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FEAR OF EXCLUSION: A PROTECTION MOTIVATION ANALYSIS OF DIGITAL PAYMENT ADOPTION IN RURAL INDIA

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Abstract

India's push toward digital payments, accelerated by the 2016 demonetisation, has framed Unified Payments Interface adoption as a marker of financial empowerment. Using survey data from 328 rural entrepreneurs in Kerala, this paper suggests that UPI adoption is more accurately understood as a fear-driven protective response. Drawing on Protection Motivation Theory, the study finds that UPI adoption is driven by fear of losing customers, general self-efficacy, and UPI-specific efficacy. Demographic characteristics including gender, age, education, and prior business failure do not affect the UPI adoption. Negative moderation effect of risk-taking ability on the relationship between UPI adoption and revenue growth indicates that lack of solid plan yields less revenue gains. While digital efficacy drives adoption, risk-taking functions as a mediator that weakens the link between self-efficacy and revenue growth. The study offers critical insights for policymakers designing digital inclusion strategies for the rural informal sector.

Keywords:

Digital Payments, UPI, Rural Entrepreneurship, Protection Motivation Theory, Digital Self-Efficacy

1. INTRODUCTION

India's shift to digital payments is seen as a success story that helps everyone join the banking system which gives people more control over their lives. For the rural entrepreneur, however, this transition was not born from a desire for technology. Instead, the systemic shock of the 2016 demonetisation birthed this shift. It engineered a liquidity crisis by abruptly withdrawing 86% of the currency in circulation that functioned as digital coercion. Within this challenging landscape, the adoption of Unified Payments Interface (UPI) functioned as a critical survival strategy for small-scale vendors to navigate the structural changes and liquidity constraints.

The Pradhan Mantri Jan Dhan Yojana (PMJDY), the foundational rails for India's digital payment revolution, is India's flagship National Mission for Financial Inclusion [1]. It is aimed at making the most vulnerable sections of society have affordable access to financial services. Since its launch in 2014, it has evolved from a goal of every household to every unbanked adult. By providing everyone with Jan Dhan, Aadhaar, and Mobile, the government established the foundation infrastructure of India's FinTech ecosystem. This transition from cash to digital is significant for rural entrepreneurs, who increasingly rely on UPI to maintain market relevance and meet customer expectations.

The PM Vishwakarma Scheme is a central sector initiative launched in September 2023 to provide end-to-end support to traditional artisans and craftspeople across 18 diverse trades [2]. The scheme offers collateral-free Enterprise Development Loans, PM Vishwakarma Certificate and ID Card, a toolkit incentive, skill upgradation and marketing support.

Even though these government programs try to help by pushing for more digital tools, rural business owners see new technology options as heavy burden and a necessary evil for their survival. If they do not change, they will simply be left behind by everyone else. Therefore, what was meant to be a way to give them more power ends up feeling like a mandatory task they must complete just to survive in the modern market.

Standard models of technology adoption do not capture this uneven power dynamic because the user is treated as a willing participant in a neutral marketplace. This study challenges that common narrative. We apply Protection Motivation Theory (PMT) not as a simple psychological model, but as a lens to examine how fear drives technology adoption in rural Kerala. Specifically, we look at the fear of economic exclusion. While Kerala is often praised for its high literacy and unique development model, our findings reveal a darker undercurrent. Digital adoption is being equalized across gender and age groups. This is driven by the fear of losing customers rather than by true empowerment.

The significance of this fear-driven adoption is profound. It suggests that the metrics used to measure the success of Digital India may be capturing compliance rather than capability. Additionally, our surprising discovery shows that being a high risk-taker can actually be a disadvantage. We found that business owners who rushed into using digital payments saw smaller increases in their income. This challenges the common belief that switching to digital tools always leads to better results. By showing how rural shopkeepers adopt technology just to avoid being left behind, it questions whether India's push for digital payments is helping rural entrepreneurs join the economy or if it is making them feel forced to participate to survive.

Protection Motivation Theory (PMT) [3] helps interpreting business owners' behaviours. According to PMT, responses to a threat depend on two factors: how severe the threat appears to be and how capable individuals feel of addressing it. If digital payments are not offered, is there a chance of losing customers ? Or adopting the payment system is a realistic way to manage that risk. The risk-taking ability in running a business is complex and requires a delicate balance. While risk-taking ability is often essential for innovation and growth, crossing the boundaries can cause financial distress or failure. This research analyses the role of risk-taking ability in enhancing revenue through UPI adoption among rural businesses. Grounded in PMT, it investigates the influence of threat and efficacy factors on UPI implementation. It further investigates risk-taking ability as a moderator in the self-efficacy-revenue relationship and as a mediator in the UPI implementation - revenue relationship.

2. LITERATURE REVIEW

Digital payments, cover a wide range of electronic transactions ranging from UPI and card payments to ATMs, Point of Sale (PoS) transfers, mobile-based services, and online banking. What makes these systems effective is the underlying clearance and settlement infrastructure that enables transactions to be completed securely and without long delays [4]. The history of non-physical currency transactions dates back to 1872 with the first wire transfer via telegraph; the first ATM arrived in the United Kingdom in 1967, followed by India's first ATM in Mumbai in 1987. The Reserve Bank of India (RBI) launched the Electronic Clearing Service (ECS) in 1990 to streamline bulk payments. As part of early financial digitisation efforts, the years 2004 and 2005 witnessed two transformative systems that enhanced the efficiency and reliability of interbank electronic fund transfers in India [5]. The RBI introduced the Payments and Settlement Systems Act in 2007, providing a framework that strengthened the emerging digital payments sector and improved efficiency in transactions. One key step that came soon after was the establishment of the National Payments Corporation of India (NPCI). This organisation has been central in making real-time bank transfers possible and in supporting payments for both individuals and businesses. Over time, the Unified Payments Interface (UPI) became the flagship product of this ecosystem. UPI's rise has been shaped not only by its ease of use and security features but also by wider events, most notably demonetisation and the COVID-19 pandemic, both of which pushed people toward cashless options. Yet, its reach across rural India has been far from uniform. Many villages still face obstacles. Weak internet access, limited digital skills, and little available technical support often make it difficult for small businesses to switch. Concerns about upkeep, taxation, and long-standing habits tied to traditional methods of exchange add further hesitation. Similar barriers are reported more broadly in rural enterprises. Problems with connectivity and gaps in digital know-how, in particular, remain common in village settings and compound these challenges. For some owners, digital platforms appear unnecessarily complicated, and the advantages are not always clear. Some business owners are also discouraged by the expenses they expect to incur and by doubts over whether the financial gains would offset those costs, which makes them less likely to adopt digital systems [6].

