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Enterprise Recourse Planning Adoption Behaviour in SMEs of Pakistan with the Mediating Role of Attitude

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Abstract

The majority of a company's crucial business procedures are supported by the enterprise resource planning (ERP) system. It supports the upkeep of consistent and trustworthy data collection for decision-making while SMEs are still reticent to adopt innovative technologies such as ERP. This study examines the effect of innovativeness in information technology and task technology fit on ERP adoption behavior. Moreover, this study also investigates how attitudes toward technology mediate the said relationships. The method of research used in this study was quantitative. The data was gathered from employees of SMEs in Pakistan that have ERP systems by using a Google survey form. 247 respondents filled out the questionnaire. This study used partial least square structure equation modeling PLS-SEM to conduct the measurements and test the hypothesis.

Keywords: ERP, innovativeness in information technology, task technology fit, attitude, ERP adoption behavior, SMEs of Pakistan

1 Introduction

Industries advance technologically in stages; the first industrial revolution cemented the ground for the second industrial revolution using both new and old technologies, whereas information technology helped prepare the way for the third industrial revolution (Shafiul et al., 2023). In this era, businesses expanded from national to multinational and began operating in multiple locations.

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Complex organizational planning is required due to the complexity of organizational procedures in a globalized industry where businesses operate in various nations and industries (Ruivo et al., 2020). Information technology can assist in supporting these organizational planning procedures. Enterprise resource planning systems aim to record all or at least most of an organization's processes, including, for example, finance, purchasing, manufacturing, and sales (Falk, 2023). Enterprise Resource Planning is a calculated programming system designed to automate crucial organizational functions to enhance client administration, and the most beneficial parts of a company's operations should be combined into a single, integrated system (Subhani et al., 2023).

Introduce new ways to measure organisational success. To strengthen a company's competitive edge, integrating its internal and external operations has recently attracted much attention (Kumar Pandey & Kumar, 2023). ERP is known for increasing business productivity, lowering costs, and integrating business processes for firms of all sizes (Aroba, 2023). The use of automation in businesses across all sectors, whether small or large, is the main pathway now creating a level playing field for large and small organisations determined that firms that successfully implement ERP will stand out from the competitors in the years to come (Kumar Pandey & Kumar, 2023). Access to real-time data from ERP systems can greatly enhance business operations, including resource management, decision-making, and customer relationship management (Kumar Pandey & Kumar, 2023).

Over half of all SMEs in the UK and Australia use ICT systems in their business processes, but SMEs in underdeveloped nations encounter issues with ICT adoption (Shahadat et al., 2023). ERP systems are acknowledged as a valuable collection of business tools for product development, accounting, inventory, procurement, production, planning, human resources, material management, sales, and marketing (Al-Amin et al., 2023). Some of the issues include insecure infrastructure, problems with IT budgets, a lack of judicial & policy requirements for IT, the selection of a vendor, ignorance of the best module to implement, a lack of employee involvement in ERP system decisions, resistance to change in rules & business processes, lack of innovation, cultural and societal barriers are the key variables influencing the adoption of ERP in Saudi Arabia (Alzughaibi et al., 2021). Similarly, developing nations like Bangladesh, India, and Pakistan are just beginning to use ICT in their SMEs (Miraz & Habib, 2016).

SMEs in Pakistan are as significant as those in other developing countries and play a key role in the economy. Pakistani SMEs are the primary sources of poverty reduction, growth of the national economy, job creation, and social uplifting (Dar et al., 2017). Over 90% of all enterprises in Pakistan are SMEs, which produce over 30% of the country's GDP, 25% of its exports, and 35% of its industrial sector's output (SMEDA, 2020).

Pakistani SMEs cannot bear the enormous investment required for the IT infrastructure for the growth of SMEs; the government institutions are unable to arrange programs to focus on the issues of SMEs to reduce the risks & barriers associated with technology adoption (Dar et al., 2017). SMEs are still facing hurdles in technology adoption: no support from commercial banks, no support from SME banks, no financial support from the government end, and lastly, there is no implementation mechanism in Pakistan (Sadiq, 2018). ICT implementation was delayed because Pakistan's federal & provincial governments, as well as national and local corporate organizations, have not yet adopted the proper technological policies and legal frameworks that would encourage ICT use; additionally, government, local business institutions, especially financial banks are hindered in obtaining technology-up gradation loans at lower interest rates by SMEs of Pakistan (Nazir & Khan, 2022).

