"Scan & Pay" : Developing a Conceptual Model on "Intention to Adopt" UPI Payment Apps by the Unorganized Retail Sector Using the Extended Valence Theory (EVT)

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Abstract

Purpose : Despite the government's efforts to endorse a cashless economy, the adoption rate of digital payment methods, such as unified payment interfaces (UPI), remained low in the unorganized Indian retail sector. This research paper investigated positive and negative factors that impacted the intention to adopt UPI payment apps by unorganized retailers. It also developed a conceptual model to explain the adoption intention of UPI payment apps with the help of extended valence theory (EVT).

Design/Methodology/Approach : A qualitative study was conducted using NVIVO-15 software to develop a conceptual model based on EVT. Forty-five semi-structured, in-depth interviews with unorganized retailers were executed using the snowball sampling technique.

Findings : A conceptual model was developed to analyze the factors influencing the adoption intention of UPI payment apps. The study identified several positive and negative valences, along with the trust factor, that affected adoption intention. This model suggested that positive valences were perceived usefulness, perceived ease of use, social influence, and facilitating conditions, while negative valences were perceived financial risk, perceived security risk, and perceived operational risk.

Implications : This study contributed to the theoretical understanding of unorganized retailers' adoption intention of UPI payment apps using EVT. It also suggested managerial implications for policymakers as well as financial institutions to play an active role in penetrating the retail market of the unorganized sector in India.

Originality/Value : The present short communication study is unique, as positive and negative valences, as complementary predictors of adoption intention of UPI payment apps in the unorganized retail sector have not been explored in the Indian context.

Keywords : **UPI payment apps, unorganized retail sector, intention to adopt, EVT, NVIVO-15**

JEL Classification Codes : G21, G41, M31, O33

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The unorganized retail sector, which includes small, independent traditional kirana stores, low-cost outlets like general stores, street vendors, and convenience shops, has captured a significant portion of the retail market business in India (Pahari et al., 2023). Unified payments interface (UPI), a digital payment system launched by the National Payments Corporation of India (NPCI), enabled instant fund transfers between bank

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accounts via mobile applications, available 24/7, and facilitated secure, cost-effective, and convenient transactions (Basri & Shetty, 2018). However, the retail sector was slow to accept digital payment methods as many retailers would rely on cash transactions. The government has taken many initiatives to promote a cashless digital economy, which was predominantly started during the period of the COVID-19 pandemic (Kumari et al., 2021). Despite these efforts, the adoption of UPI payment apps by unorganized retailers was low (Gupta & Agarwal, 2023). On the other hand, this research employed extended valence theory (EVT), which considered both positive and negative valences (perceived benefits and risks) in technology adoption decisions (Lin et al., 2014). With the help of EVT, a conceptual model of UPI adoption was developed, focusing on the unorganized retail sector. Thus, this study aimed to address the gap between perceived benefits and risks for a proper understanding of the intention to adopt UPI payment apps by unorganized retailers.

Research Objectives

The research objectives of this study are as follows:

- To explore positive and negative valences that impact the intention to adopt UPI payment apps by unorganized retailers.
- To develop a conceptual model that explains the adoption intention of UPI payment apps by unorganized retailers with the help of EVT.
- To provide theoretical and practical implications that assist stakeholders in developing policies for the benefit of the unorganized retail sector.

Review of Literature

An effective framework propounded by Peter and Tarpey Sr. (1975) through valence theory explains consumer behavior and their willingness to adopt a product or service. The theory lays its foundation in economics and psychology and posits a rational decision-making behavior of consumers by weighing both the risks and benefits associated with purchase. The positive and negative valence so derived can help them determine a net valence. This enables them to explore an integrated evaluation, where they perceive not only the expected positive utility of a product or service but also enables them to seek its expected negative utility (Nguyen, 2023). Accordingly, it advances their intention to adopt or engage in a purchase. The valence theory framework in the current study integrates trust and other perceived values that eventually extend the original model.