As the reach of UPI has grown, its advantages have become more apparent in day-to-day trade. Businesses that delayed adoption frequently find themselves at risk of losing customers to early adopters, who can offer faster and more convenient options [7]. In some cases, this creates a sense of exclusion, or what is often described as a fear of missing out, which affects not only business owners but also their customers. The risk of losing loyal customers has, in many cases, pushed business owners to adopt UPI more quickly.

Entrepreneurs who perceive greater risks tend to hold back from digital payments [8], whereas those with higher risk tolerance are more willing to experiment with UPI and similar tools. This openness to risk does not merely indicate flexibility; it also shows an awareness that adopting new technologies can, at least in some cases, create an edge over competitors [9].

2.1 PROTECTION MOTIVATION THEORY AS A LENS ON COERCED ADOPTION

Protection Motivation Theory (PMT), developed by Rogers [3] is used to explain why people or organisations take protective actions. At its core, the theory distinguishes between two kinds of appraisal: threat appraisal and coping appraisal. The first concerns how serious a risk is judged to be and how likely it is to happen. The second focuses on whether individuals believe they can deal with the risk. Coping appraisal itself draws on two elements: response efficacy, the belief that a given action will actually reduce the threat, and self-efficacy, the belief that one has the ability to carry out that action [10]. Researchers have drawn on PMT in a variety of contexts over time. In health behaviour studies, it has been used to explore how beliefs about disease severity and coping ability guide preventive actions [11]. Work on privacy risks shows a similar pattern, where fears of information loss and confidence in protective steps affect behaviour [12]. The model has also been extended to entrepreneurship, particularly in examining how risk perception and coping influence business choices [13]. In rural business settings, this perspective helps explain how the fear of losing customers interacts with confidence in tools such as UPI, shaping digital adoption decisions.

A small business owner in Kerala is not necessarily joining a digital revolution because they want to but because of the threat of being left out. In this light, threat appraisal is a measure of the anxiety caused by government policy. Coping is a survival strategy that forces them to participate to stay alive in the market. Response efficacy refers to the belief that adopting UPI can help keep customers, whereas self-efficacy is about an entrepreneur's confidence in learning and using the system.

2.2 THREAT APPRAISAL: RECOGNISING THE RISKS OF NON-ADOPTION

In rural markets, competition is often limited, which makes business owners more sensitive to what their peers are doing. News of a competitor starting to use digital payments often spreads quickly, moving through personal networks or popping up on social media. That visibility can make the change feel even more significant. Many business owners also worry about being seen as "behind the times," a concern that carries weight in communities where tradition matters but reputation does too.

For customers, the absence of a digital payment option can be enough to push them toward a rival shop that accepts UPI, an urban retailer, or even an e-commerce platform [14]. In smaller towns, word about these shortcomings travels fast. A store that comes across as inconvenient or hard to deal with may lose not just immediate sales but also the trust of its regular customers over time [15].

When nearby competitors introduce digital payments, the fear of missing out becomes even sharper for businesses that have yet to adapt. This fear motivates the rural business owners to implement digital payment options like UPI quickly. Therefore, we hypothesise that

H1: Fear of losing customers motivates rural business owners to implement UPI quickly.

Individuals with stronger self-efficacy usually approach risk as something that can be worked through, rather than as an obstacle that cannot be overcome [16]. This outlook shapes how they weigh the possible costs and advantages of adopting digital payment systems. Entrepreneurs who are confident in their own abilities are more willing to tackle issues such as technical glitches, training staff, or convincing customers to change their habits. A strong sense of capability often motivates people to try out new tools and keep at it, even if the first attempts feel discouraging [17]. Individuals with higher self-efficacy demonstrate resilience [18]. Instead of seeing difficulties purely as threats, they are more inclined to treat them as chances to learn and grow [19]. As Bandura [20] pointed out, this kind of outlook can make it easier to bounce back after a failure or setback.

In practical terms, such individuals look for relevant information, draft alternative courses of action, and take steps to deal with uncertainty [21]. This type of confidence can be especially valuable for rural entrepreneurs, as it supports their willingness to introduce digital payment solutions like UPI in order to strengthen their businesses.

H2: The self-efficacy of business owners motivates them to implement UPI quickly.

People tend to assess their self-efficacy before undertaking a task. Being able to complete a task by drawing on the necessary knowledge, skills, and mindset boosts motivation and persistence. In contrast, self-doubt can hold people back from even getting started or cause them to give up too early. Those who lack confidence may avoid challenging tasks altogether or give up easily when faced with obstacles. Implementing a technology product demands an understanding of technology, features, and benefits. UPI implementation demands the confidence of business owners in managing the challenges associated with UPI maintenance, understanding of how UPI works, helping customers if they have challenges during payment, understanding regulatory compliance, and mitigating risks associated with fraud [22]. Only if business owners feel they can deal with these tasks will be motivated to implement UPI. Business owners with greater UPI self-efficacy tend to successfully implement UPI, as they believe in their ability to overcome challenges and learn new skills [23]. Therefore, we posit that,

H3: Perceived UPI implementation efficacy motivates owners to implement UPI quickly.