Pakistan has also declined its rank from 105 (2019) to 107 (2020) position out of 131 countries in the global innovation index overall and particularly political environment from 107 (2019) to 109 (2020), education from 122 (2019) to 124 (2020), and information & communication technologies

(ICT) from 109 (2019) to 111 (2020) (Global Innovation Index, 2020). In comparing innovation and information and communication technologies (ICT) with the regional countries India, Iran, and Sri Lanka, Pakistan ranked in the last position regarding adopting innovation and information and communication technologies (ICT). The global innovation index year 2020 is reported in Table 1 (see Annexture 1).

Senior executives and owner-managers in SMEs struggled with electronic communication. They were reluctant to improve their ICT skills because they thought it was too late to pick up and use a computer. (Nazir & Khan, 2022). Due to the post-COVID-19 in Pakistan, there is a critical business environment for SMEs; about 40 % of SMEs require business development services (BDS) regarding the software development and management information system (MIS) with financial and technical support from SMEDA (SMEDA, 2021). In addition to 32.9 percent requiring no aid for BDS (Business et al.), 35.6% of new SMEs need assistance with developing websites and mobile apps, 28.8% with management information systems, 32.9% with software development, and 27.4% with communication and networking (SMEDA, 2021).

Digital Adoption Index (2021) reported that the digital adoption rate of Pakistan is 0.39, as compared to other regional countries is very low, India 0.51, Sri Lanka 0.47, Iran 0.51, Oman 0.65, Kazakhstan 0.67, Thailand 0.61, Bhutan 0.44 and Malaysia 0.69. Pakistan's total population is about 230 million, with 6.7 million SMEs contributing significantly to Pakistan's GDP but having low digital adoption. The digital adoption index year 2021 compared to regional countries is reported in Table 2 (see Annexture 1).

The study emphasizes comprehensiveness and explores the underlying factors contributing to the weak adoption of ERP systems in a developing nation, as evidenced by Pakistan. Its theoretical foundation is examining the authenticity of ERP adoption behavior.

This study utilized three theories to analyze ERP adoption behavior: the diffusion of innovation theory (DOI), the task technology fit model (TTF), and the theory of planned behavior (TPB) (Ajzen, 1991; Goodhue & Thompson, 1995; Rogers, 2003). Prior literature used these theories; however, the current study merged all the theories. The present study employed these theories to outline the theoretical framework for the adoption of ERP. Investigate the correlation between innovation in information technology, compatibility of task technology, attitudes, and the adoption behavior of ERP systems among small and medium-sized enterprises (SMEs) in Pakistan. The current study intends to contribute literature addressing issues and challenges in adopting ERP. Moreover, the influence of attitude in technology as a mediator could impact ERP adoption behavior, subsequently influencing the core relationship, particularly within Pakistan.

2 Theoretical Background and Hypothesis Development

2.1 Diffusion of Innovation Theory (DOI)

Diffusion is a process through which an idea is spread over time via specific networks between members of a social system, and an invention is a concept, activity, or entity viewed by an individual or other adoption unit as new (Rogers, 2003). The 1960s saw the expansion of distribution science in developed countries, including Africa, Asia, and Latin American countries. Various disciplines documented in literature inspire the diffusion principle; Anthropology was the first one involved. Early sociology, rural sociology, education, public health, medical sociology, communications, marketing, geography, and general sociology were other research traditions that led to the expansion of this theory (Rogers, 2003).

The dissemination of innovation theory aims to provide a methodological framework for people from any area involved in disseminating innovation to consider the social change and dissemination mechanism (Brown & Woodland, 1999). The theory focuses on various

components, including acceptance, technology assessment, and application. It recognizes both quantitative and qualitative approaches to assessing the potential rate of technology diffusion and acknowledges various factors that can either promote or impede the adoption and integration of technology (Fichman, 1992).

Agarwal and Prasad (1998) proposed the word personal innovation, which was hypothesized by implementing a digital framework to illuminate the experiences of technology acceptance models to explain moderating effects on people's behavior towards new technology. Agarwal and Prasad further argued that the difference between domain-specific, individual-specific, and global innovation under information technology is the ability of a participant to pursue new IT technologies. Theoretically, Karahanna et al. (1999) integrated the diffusion of creativity and attitude theories to analyze variations in values and attitudes before and after adoption. Their research offered an empirical analysis of the impacts of a detailed set of qualities for innovation on the adoption and use of behavior. In light of the above literature, diffusion of innovation theory (DOI) is significant for empirically examining technology adoption. Innovativeness in information technology is the core construct of the DOI theory; therefore, this study used innovativeness in information technology as an independent variable in the proposed model.