Perceived Usefulness is a significant determinant of an individual's adoption of a technology. It refers to the level where an individual believes that accepting a particular technology will provide potential benefits that can enhance their business performance. The adoption of UPI payments, a low-cost digital payment option, accelerates transactions by processing them instantly, ensures seamless fund transfers, enables cashless payments, and is attainable, thereby widening one's customer base (Kumar et al., 2024).

Perceived Ease of Use refers to the degree to which a person believes that by adopting a specific technology, they would require less effort to conduct their job. It has been found that the adoption of UPI payments makes people more confident due to its user-friendly interface. UPI provides a single platform that links different bank accounts, eliminating the need to remember account details for each transaction. Additionally, it offers different payment methods such as QR code scanning, input of mobile numbers, or UPI ID.

Social Influence refers to the extent to which others influence an individual's social environment, affecting their decision to adopt a technology. Retailers of small businesses are convinced by people belonging to the same

social group or people (friends, family) with whom they are frequently connected to adopt UPI payment apps since they had a good experience with it, and eventually, the person accepts, as he or she believes in-group conformity. On the other hand, retailers from unorganized sectors are regularly observing the use of UPI for payments, and they feel pressure to accept the same (Graf-Vlachy et al., 2018).

Facilitating Condition implies the extent to which a person accepts that there is sufficient resource and infrastructure to support the usage of a specific system. It empathetically affects an individual's adoption of a technology. Uninterrupted network connectivity, cheap internet tariffs, and affordable smartphones often trigger the use of UPI payments by retailers of unorganized sectors (Kaur et al., 2021). Moreover, financial institutions play a crucial role in educating small business owners to efficiently handle UPI payments under their FinTech programs.

Perceived Financial Risk arises from the degree of uncertainty an individual faces due to the probability of experiencing a monetary loss and thereby facing negative consequences. Frequent payment failures, redirection of payment toward QR codes or other payment gateways of fake merchants, and poor server-side controls create anxiety among retailers in technology usage (De Moya et al., 2021).

Perceived Security Risk refers to the probability of illegitimate access to customer profiles by fetching UPI credentials (address, ID, bank details, and credit card number) by fraudsters, who may misuse the information. It also includes targeted hacking, unauthorized institutions (phishing attacks), and constant sending of texts for updating of UPI apps, which the retailers of the unorganized sector often fall prey to (Yadav et al., 2024).

Perceived Operational Risks denote the possibility of functional (technical) failures and errors that may prevent the expected benefits from being delivered. Constant failures of technology interface, transaction failures during peak usage time, delays in refund in UPI, technical glitches while transferring amounts to other banks to which the UPI is not linked, and excessive dependence on internet connectivity to forward transactions often repel an individual's technology usage intentions (Dhore et al., 2023).

Trust plays a crucial role in the adoption of UPI as there remains a fear among individuals about facing unpredictable situations during its usage. When an individual trusts that payments are secured and grievances or complaints are being effectively handled, there is a high probability of adopting the specific system. As individuals believe that their expectations of using the new system are fulfilled and they can validate its potential, retailers remain constantly engaged with it (Razi-ur-Rahim et al., 2024).

Method, Data Analysis, and Findings

This research conducted a qualitative study using NVIVO-15 software (Chatterjee & Giri, 2021). In the first step, 45 unorganized retailers were selected with the help of the snowball sampling technique (Giri & Pandey, 2016) and semi-structured, in-depth interviews were conducted with them (Giri & Chatterjee, 2020). In the next step, we prepared transcripts in a Word document manually from the recording of the interviews and removed numeric values, spaces, and special characters from the transcript for data-cleaning (Paul et al., 2019). Then, imported transcripts in NVIVO-15 software created the word cloud (Figures 1 and 2) and hierarchy chart (Figures 3 and 4) through the auto-coding process (Giri et al., 2019). This process detected four second-order factors (Perceived Usefulness, Perceived Ease of Use, Social Influence, and Facilitating Conditions) with 14 variables under "Positive Valence" and three second-order factors (Perceived Financial Risk, Perceived Security Risk, and Perceived Operational Risk) with nine variables under "Negative Valence." The results of the qualitative analysis revealed different sub-factors of "Positive Valence" and "Negative Valence" within the EVT framework, which mediated the effect between trust and adoption intention of UPI payment apps. Finally, an expert panel, comprising academicians and researchers in this field, was formed to validate sub-factors and related variables using the group-consensus method (Giri et al., 2022). This expert panel retained all sub-factors and variables

under "Positive Valence" and "Negative Valence." As suggested by the expert panel, control variables such as age and educational qualification could be tested as moderators in the relationship between valences and adoption intention of UPI payment apps.