Research shows that entrepreneurs take more risks than non-entrepreneurs [24]. Those with high achievement motivation are expected to succeed in their ventures. An entrepreneur's drive and determination often help them push through the many obstacles involved in starting and sustaining a business [25]. Earlier research highlights a positive connection between achievement motivation and business outcomes [26]. Those with stronger motivation to achieve are often quicker to notice opportunities and act on them [27]. They may also show higher sales performance [28] and, in some cases, even contribute to creating new jobs [29]. Beyond motivation, a willingness to take risks is equally important for entrepreneurial success [30]. Business owners who are more at ease with risk not only pursue new opportunities but are also more willing to experiment with innovations such as digital payment systems. Thus, we posit that

H4: Risk-taking ability of business owners motivates the implementation of UPI.

Entrepreneurs who have a stronger sense of self-efficacy often set more ambitious goals for themselves. They are also more likely to take concrete steps toward meeting those goals, which can translate into better sales performance. This robust sense of self-assurance can occasionally develop into overconfidence. But this overconfidence is risky [31] as they may underestimate market challenges, misjudge financial risks, or overcommit resources, which could result in negative consequences. Thus, the capacity for risk-taking may serve as a mediator by influencing the translation of self-efficacy into entrepreneurial actions, thereby diminishing its direct positive effect.

H5a: Risk-taking ability mediates between self-efficacy and revenue.

H5b: Risk-taking ability negatively moderates self-efficacy and revenue relation.

Early adoption of a new technology can lead to a first-mover advantage [32] but subsequent risk-taking, if not calculated, can lead to a decline in revenue [31]. Digital payment technologies improve profit by enhancing consumer engagement, optimising inventory management, and generating sales possibilities that fit with cashless preferences. In crises like COVID-19, digital payments enhance sales by minimising transaction costs, decreasing errors, and reducing reliance on cash. Early adopters gained benefits that lasted over time, while those who turned to digital payments during the pandemic saw more immediate rewards [33]. By making transactions faster, safer, and easier for customers, digital payments not only improve convenience and security but also strengthen competitiveness, support revenue growth, and contribute to long-term sustainability [34].

H6a: Risk-taking ability mediates the relationship between quick implementation of UPI and revenue

H6b: Risk-taking ability negatively moderates the relationship between quick implementation of UPI and revenue.

3. METHODOLOGY

3.1 SAMPLING

A structured questionnaire was translated into Malayalam from English to enhance clarity and accessibility for rural business owners whose primary language is Malayalam. To further guarantee linguistic and conceptual equivalence with the original scales, the translated questionnaire was converted back to English by independent bilingual experts. The final Malayalam version was administered to participants, with researchers explaining any questions to address doubts and ensure accurate responses. This study utilised a purposive sampling method; participants were selected based on two criteria: individuals who are small business owners which operates from the rural areas in Kerala. For this study, Rural areas include not only those that are administratively governed under Panchayath, but also include small and medium towns, considering the distinctive settlement pattern of Kerala, characterised by a rural-urban continuum [35]. Data was collected from 350 individuals, and 328 responses were validated and accepted for analysis (Table.1).