2.2 Innovativeness in Information Technology (INN IT)

In powdered information technology, innovativeness refers to a person's proclivity to adopt new technologies, willingness to try something new or experience something for novelty-seeking tendencies, offer the organization a long-term competitive edge and relatively early in adopting new systems (Rogers, 1995; Khalil et al., 2019; Hossain et al., 2019; Zwain, 2019).

Innovativeness positively and significantly affects firm performance; innovation enhances corporate processes, creates potential value, and provides access to intangible assets for businesses (Mai et al., 2023). Innovative practices positively and significantly impact both radical and incremental innovation performance. This underscores that engagement-focused approaches foster employees' technological innovation performance through technology adaptation and innovativeness (Rubel et al., 2023). Personal innovativeness had a positive and significant effect on the behavioral intention of individuals using mobile devices, which made it easy for them to personally (Aligarh et al., 2023). User innovativeness positively and significantly impacts digital health solutions, and technical competence and individual innovation are vigorously associated (Edo et al., 2023). On the other hand, Personal innovativeness did not have a positive and significant effect on behavioral intention to use video conferencing platforms in learning to interpret online (Yao, 2023).

The result of employee resources being welcomed and innovated by organizations is performance in incremental and radical technology innovation (Rubel et al., 2023). Technology innovation is among the most critical factors influencing physicians' willingness to adopt health services (Hossain et al., 2019). Organizations retain strong positions in the current market by continuously investing in innovation, which must be implemented in business processes and technology (Khalil et al., 2019). The evolution of the environment may be influenced by external factors, such as the impact of information technology on the nature of the interaction (Lecerf & Omrani, 2019). The adoption of information technology, online shopping, mobile radio-frequency identification services, and location-based services is influenced by innovativeness (Jang & Lee, 2018). Individuals with high innovativeness have a more technology acceptance model, which leads to quality that shows the inclination of consumers to try out new items (Moon et al., 2018).

Given the inconsistent results between innovativeness in information technology and ERP adoption behavior, further research is required to confirm the association in the context of underdeveloped countries like Pakistan. The current study proposed the following hypothesis:

Hypothesis 1: *Innovativeness in information technology is significant and positively associated with adopting ERP.*

Hypothesis 2: *There is a significant relationship between innovativeness in information technology and attitude towards adopting ERP.*

2.3 Task Technology Fit (TTF)

TTF connects task specifications, individual skills, and software structures (Goodhue & Thompson, 1995). TTF is an essential construct of user assessment in understanding and predicting the use of a specific technology (D'Ambra et al., 2013). TTF construct consists of various points of view on indicators regarding the use of technology in organizations and its actual use (Isaac et al., 2019). The task technology fit, defined as a high level of TTF, influenced their happiness (Wan et al., 2020). TTF refers to users' anticipation that the performance of a technology application will enhance as it tailors more closely to their particular requirements, operates more swiftly, remains consistently accessible, and maintains user-friendliness (Saxena & Kumar, 2020). Task characteristics refer to users' difficulty and need to manage their health interface designs (H. Wang et al., 2020). The degree to which technology helps individuals execute their duties is known as task technology fit (TTF) (Al-Rahmi et al., 2023).

The aggregate to which a system meets the demands of its users, matches their interests, and fits with their duties is called task-technology fit (Isaac et al., 2019). Dependent metrics like task performance and user pleasure are enhanced when the task requirements, views of one's skills, and the technology's usefulness are all in harmony (Erskine et al., 2019). The extent to which technology aids an individual in executing their job is called task technology fit (Vongjaturapat, 2018). TTF, or Technology Task Fit, denotes the correlation among job descriptions, an individual's skill set, and the functionalities of an application. TTF gauges how effectively technology empowers individuals to fulfill their assigned tasks (Goodhue & Thompson, 1995). The area in which a system meets its users' demands, matches their interests, and fits their duties is task-technology fit (Isaac et al., 2019). Depending on the participant's ability, the TTF and performance standards evaluation can vary in expertise in using computers and mobile devices and associated applications and experience and training in knowledge skills (D'Ambra et al., 2013).

TTF primarily influences user satisfaction, indirectly affecting continuous intention; thus, it is vital to build technology solutions that match the learners' learning goals and needs to engage with emotions, cognitions, and operations (Wan et al., 2020). ICT consultants and suppliers should ensure that the enterprise software can successfully carry out its intended functions, securely storing customer data and integrating existing systems, knowledge, and experiences (Awa & Ukoha, 2020). Continuously upgrading healthcare wearable devices and soliciting user input may help achieve a good task-technology fit (Wang et al., 2020).