Figure 1. ***NVIVO Output : Word Cloud of "Positive Valence" Influencing Adoption Intention of UPI Payment Apps***



Figure 2. ***NVIVO Output : Word Cloud of "Negative Valence" Influencing Adoption Intention of UPI Payment Apps***



Figure 3. ***NVIVO Output : Hierarchy Chart of Variables Related to "Positive Valence" Influencing Adoption Intention of UPI Payment Apps***

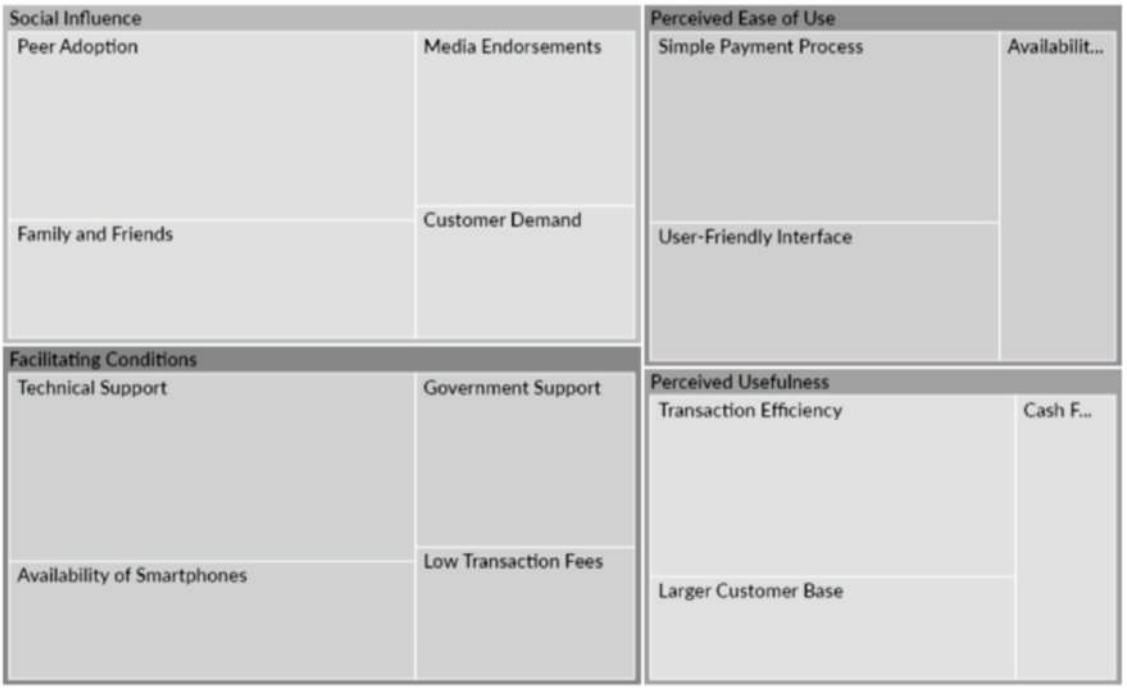


Figure 4. ***NVIVO Output : Hierarchy Chart of Variables Related to "Negative Valence" Influencing Adoption Intention of UPI Payment Apps***