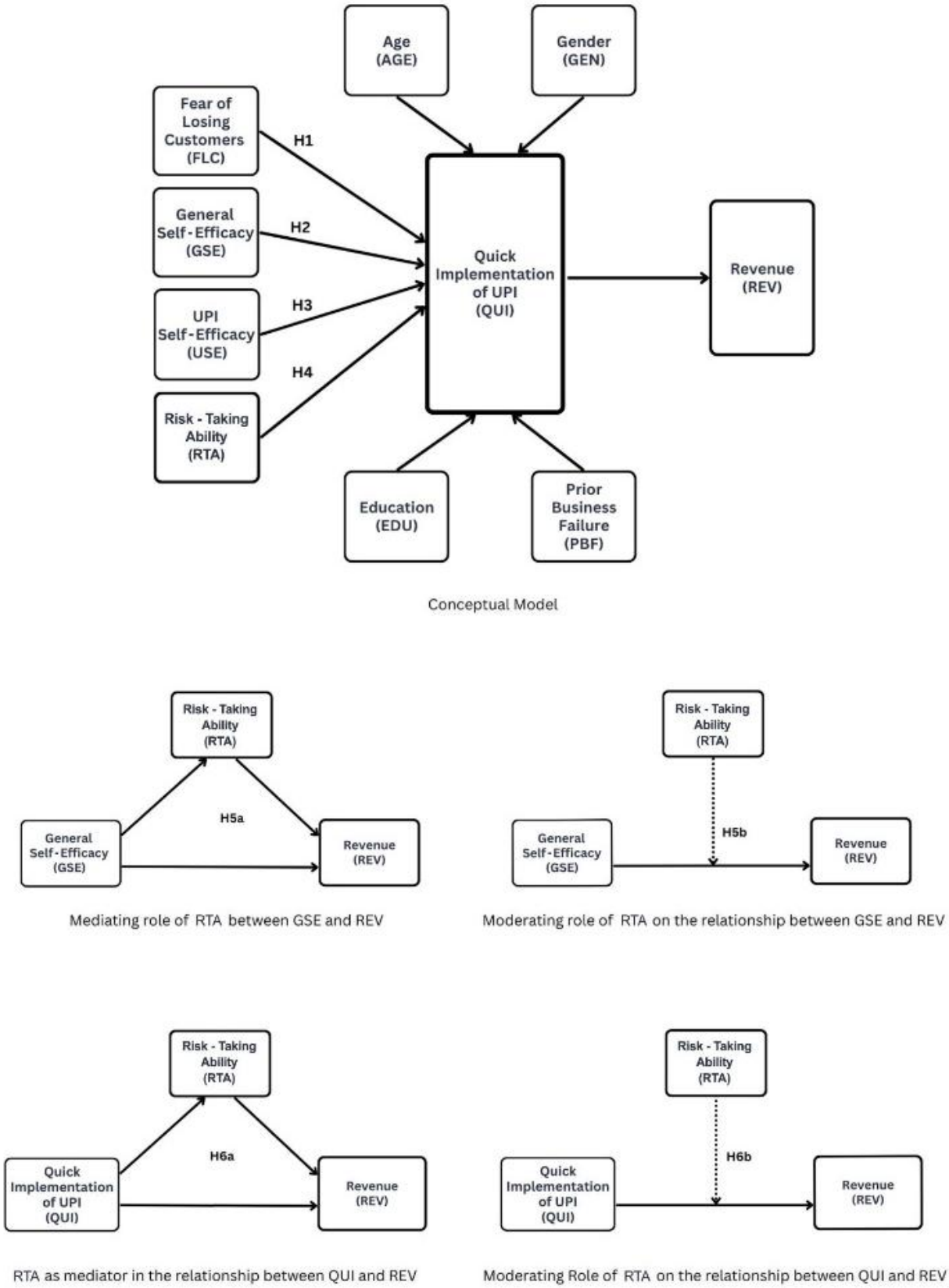

Fig.1. Conceptual Model

Table.1. Demographic and educational profile of participants

Category	Sub-category	Sample size	Percentage (%)
Gender	Male	251	76.5
	Female	77	23.5
Educational Qualification	No formal education	7	2.1
	Primary school	7	2.1
	Upper primary school	20	6.1
	High school	72	22
	Higher secondary	125	38.1
	College or University degree	85	25.9
	Post-graduation or higher	12	3.7

3.1.1 Socioeconomic Profile of the Rural Entrepreneurial Sample

The empirical strength of this study lies in its focus on the informal and nano business sectors of rural Kerala. Socioeconomic profile of the participants are shown in Table 2.

Table.2. Socioeconomic profile of the participants

Category	Subcategory / Detail	Value / Finding
Occupational Diversity	Kirana and General Stores	34.20%
	Vegetable and Fruit Vendors	22.10%
	Small-scale Service Providers	18.40%
	Artisans and Traditional Craftspeople	15.30%
	Others	10%
Revenue and Business Scale	Annual Turnover < ₹5 Lakhs	Over 60% of sample
	Typical Transaction Range	₹10 – ₹500
Longevity and Experience	In business for over 10 years	~45% of respondents
	Businesses started post-2020	Only 12%

3.2 MEASUREMENT

Scale particulars are summarised in Table 3.

3.2.1 UPI Efficacy Scale:

Digital Self-efficacy scale measures individuals' confidence in using digital technology, including UPI Self-Efficacy (USE). The scale measures five core elements: technical knowledge, operational proficiency, customer service capability, regulatory awareness, and risk management competence, and it was developed based on Ulfert-Blank and Schmidt [36].

Table.3. Measurement scales, reliability and validity measures

Measurement Scale	Constructs	Items	Loadings	Cronbach's alpha	CR	AVE
UPI Efficacy Scale	UPI Self-Efficacy	USE 1	0.945	0.947	0.96	0.827
		USE 2	0.896			
		USE 3	0.91			
		USE 4	0.895			
		USE 5	0.899			
Risk Taking Ability Scale	Risk Taking ability	RTA 1	0.941	0.933	0.933	0.737
		RTA 2	0.811			
		RTA 3	0.828			
		RTA 4	0.849			
		RTA 5	0.856			
General Self-Efficacy Scale	General Self-efficacy	GSE 1	0.874	0.917	0.917	0.689
		GSE 2	0.827			
		GSE 3	0.828			
		GSE 4	0.819			
		GSE 5	0.801			
Fear of Losing Customers Scale	Fear of Losing Customers	FLC 1	0.966	0.979	0.979	0.903
		FLC 2	0.938			
		FLC 3	0.951			
		FLC 4	0.952			
		FLC 5	0.945			
Fear of Losing Customers (FLC), General Self-efficacy (GSE), Risk Taking ability (RTA), UPI Self-Efficacy (USE)						

3.2.2 Risk-Taking Ability Scale:

The two components of the risk-taking ability (RTA) scale are the Achievement Motivation Scale [37] and the Entrepreneurial Motivation Scale [38]. The scale incorporates dimensions such as persistence, aspiration, calculated risk-taking, and competence awareness from the former and intrinsic and extrinsic motivational factors from the latter.

3.2.3 General Self-Efficacy Scale:

Dimensions of this scale include confidence in problem-solving, adaptability, persistence, emotional regulation, and proactivity and was modified from Schwarzer and Jerusalem [39].

3.2.4 Fear Of Losing Customers' Scale:

Fear of losing customers (FLC) measures the intensity of the fear from the Risk Behaviour Diagnostic Scale [40]

4. DATA ANALYSIS

PLS-SEM, partial least squares structural equation model, which sets less rigorous standards for sample size and the residuals profile [41] was employed. PLS-SEM is efficient at analysing intricate correlations among variables, even with modest sample sizes. It is well suited for complex or unobservable (latent) constructs [42]. Evaluation of the coherence of the measurement scales was analysed using Cronbach's alpha. HTMT (Heterotrait- Monotrait) test [43] is done to ensure the constructs are not conflated with one another there by establishing discriminant validity (Table 4).

As depicted in Fig.2, the Structural Equation Modelling (PLS-SEM) analysis explained 66% of the variance in UPI adoption speed ($R^2 = 0.66$), indicating strong explanatory power.