Al-Rahmi et al. (2023) revealed a substantial and beneficial relationship between TTF and academic achievement and a significant correlation between TTF and student satisfaction. Awa & Ukoha (2020) suggested the constructs of TTF as antecedent variables and found that approximately 57 percent of the adoption of the Variance in enterprise systems (ES) was explained within the proposed framework. Dang et al. (2020) demonstrated that the impact of TTF on social media search systems substantially impacted user adoption. Wan et al. (2020) explained that TTF models analyze the determinants that influence the continued purpose and found that TTF indirectly affects performance expectancy, effort expectancy, social influence, and user satisfaction.

User satisfaction and actual technology usage cannot offer a picture without considering task characteristics and task-technology fit; both have been linked to enhanced technology adoption and usage intention, meaning that adding such attributes might result in competitive product

advantages (Erskine et al., 2019). The creation and validation of a task and technology construct in a model demonstrate the TTF model's efficacy in assessing the perceived fit of a smartphone to a library patron's task (Vongjaturapat, 2018). The TTF model allows users to adopt technological characteristics and task requirements, increasing the explanatory capacity (Wan et al., 2020). The TTF model includes individual, organizational, and social characteristics, as well as the scope to which the system hysterics an individual's needs and tasks (Isaac et al., 2019).

Khashan et al. (2023) reported and found a positive and significant association between TTF and performance expectancy; moreover, TTF positively affects shoppers' behavioral intention toward augmented reality application adoption in the retail context. Vongjaturapat (2018) concluded that the TTF model represents a beneficial effect of the role and technology in TTF for smartphones in a digital library environment and the output of individuals. Task technology fit has achieved a more detailed understanding of human characteristics affecting decision performance using different geospatial presentation theories to establish additional important constructs (Erskine et al., 2019). Cheng (2019) found that ECM constructs can be combined with other synergistic variables in the TTF model to forecast the continued role of the information system or information technology. Therefore, this study proposes that:

Hypothesis 3: *There is a significant and positive association between task technology fit adoption of ERP.*

Hypothesis 4: *A significant and positive association exists between task technology fit and attitude toward adopting ERP.*

2.4 Theory of Planned Behaviour (TPB)

As for the shortcomings of the theory of reasoned action, the TPB was projected (Ajzen, 1985). The TPB is an extension of the TRA. The TPB model discusses acts that occur without an individual's voluntary control. In contrast, the TPB was a generic behavior model that could be used with the TAM to investigate more extensive accepting settings (Ajzen, 1991). In particular, in addition to the portion of perceived behavioral regulation, the TPB varies from the TRA and can differ from one scenario to another. It also accounts for circumstances where an individual has less than complete control of movements (Ajzen, 1991). When behavioral reasons account for just a small portion of behavioral Variance, both motivations and perceived behavioral control (PBC) are relevant; yet when considering such conditions, one may be more significant than the other (Ajzen, 1991).

In cases where the prediction of motive behavior is likely to be avoided by existing law, the implementation of behavioral intentions should be promoted by perceived behavioral control (PBC), and actions should be explicitly forecast (Armitage & Conner, 2001). Consequently, PBC can implicitly predict behavioral achievement and intention (Ajzen, 1991). Other research that supports the difference between the two terms was also noted by Armitage and Conner (2001); White et al. (1994), and Manstead & Van Eekelen, (1998) argued that there are very different definitions of control and self-efficacy the cognitive perception of control is more concerned with self-efficacy (based on internal control factors). In contrast, PBC defines more general external influences (Armitage & Conner, 2001).

Self-efficacy describes purpose differences significantly better than PBC despite similar degrees of behavioral Variance; self-efficacy and PBC definitions suggest that TPB self-efficacy may be the best ratio of perceived power to result (Armitage & Conner, 2001). The definition of the PBC is not authentic to the TPB, and the relevant definition principles are present in other frameworks, such as Triandis's (1979) model of interpersonal action, which facilitated situations to solve specific PBC estimation problems (Ajzen, 1991). The other variables, likewise convention, perceived moral responsibility, and self-identity, could forecast actions and actions in the sense of

the TRA model. However, the TPB did not discuss these variables (Eagly & Chaiken, 1993).

The general level between self-efficacy and PBC should be translated as perceived power over behavioral success, and the phrase perceived behavioral influence should be translated as perceived power over behavioral success (Ajzen, 1991). In Bandura's philosophy, there is no inclination to restrict the confidence in self-efficacy to internal reasons, and there are models that are not without criticism, including TRA and TPB (Bandura, 1977).

