/view/1584