The fear of losing customers is significantly and positively linked to the quick implementation of UPI (QUI). ($\beta = 0.18$, $p < 0.01$), suggesting that the higher fear of customer loss is associated with the quick implementation of UPI systems by the business owners, thereby supporting Hypothesis 1. General Self-Efficacy likewise has a significant and positive effect on Quick UPI adoption ($\beta = 0.10$, $p = 0.03$), which means that individuals with high confidence traits adopt UPI fast. This finding confirms Hypothesis 2. UPI self-efficacy is the most influential determinant of a faster UPI adoption ($\beta = 0.66$, $p < 0.01$), which suggests that the business owners with more confidence in their UPI-related capabilities would implement UPI promptly, thus supporting Hypothesis 3. Risk-taking ability did not demonstrate a meaningful association with the speed of UPI implementation ($\beta = 0.03$, $p = 0.27$) and rejects Hypothesis 4. The other variables, Gender (GEN), Age (AGE), Education (EDU), and prior business failure (PBF), did not show any significant effect on Quick UPI implementation. The results of this structural equation model supported Hypotheses 1, 2, and 3 and rejected Hypothesis 4.

Table.4. Discriminant Validity- HTMT

Item	FLC	GSE	USE	RTA
FLC				
GSE	0.058			
USE	0.359	0.292		
RTA	0.101	0.648	0.333	

Fear of Losing Customers (FLC), General Self-Efficacy (GSE), Risk Taking Ability (RTA), UPI Self-Efficacy (USE).

A mediation analysis investigated whether the business owner's risk-taking ability mediates the relationship between General Self-efficacy and Revenue (REV). The results indicated that GSE positively influences REV ($\beta = 0.25$, $p < 0.01$), suggesting that greater self-efficacy is associated with improved revenue outcomes. RTA positively correlates with GSE ($\beta = 0.59$, $p < 0.01$), meaning that people who have self-efficacy traits tend to engage in risky behaviors. RTA positively influences REV ($\beta = 0.21$, $p < 0.01$), implying that a greater risk-taking ability contributes to better revenue performance. Since unmediated and mediated effects are significant, there is partial mediation between GSE and REV as supported by Hypothesis 5a.

The relation between GSE and REV is negatively moderated by RTA ($\beta = -0.15$, $p < 0.01$). The positive influence of GSE on REV is contingent upon RTA. This confirms Hypothesis 5b.

The mediation outcome of risk-taking ability between the Quick Implementation of UPI and Revenue was examined. The results reveal that quicker UPI adoption in businesses leads to an increase in revenue ($\beta = 0.216$, $p=0.001$). QUI also positively influenced Business Owners' risk-taking ability ($\beta= 0.28$, $p < 0.01$), explaining that owners who implemented UPI early were more ready to take risks in the business. Notably, RTA positively influenced REV ($\beta = 0.28$, $p < 0.01$). The significant direct and indirect effects confirm that RTA partially mediates the relationship between QUI and REV, thereby supporting Hypothesis 6a.

A moderation analysis shows a positive and significant direct relationship between QUI and REV ($\beta = 0.22$, $p < 0.01$), is negatively moderated by RTA ($\beta = - 0.18$, $p < 0.01$). This finding supports Hypothesis 6b and indicates that RTA moderates the relationship between QUI and REV by weakening the positive effect of UPI adoption on revenue.

5. DISCUSSION

The quick implementation of UPI in rural businesses appears to be driven primarily by the perceived threat of customer loss and confidence in one's general and UPI-specific abilities. This finding matches with previous studies on fear impacting technology adoption [44] and efficacy influencing technology adoption [45]. Based on the protection motivation theory, this research pointed out the mediating and moderating influence of risk-taking ability in the association between quick UPI adoption and revenue. While risk-taking ability plays a role in translating general self-efficacy into higher revenue, its influence on the UPI adoption was not significant. The positive relation between risk-taking ability and revenue is also shown in previous studies [46]. These findings shed light on how digital payment adoption can be encouraged in rural economies, particularly by addressing fears of losing customers and by strengthening both general and technology-specific efficacy among business owners. Interestingly, demographic factors such as gender, age, education, and even prior business failure did not appear to significantly affect how quickly UPI was taken up. Previous studies have shown mixed evidence on the link between prior business failure and technology adoption with some reporting a negative relationship [47] and others a positive one [48].