The respondents have an identical value system when carrying out an activity; TRA & TPB models enable people to be compelled to perform a specific action because this presumption could be troublesome when analyzing customer acceptance behavior. Moreover, one variable, PBC, was implemented by TPB as a solution to all non-controllable behavioral features (Taylor & Todd, 1995). The Theory of Planned Behaviour (TPB) is an essential theory for the empirical investigation of technology adoption behavior in light of the literature above. Since the TPB theory's central concept is attitude, this study used attitude as a mediator to examine the mediation effect between the innovativeness in information technology and task technology fit on ERP adoption behavior.

2.5 Attitude (ATTD)

Attitude is derived from the theory of reasoned action (Ajzen & Fishbein, 1977) and the theory of planned behavior (Ajzen, 1991). The UTAUT model's key antecedents (TRA, TAM, and TPB) are articulated based on the theory that attitude is the primary mediator of predictor principles and behavioral intentions (Davis et al., 1989). Attitude is a vital factor underlying intention; behavioral reasoning also posits that reasons are linked to these primary global motives for human activity (Maswichian & Raju, 2021). Attitude is the individual's desirable or undesirable emotions toward a behavior (Maleksaeidi & Keshavarz, 2019). Attitude shows how people feel and think and are likely to behave concerning an entity or case, while attitude is a psychosomatic concept (Shiferaw & Mehari, 2019).

Attitude defines a consumer's favorable or unfavorable propensity toward technology (Moon et al., 2018). The employee's favorable or unfavorable thoughts about utilizing personal social media accounts for job-related devotions are called attitude (Mhina et al., 2018). Attitude toward conduct is defined as how the individual has a positive or negative view or judgment of the behavior in entreaty (Dwivedi et al., 2017). An individual has lovely or bad sentiments about doing the desired behavior (Davis et al., 1989; Ajzen & Fishbein, 1977; Taylor & Todd, 1995).

Hypothesis 5: *There is a significant relationship between attitude and ERP adoption behavior in SMEs of Pakistan.*

2.6 Mediating Role of Attitude Toward Technology (ATTD)

Ajzen & Fishbein (1977) developed the TRA to forecast the acceptance of information and estimate if users would or would not accept new technology. The fundamental constructs of plan behavior theory are behavioral attitude, subjective norm, and perceived behavioral control, and a wide variety of intentions and actions discussed in the TPB literature (Zamani-Miandashti et al., 2013). Many researchers (Liebenberg et al., 2018; Khalilzadeh et al., 2017; Dwivedi et al., 2019; Dwivedi et al., 2020) have taken the attitude as a mediator. Virmani et al. (2023) examined the function of attitude as a mediating factor in determining the connection between justifications for and against adopting I4.0. They found that attitude mediates between reasons against and intention while measuring the reasons against attitude mediation between value and attitude; full mediation effect was also observed. Ge et al. (2023) revealed that attitudes toward navigation systems entirely mediate the impact of trust on the desire to use navigation systems; similarly, perceived ease of use and perceived usefulness are both fully mediated by attitudes toward navigation systems. On the other hand, Attitude partially mediates the influence of subjective norms on the behavioural

use of fintech (Irimia-Diéguez et al., 2023).

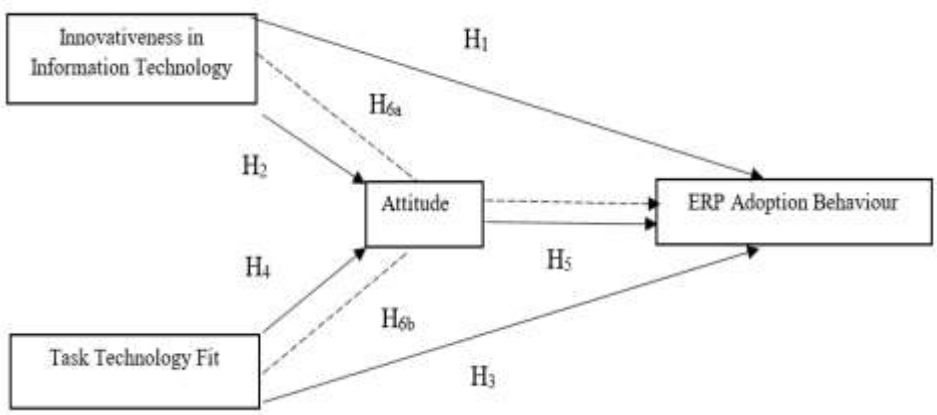
Attitude directly mediates views on user behavior, implying that individuals employ IS/IT-based innovation depending on their attitudes about the technology issue, even if they do not intend to (Dwivedi et al., 2020). Dwivedi et al. (2019) included user attitude in the basic model as a mediating construct. They found that it significantly increases the theoretical model's explanatory capacity, 38 percent to 45 percent, without behavioral intent and with attitude. Liebenberg et al. (2018) argued that the attitude as a mediator indicates that the data confirmed and validated the model used in this study, and as mediators of the model, SE and attitude are confirmed.