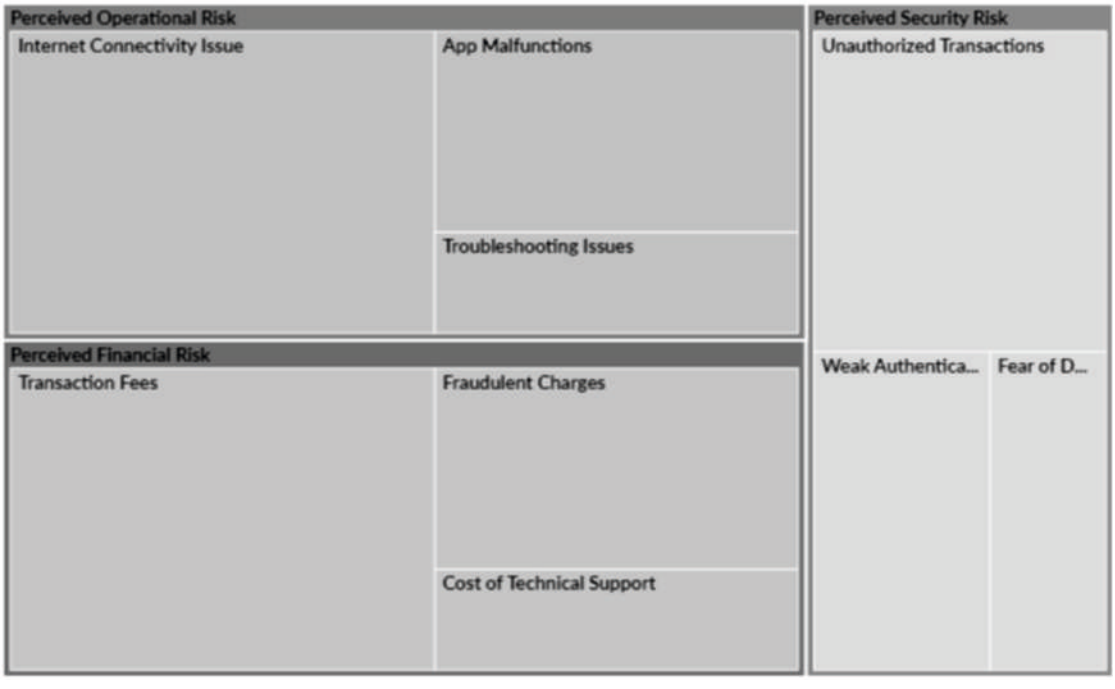
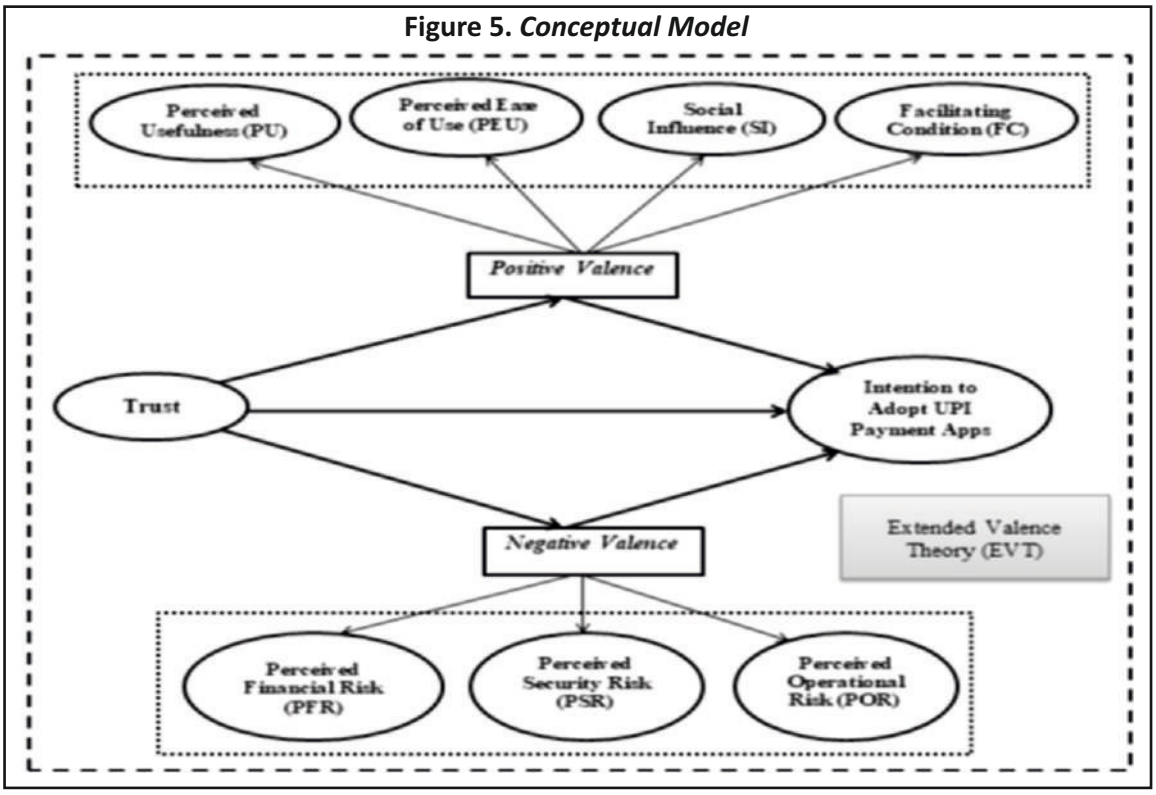