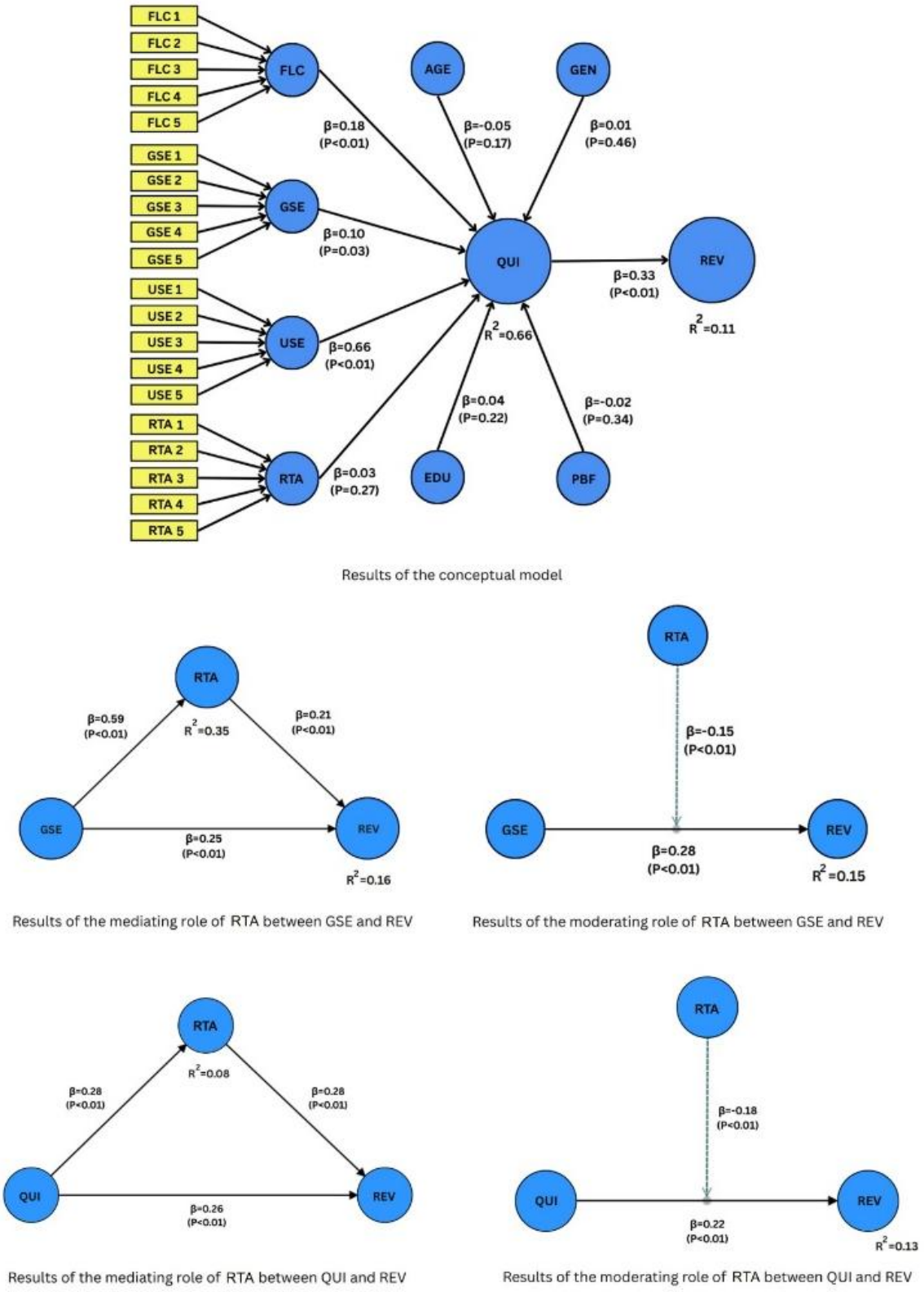

Fig.2. Structural Equation Model

One possible reason for these contrasting results is that moderating variables such as resilience, institutional support, or local market dynamics were not considered, even though they likely shape how past failures influence future adoption decisions.

The lack of a significant direct effect of risk-taking ability on UPI adoption may also reflect Kerala's rural cultural setting, where cautious and low-risk business practices are often valued. This environment can dampen entrepreneurs' willingness to act

on their own risk-taking tendencies, even when they score high on such traits.

While the study provides important insights into the drivers of UPI adoption among rural entrepreneurs, it should be noted that the findings are specific to this context. Kerala's higher literacy rates, relatively advanced health and education indicators, and distinctive settlement patterns may influence technology adoption behaviours differently compared to rural communities in northern or central India. Subsequent studies may test the model across diverse rural regions with varying levels of literacy, digital infrastructure, and entrepreneurial culture to assess its broader applicability

6. CONCLUSION

This study reveals that the fear of losing customers, acting as a salient perceived threat, and the dual facets of self-efficacy; both general and UPI specific, are primary catalysts for quick UPI implementation among rural business owners. Fear of losing customers influenced UPI adoption by shaping the threat component, a key tenet of PMT. The perceived vulnerability to negative consequences, which is customer loss, motivates a protective response, which is UPI adoption. Self-efficacy and UPI efficacy influenced UPI adoption by shaping the coping component, another key tenet of PMT. The findings affirm the critical utility of the PMT framework in elucidating the mechanisms by which perceived threat, response efficacy, and self-efficacy facilitate technology adoption.

Policy implications of this study is that, as the state continues to push for a cashless economy, policy frameworks could account for the psychological and structural threats that currently drive the rural informal sector toward digital platforms. When rural entrepreneurs adopt UPI primarily due to the fear of losing customers, the resulting inclusion metric by PMJDY schemes shows the fear driven compliance rather than financial empowerment. In such cases, PMJDY reporting could expanded to include Digital Stress Indices. Our findings regarding the neutrality of demographic variable suggest that Vishwakarma scheme could provide subsidized transaction insurance or offline-capable digital tokens to offset the revenue loss. Our finding that UPI Self-Efficacy is the strongest predictor of adoption behavior has profound implications for the National Initiative for Proficiency in Reading with Understanding and Numeracy (NIPUN) and DigiShala initiatives. DigiShala could shift its curriculum toward Financial Resilience Training. Policy must ensure that the transition to UPI is an act of empowerment that respects the pace of the rural entrepreneur.

By demonstrating that perceived customer loss functions as a salient threat appraisal and that both general and domain-specific self-efficacy shape coping appraisals, the research affirms the multidimensional relevance of PMT in low-resource entrepreneurial rural environments. It contributes to the theoretical understanding of technology adoption behaviour by framing it not only as an economic decision but also as a protective response to perceived business risks. The distinction between general self-efficacy and UPI-specific efficacy advances the theoretical discourse on efficacy constructs within the PMT framework and highlights the need for domain-sensitive adaptations of behavioural models in technology adoption research.

From a practical standpoint, designing awareness campaigns and training modules that leverage perceived customer expectations as a motivator for technology adoption seem to be necessary. For rural business owners, building both general confidence with digital tools and practical skills in handling UPI remains important. Policy efforts and fintech initiatives can be more effective when they not only demonstrate the concrete risks of staying offline such as losing customers but also strengthen entrepreneurs' belief that they can manage these systems successfully. Such approaches could support wider use of digital payments in rural areas and also encourage progress toward financial inclusion and rural development.

REFERENCES

[1] P.K. Nimbrayan, N. Tanwar and R.K. Tripathi, "Pradhan Mantri Jan Dhan Yojana (PMJDY): The Biggest Financial Inclusion Initiative in the World", *Economic Affairs*, Vol. 63, No. 2, pp. 583-590, 2018.