Raphael et al. (2018) extended the UTAUT model to assess the mediation effects of attitude on social influence and facilitating conditions. They found that facilitating conditions on behavioral intention is also strongly mediated by attitude. Khalilzadeh et al. (2017) analyzed security-related factors with the extension of the UTAUT model with the idea of attitude toward using technology as a mediator and hypothesized that the positive relationship mediates the attitude towards using technology positively and totally. Rana et al. (2017) argued that in terms of the improved attitude to behavioral intention relationship and the overall Variance explained by behavioral intention, the incorporation of attitude into three models (TRA, TPB, and DTPB) was displayed to be extremely important for their performance, proposed using attitude as mediating construct and found that implicit modeling of attitudes as mediating variable significantly increases the theoretical model's predictive model from 34% without attitude to 77% with it. This gap thus causes SMEs, particularly those in Pakistan, to need more knowledge of and understanding of the crucial role that attitude plays in behavior related to ERP adoption. We hypnotized that considering the suggestions above:

Hypothesis 6a: *Attitude mediates the relationship between innovativeness in information technology and ERP adoption behavior in SMEs of Pakistan.*

Hypothesis 6b: *Attitude mediates the association between task technology fit and the adoption of ERP.*

2.7 Research Model



3 Research Methodology

3.1 Questionnaire Design, Measures, and Data Collection

A self-administered questionnaire was used to collect the data using online resources. The

researcher requested that ERP solution providers send the questionnaire to the SMEs using ERP. Within 3 months, the researcher got 331 respondents. 84 respondents were excluded because they answered "No" to the question; either they were not using ERP or were fully operational. The demographics of respondents were presented in Table 3 (see annexture 1).

The research employed established survey scales crafted by prior studies. Each item was assessed using a five-point Likert scale, with responses ranging from 1 (strongly disagree) to 5 (strongly agree). There were two primary components to the questionnaire. The introduction and purpose of the research are covered in the first section. The respondents' demographic data was provided in the second part. The third, fourth, fifth, and sixth sections contained the variables and their related items. The questionnaire was adapted from (Chauhan & Jaiswal, 2016) for innovativeness in information technology, (Wang et al., 2012) for task technology fit, (Shaban & Alabboodi, 2013) for ERP adoption behavior, and attitude in technology respectively (Venkatesh et al., 2003).

3.2 Data Analysis & Results

3.2.1 Measurement Model

The research employed Structural Equation Modeling (SEM) with Partial Least Squares (PLS) and assessed the measurement model using internal consistency reliability, convergent validity, and discriminant validity. Composite reliability and Cronbach's Alpha evaluate the internal consistency of latent constructs. Table 4 shows that Alpha and CR values meet the threshold criteria of≥ 0.7 for alpha and ≥ 0.8 for CR. Average Variance Extracted (AVE) was used to assess the convergent validity. Table 4 shows that the AVE value for all the constructs is above the threshold value, i.e., 0.5.

Table 4: Measurement Model

Constructs	Items	Alpha	Loading	AVE	CR
Innovativeness in Information Technology	IIT1	0.808	0.830	0.648	0.849
	IIT2		0.557		
	IIT3		0.900		
	IIT4		0.886		
Task Technology Fit	TTF1	0.928	0.766	0.667	0.929
	TTF2		0.818		
	TTF3		0.803		
	TTF4		0.820		
	TTF5		0.826		
	TTF6		0.835		
	TTF7		0.832		
	TTF8		0.829		
Attitude	At1	0.903	0.851	0.775	0.905
	At2		0.876		
	At3		0.901		
	At4		0.892		
Adoption Behaviour	UB1	0.800	0.881	0.636	0.831
	UB2		0.859		
	UB3		0.572		
	UB4		0.859		

Three methods are used to examine the discriminant validity: cross-loadings, Fornel-Larker criterion, and the Heterotrait-Monotrait (HTMT) ratio. This study used the HTMT ratio to assess the discriminant validity because HTMT explains the data's 97% to 99% validity (Henseler et al., 2014). Table 5 shows that all the values are under the threshold of 0.85 or 0.90 (Ringle et al., 2018).