Figure 5. ***Conceptual Model***



Conceptual Model Development

The conceptual model was constructed through pertinent literature review and qualitative study using EVT outline, which emphasized both positive and negative valence simultaneously (Figure 5).

Conclusion

The study concluded that positive valences (Perceived Usefulness, Perceived Ease of Use, Social Influence, and Facilitating Conditions) and negative valences (Perceived Financial Risk, Perceived Security Risk, and Perceived Operational Risk) are critical influencing factors of UPI-adoption intention. The EVT provided a concrete framework for a holistic understanding of different relationships within the model. The findings of this research indicated that successful UPI adoption needed a balanced approach with maximizing positive valences and minimizing negative valences. This research might help with financial inclusion and overall economic development. Additionally, the study also offers valuable insights for technology providers, policymakers, financial institutions, and other stakeholders to promote the broader UPI adoption among unorganized retailers by building trust and improving digital literacy.

Theoretical and Managerial Implications

In the context of theoretical implications, the present study added to the extant literature by identifying the crucial factors that significantly account for the adoption of UPI payment apps with the help of EVT. A better understanding of risk perception is well delineated and also has been expanded. The perceived risks and perceived

benefits of using UPI reflected a holistic and integrated view of consumers' intention to adopt the system. The present study has practical implications as companies would have a better understanding of the perception of retailers in the unorganized sector who rarely voice their concerns, although they can form an extensive UPI usage category (Liébana-Cabanillas et al., 2020). Also, marketing initiatives can be planned accordingly by understanding the potential risks associated with its usage, which can encourage and trigger the adoption of the technology. The research would also assist the financial institutions to play an active role in penetrating the retail market of the unorganized sector with their digital and financial literacy events and awareness campaigns, thereby fetching more clients and eventually accounting for sizeable transactions.

Limitations of the Study and Future Research Directions

As it is a conceptual study, an empirical study with a larger sample size is needed to validate the proposed model. The study is based on the Indian context only and may not be generalizable to other geographic regions. Therefore, other relevant factors influencing adoption intentions could be added to the conceptual framework in the border aspect. Future research should address the above limitations by using a robust research methodology and a contemporary data collection process. A comparative analysis across different geographical regions can be conducted to understand the findings of the research more clearly. Also, longitudinal studies could be executed to comprehend the adoption and usage patterns of UPI payment apps over time.

Authors' Contribution

Dr. Arunangshu Giri and Wendrila Biswas both participated in the literature review modeling and generated the conceptualization. Dr. Arunangshu Giri implemented and verified the study method. He also carried out the project administration. Wendrila Biswas reviewed and edited the final draft. She also identified the implications of this study.

Conflict of Interest

The authors certify that they have no affiliations with or involvement in any organization or entity with financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

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