[2] Ministry of Micro Small and Medium Enterprises, "PM Vishwakarma Guidelines for Implementation", Available at https://rdsdejharkhand.dgt.gov.in/sites/default/files/2023-09/PM%20Vishwakarma-Guidelines-final%20%282%29_compressed.pdf, Accessed in 2023.

[3] R.W. Rogers, "A Protection Motivation Theory of Fear Appeals and Attitude Change", *The Journal of Psychology*, Vol. 91, No. 1, pp. 93-114, 1975.

[4] Shailza and M.P. Sarkar, "Literature Review on Adoption of Digital Payment System", *Global Journal of Enterprise Information System*, Vol. 11, No. 3, pp. 62-67, 2019.

[5] S. Raju and M. Balakrishnan, "Nowcasting Economic Activity in India using Payment Systems Data", *Journal of Payments Strategy and Systems*, Vol. 13, No. 1, pp. 72-81, 2019.

[6] N. Van Phuong, L.T.B. Ngoc, T. Van Hiep and L.T. Cuc, "Barriers toward the Adoption of Mobile Payment for Vietnamese Consumers in Rural Areas", *Multidisciplinary Science Journal*, Vol. 7, No. 2, pp. 1-11, 2025.

[7] R. Joshi, "Can Regulated Technological FOMO be used to Enhance Technology Adoption at the Bottom of the Pyramid?", *Journal of Science and Technology Policy Management*, Vol. 16, No. 9, pp. 1610-1632, 2024.

[8] A.K. Banerjee and H.K. Pradhan, "Influence of Demographic Profiles in Adoption of Digital Payment System in India: A Multigroup Invariance Analysis", *Technology Analysis and Strategic Management*, Vol. 36, No. 10, pp. 2285-2301, 2024.

[9] H.F. Tsai and C.J. Luan, "What Makes Firms Embrace Risks? A Risk-Taking Capability Perspective", *Business Research Quarterly*, Vol. 19, No. 3, pp. 219-231, 2016.

[10] J.E. Maddux and R.W. Rogers, "Protection Motivation and Self-Efficacy: A Revised Theory of Fear Appeals and Attitude Change", *Journal of Experimental Social Psychology*, Vol. 19, No. 5, pp. 469-479, 1983.

[11] S. Milne, P. Sheeran and S. Orbell, "Prediction and Intervention in Health-Related Behavior: A Meta-Analytic Review of Protection Motivation Theory", *Journal of*

Applied Social Psychology, Vol. 30, No. 1, pp. 106-143, 2000.

[12] R. Sundaram and S. Shetty, "Privacy Concerns and Protection Behavior during the Covid-19 Pandemic", *Problems and Perspectives in Management*, Vol. 20, No. 2, pp. 57-70, 2022.

[13] R. Sundaram, S. Shetty and P. Palakkeel, "Factors Increasing Entrepreneurs' Loss Concerns and Role of Startup Accelerators in Loss Protection", *Problems and Perspectives in Management*, Vol. 20, No. 4, pp. 422-435, 2022.

[14] H. Kumar and R. Sofat, "Analysing Consumer Behaviour by Integrating Digital Payment Awareness into the UTAUT Model", *International Journal of Electronic Finance*, Vol. 13, No. 2, pp. 139-167, 2024.

[15] V. Kaura, C.S.D. Prasad and S. Sharma, "Service Quality, Service Convenience, Price and Fairness, Customer Loyalty and the Mediating Role of Customer Satisfaction", *International Journal of Bank Marketing*, Vol. 33, No. 4, pp. 404-422, 2015.

[16] C. Zhou, X.D. Yue, X. Zhang, F. Shangguan and X.Y. Zhang, "Self-Efficacy and Mental Health Problems during COVID-19 Pandemic: A Multiple Mediation Model based on the Health Belief Model", *Personality and Individual Differences*, Vol. 179, pp. 1-9, 2021.

[17] A. Bandura, W.H. Freeman and R. Lightsey, "Self-Efficacy: The Exercise of Control", *Journal of Cognitive Psychotherapy*, Vol. 13, No. 2, pp. 158-166, 1999.

[18] R. Sundaram, S. Shetty and P. Palakkeel, "Informal Learning for Employees' Protection Behavior in Organizations", *Development and Learning in Organizations: An International Journal*, Vol. 37, No. 6, pp. 12-14, 2023.

[19] N. Krueger and P.R. Dickson, "How Believing in Ourselves Increases Risk Taking: Perceived Self-Efficacy and Opportunity Recognition", *Decision Sciences*, Vol. 25, No. 3, pp. 385-400, 1994.

[20] A. Bandura, "Self-Efficacy: Toward a Unifying Theory of Behavioral Change", *Psychological Review*, Vol. 84, No. 2, pp. 191-215, 1977.

[21] S. Lippke, A.U. Wiedemann, J.P. Ziegelmann, T. Reuter and R. Schwarzer, "Self-Efficacy Moderates the Mediation of Intentions into Behavior via Plans", *American Journal of Health Behavior*, Vol. 33, No. 5, pp. 521-529, 2009.

[22] V. Mani, M. Ramachandran, K. Rajan, K. Ellangovan, V.V. Subramanian and T.V. Suganeswari, "Unraveling Consumer Perception towards UPI in India: An Empirical Research", *Communications in Computer and Information Science*, Vol. 34, pp. 162-169, 2024.

[23] S. Barakat, M. Boddington and S. Vyakarnam, "Measuring Entrepreneurial Self-Efficacy to Understand the Impact of Creative Activities for Learning Innovation", *The International Journal of Management Education*, Vol. 12, No. 3, pp. 456-468, 2014.

[24] A. MacKo and T. Tyszka, "Entrepreneurship and Risk Taking", *Applied Psychology*, Vol. 58, No. 3, pp. 469-487, 2009.

[25] C.J. Collins, P.J. Hanges and E.A. Locke, "The Relationship of Achievement Motivation to Entrepreneurial Behavior: A Meta-Analysis", *Human Performance*, Vol. 17, No. 1, pp. 95-117, 2004.