Table 5: Heterotrait-Monotrait (HTMT) Certain Test

Constructs	1	2	3	4
At				
IIT	0.775			
TTF	0.846	0.667		
UB	0.888	0.741	0.889	

3.2.2 Structural Model

After validating the measurement model, the structural model was assessed. Before testing the structural model, the multicollinearity of the data was analyzed. VIF value was evaluated to analyze multicollinearity. The threshold value of VIF is 3.3, and the results of VIF reported in Table 6, indicate that the values of latent constructs meet the threshold criteria (Ringle et al., 2018).

Table 6: Multicollinearity Results

Constructs	AT	IIT	TTF	UB
AT				3.051
IIT	1.512			1.839
TTF	1.512			2.556
UB				

Bootstrapping was used for the structural model, along with beta value, std—error, t-value, and effect size. Table 7 shows that all the direct relationships are significant, with t-values larger than 1.645 and a significant level less than 0.005. The relationship between attitude and ERP adoption behavior was significant with the ($\beta = 0.333$; p-value < 0.005), innovativeness in IT is positively related to ($\beta = 0.327$; p-value < 0.005), similarly innovativeness in IT is also positively related to ERP adoption behavior with the ($\beta = 0.118$; p-value < 0.005). Task technology fit has a significant positive impact on attitude with the ($\beta = 0.585$; p-value < 0.005); similarly, task technology fit is also significantly related to ERP adoption behavior with the ($\beta = 0.458$; p-value < 0.005). based on the results, all the direct hypotheses H1, H2, H3, H4, and H5 were approved.

Table 7: Summary of the Direct Relationship

Hypothesis	Std. Beta	Std. Error	t. value	P-values	Decision
AT > UB	0.333	0.077	4.346	0.00	Supported
IIT > AT	0.327	0.063	5.194	0.00	Supported
IIT > UB	0.118	0.047	2.491	0.013	Supported
TTF > AT	0.585	0.055	6.652	0.00	Supported
TTF > UB	0.458	0.075	6.145	0.00	Supported

Table 8 shows the results of mediating hypotheses. The results show that attitude plays a significant mediating role between the relationship of innovativeness in IT and ERP adoption behavior with ($\beta = 0.109$; p-value < 0.005); similarly, attitude also plays a significant mediating role between the relationship of task technology fit and ERP adoption behavior, with the t-values of 3.115, and 4.138 respectively. The results show that mediating hypotheses H6a and H6b were approved.

Table 8: Summary of the Mediating Variables

Hypothesis	Std. Beta	Std. Error	t. value	P-values	Decision
IIT > AT > UB	0.109	0.035	3.115	0.002	Supported
TTF > AT > UB	0.195	0.047	4.138	0	Supported

4 Discussion and Conclusion

This study examined the relationship between innovativeness in information technology and enterprise resource planning and task technology's fit with enterprise resource planning. The

overall study results confirm the significance of the hypothesized models and further extend the significance of empirics using the mediating effect. The first hypothesis (H1) posits that innovativeness in information technology holds a positive significant relation with the ERP adoption behavior, which confirms that the utilization of advanced skills overcomes the chance of errors and streamlines the business operations, improves the accuracy and efficiency of data management, enhanced reporting quality alongside cost reduction. By leveraging innovative IT solutions, organizations can improve operational efficiency, data management accuracy, and reporting quality while reducing costs. These results align with the literature and strengthen further to emphasize the use of ERP adoption (Kabra et al., 2017; Isaac et al., 2019).

The third hypothesis (H3) posits that task technology fit has a positive significant relationship with ERP adoption behavior, which endorses the importance of technology in business entities. These results are in line with the existing empirics (Awa & Ukoha, 2020; Wang et al., 2020) and confirm that the implementation of technology and ERP adoption enhanced productivity, reduced the time and efforts to produce products, created market competitiveness, increased cost efficiency which eventually impedes user satisfactions. This finding highlights the pivotal role of technology alignment with organizational tasks and objectives in driving ERP adoption. When technology complements organizational tasks effectively, it enhances productivity, reduces production time, improves market competitiveness, and increases cost efficiency, ultimately enhancing user satisfaction.

The results of the direct relationship between attitude and ERP adoption are confirmed to be positive and significant and aligned with the previous studies (Dwivedi et al., 2019; Maswichian & Raju, 2021). The relationship between the constructs reveals the attitude towards ERP adoption, which can significantly impact the adoption behavior of SMEs in Pakistan. A positive attitude towards adopting an ERP system increases the perception of benefits, reduces resistance to change, increases awareness and knowledge, and positively impacts the perception of costs, contributing to a successful adoption process.