[26] M.W. Staniewski and K. Awruk, "Entrepreneurial Success and Achievement Motivation-A Preliminary Report on a Validation Study of the Questionnaire of Entrepreneurial Success", *Journal of Business Research*, Vol. 101, pp. 433-440, 2019.

[27] T.K. Maran, A.K. Bachmann, C. Mohr, T. Ravet-Brown, L. Vogelauer and M. Furtner, "Motivational Foundations of Identifying and Exploiting Entrepreneurial Opportunities", *International Journal of Entrepreneurial Behaviour and Research*, Vol. 27, No. 4, pp. 1054-1081, 2021.

[28] R. Rajabi, T. Brashear-Alejandro and C. Chelariu, "Entrepreneurial Motivation as a Key Salesperson Competence: Trait Antecedents and Performance Consequences", *Journal of Business and Industrial Marketing*, Vol. 33, No. 4, pp. 405-416, 2018.

[29] A. Lecuna, B. Cohen and R. Chavez, "Characteristics of High-Growth Entrepreneurs in Latin America", *International Entrepreneurship and Management Journal*, Vol. 13, No. 1, pp. 141-159, 2017.

[30] A. Danso, S. Adomako, J.O. Damoah and M. Uddin, "Risk-Taking Propensity, Managerial Network Ties and Firm Performance in an Emerging Economy", *Journal of Entrepreneurship*, Vol. 25, No. 2, pp. 155-183, 2016.

[31] A.T. Robinson and L.D. Marino, "Overconfidence and Risk Perceptions: Do They Really Matter for Venture Creation Decisions?", *International Entrepreneurship and Management Journal*, Vol. 11, No. 1, pp. 149-168, 2015.

[32] J. Efendi, M.R. Kinney, K.T. Smith and L.M. Smith, "Marketing Supply Chain using B2B Buy-Side Ecommerce Systems: Does Adoption Impact Financial Performance?", *Academy of Marketing Studies Journal*, Vol. 17, No. 2, pp. 57-84, 2013.

[33] N. Dutta, S. Kar and S. Guha, "Informal Sector in India and Adoption of Digital Technologies", *Indian Growth and Development Review*, Vol. 16, No. 3, pp. 230-246, 2023.

[34] T. Puschmann, "Fintech", *Business and Information Systems Engineering*, Vol. 59, No. 1, pp. 69-76, 2017.

[35] M. Eapen, "Economic Diversification in Kerala: A Spatial Analysis", Available at file:///C:/Users/user/Downloads/wp293.pdf, Accessed in 1999.

[36] A.S. Ulfert-Blank and I. Schmidt, "Assessing Digital Self-Efficacy: Review and Scale Development", *Computers and Education*, Vol. 191, pp. 1-23, 2022.

[37] H.J. Hermans, "A Questionnaire Measure of Achievement Motivation", *Journal of Applied Psychology*, Vol. 54, No. 4, pp. 353-363, 1970.

[38] Y. Robichaud, E. McGraw and R. Alain, "Toward the Development of a Measuring Instrument for Entrepreneurial Motivation", *Journal of Developmental Entrepreneurship*, Vol. 6, No. 2, pp. 189-201, 2001.

[39] R. Schwarzer and M. Jerusalem, "General Self-Efficacy Scale", *Measures in Health Psychology: A User's Portfolio*, Vol. 9, pp. 35-37, 2012.

[40] K. Witte, "Predicting Risk Behaviors: Development and Validation of a Diagnostic Scale", *Journal of Health Communication*, Vol. 1, No. 4, pp. 317-342, 1996.

[41] W.W. Chin, B.L. Marcelin and P.R. Newsted, "A Partial Least Squares Latent Variable Modeling Approach for Measuring Interaction Effects: Results from a Monte Carlo Simulation Study and an Electronic-Mail Emotion/Adoption Study", *Information Systems Research*, Vol. 14, No. 2, pp. 189-217, 2003.

[42] S. Prasad, Y. Sharma and A. Suri, "Dynamics of Technology Adoption during Street Vendors Acceptance of Digital Payment Apps: An Extension of UTAUT2 using PLS-SEM", *Vision: The Journal of Business Perspective*, Vol. 76, pp. 1-7, 2023.

[43] J. Henseler, C.M. Ringle and M. Sarstedt, "A New Criterion for Assessing Discriminant Validity in Variance-based Structural Equation Modeling", *Journal of the Academy of Marketing Science*, Vol. 43, No. 1, pp. 115-135, 2015.

[44] A.C. Johnston, M. Warkentin and J. Warkentin, "Fear Appeals and Information Security Behaviors: An Empirical Study", *MIS Quarterly*, Vol. 34, No. 3, pp. 549-566, 2010.

[45] S. Kulviwat, G.C. Bruner and J.P. Neelankavil, "Self-Efficacy as an Antecedent of Cognition and Affect in Technology Acceptance", *Journal of Consumer Marketing*, Vol. 31, No. 3, pp. 190-199, 2014.

[46] J. Radomska, P. Wołczek and A. Szpulak, "Injecting Courage into Strategy: The Perspective of Competitive Advantage", *European Business Review*, Vol. 33, No. 3, pp. 505-534, 2021.

[47] P.M. Veiga, S. Marnoto, M. Guerra-Mota and G. Rexhepi, "Building New Business Models in MSMEs: Digital Capabilities, Global Value Chains Integration and the Moderating Role of Entrepreneurial Failure", *Journal of Small Business and Enterprise Development*, Vol. 31, No. 3, pp. 492-514, 2024.

[48] H. Wang, W. Wu and C. Zhang, "Bouncing Back from Failure: Digital Technology Capability, Entrepreneurial Alertness and Re-Entry Intention", *Asia Pacific Journal of Management*, Vol. 42, pp. 197-232, 2023.