In addition, consistent and extended with prior studies (Dwivedi et al., 2020; Liebenberg et al., 2018; Rana et al., 2017), we found that attitude positively and significantly mediates the relationship between innovativeness in information technology and ERP adoption behavior and task technology fit and ERP adoption behavior, respectively, which confirms that attitude captures the subjective evaluation of the perceived benefits of using an ERP system and influences adoption behavior. This mediation underscores the subjective assessment of the perceived benefits of ERP system usage. A positive attitude influences the perception of benefits and mitigates resistance to change, facilitating a smoother adoption process.

4.1 Implications and Limitations

The current study empirically contributes to the literature on adopting ERP among SMEs. This study extends the UTAUT model to encompass a broader spectrum of adoption behavior by incorporating four new factors: innovativeness in information technology, task technology fit, attitude, and trust in technology. Prior studies have found that the impact of behavioral purpose on use behavior would not be very significant or predictable, further reinforcing the importance of the interaction between attitude and usage behavior. At the same time, this study confirms that attitude is a significant predictor for a direct relationship between independent variables and adoption behavior. The significant relationship between task technology fit and attitude and adoption behavior showed that EER adoption satisfies the needs of its users' desires through the fulfillment of the TTF tasks. The findings suggest that the positive attitude of SME employees towards adopting ERP systems significantly improves the performance of SMEs and eventually will improve the adoption behavior. The findings suggest that SME employees with a positive attitude toward ERP adoption will be compelled to succeed, reap the benefits of the ERP adoption, and

achieve their business goals.

The study highlights the importance of investing in innovative IT solutions to facilitate ERP adoption. Businesses, particularly SMEs, can benefit from allocating resources to enhance IT capabilities to streamline operations, improve data management, and achieve cost efficiencies. Understanding the significance of task technology fit underscores the need for businesses to align technology solutions with organizational tasks and objectives. Organizations can enhance productivity, reduce production time, and improve market competitiveness by ensuring a solid alignment between technology and business processes.

Recognizing the mediating role of attitude in ERP adoption, organizations can focus on training and development programs to foster a positive attitude towards technology adoption among employees. By enhancing awareness, knowledge, and perception of benefits associated with ERP systems, businesses can mitigate resistance to change and promote a smoother adoption process. The study emphasizes the importance of addressing organizational attitudes toward technology adoption. Companies can develop change management strategies that emphasize the benefits of ERP systems, provide adequate training and support, and encourage employee participation to enhance acceptance and adoption rates.

The present study contributes empirical validation of the model and outline the theoretical and managerial aspects, subject to some limitations. The current study considered SMEs or individual employees who previously adopted the ERP system. Due to the lack of a sampling frame and the unavailability of data concerning SMEs' adoption of ERP systems in Pakistan, this study had to rely on reaching out to ERP providers and utilizing online resources for data collection. Therefore, the researcher observed small and medium-sized enterprises (SMEs), irrespective of their particular industry.

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6 Annexture 1

Table 1: Global Innovation Index Year 2020 (Comparison with Regional Countries)

	Pakistan	India	Iran	Sri Lanka
Overall Ranking	107	48	67	101
Political Environment	109	63	106	85
Education	124	107	83	118
Information & Communication Technologies (ICT)	111	74	80	90

Source: (Global Innovation Index 2020)

Table 2: Digital Adoption Index Year 2021 (Comparison with Regional Countries)

Country	Digital Adoption Index
Pakistan	0.39
India	0.51
Sri Lanka	0.47
Iran, Islamic Rep.	0.50
Oman	0.65
Kazakhstan	0.67
Thailand	0.61
Bhutan	0.44
Malaysia	0.69

Source: (Digital Adoption Index 2021)

Table 3: Demography

Profile	Frequency	Percentage
Gender		
Male	211	85.3%
Female	36	14.7%
Age		
Under 25	38	15.3%
26 to 35	121	48.8%
36 to 45	70	28.3%
46 to 55	16	6.6%
56 to onwards	2	1%
Education Level		
Bachelor	68	27.7%
Master	134	54.3%
MPhil	30	11.8%
Other	15	6.2%
Responsibility Level in the Company		
Top management	37	15%
Middle Management	96	39%
Lower Middle Management	39	15.9%
Employee	75	30.1%
Job Experience		
1 to 5 years	86	34.7%
6 to 10 years	66	26.9%
11 to 15 years	42	16.8%
16 to 20 years	28	11.3%
21 to 25 years	15	6.4%
26 to onwards	10	3.9%