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Exploring the Adoption Barriers of Emerging Technologies: The Case of Buy Now Pay Later Services in Saudi Arabia

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ABSTRACT

The continuous rise of emerging technologies has transformed global business environments. Buy Now Pay Later has evolved in the FinTech industry, transforming how users conduct finance and make transactions. However, despite the increasing popularity of BNPL services, key barriers to their adoption have yet to be thoroughly explored. This study aimed to explore the BNPL adoption barriers and map when these obstacles arise during the innovation decision-making process. By utilizing the Innovation Resistance Theory, the Technology-Organization-Environment framework, and the Diffusion of Innovation theory, a qualitative methodology was employed through in-depth interviews with 42 participants. Thematic analysis identified three categories of adoption barriers that include functional, psychological, and contextual barriers. The identified barriers were mapped across four sequential phases of the innovation-decision process. Findings from this study provide a deeper understanding of how and when various barriers impede BNPL adoption in the Saudi Arabian context, offering significant theoretical and practical insights.

Keywords: Emerging Technologies, The Buy Now Pay Later (BNPL), Innovation Adoption, thematic analysis, Innovation Resistance Theory (IRT), the Technology-Organization-Environment (TOE) framework, Diffusion of Innovation Theory

1. Introduction

Emerging technologies (ETs) are profoundly reshaping economies, societies, and business landscapes worldwide. With a particular focus on developing countries, innovative tools and systems are driving unprecedented changes in the existing processes, infrastructures, and introducing new models. Rotolo et al (2015) defined ET as a fast-evolving technology that disrupts existing systems and exerts profound and sustained influence on socioeconomic structures. The distinctive features of ETs differentiate between well-established traditional technologies (TTs) and ETs. According to Rotolo et al (2015), ET is marked by: (a) a high degree of innovation, (b) uncertainty, (c) ambiguity, (d) rapid development, (e) possesses the capacity for substantial impact, and (f) a degree of sustained consistency. The application of blockchain and AI-based technologies, cloud computing, and IoT solutions has not only generated new industries but also revolutionized business models. The adoption of such ET in biotechnology and medical diagnostics is transforming healthcare into a more efficient, regulated, and data-oriented domain. Advancements in mobile-based technologies, virtual reality, and social networking technologies are enhancing communication and the dissemination of information. Green technology solutions, such as renewable energy sources and sustainable materials, are promoted to promote an eco-friendly environment and address climate change.

The financial technology (FinTech) sector is no exception. The Buy Now Pay Later (BNPL) has evolved as an ET in the FinTech industry that transformed how users conduct finance and make transactions. The financial flexibility provided to users by BNPL enabled them to pay in installments, split the payment, or not pay interest at all. BNPL can be used either online or in-store as an alternative payment method that swept the digital payment systems throughout the globe. Customers' reactions and banks' business practices have been influenced by its far-reaching effects on social and economic aspects (Pandya & Govani, 2025). As an ET, BNPL is getting progressively more adopters since its evolution. One of the main reasons for its popularity is that users can buy products or services immediately and pay for them over time, in most cases, without having to pay extra fees or interest (Abed & Alkadi, 2024). The younger generation is attracted to the BNPL technologies because they are probably familiar with technology and find the process to be unpretentious and informal to follow. From a commercial viewpoint, businesses describe BNPL as a set of tools that help them increase sales and customer loyalty. According to Behera et al (2024), the adoption of BNPL would potentially increase average purchase values, lower expenses associated with order rejection, and provide more customization. BNPL's ability to mitigate credit risk and make accumulations more systematic could help reduce financial risks. These strategies give customers greater control over their purchases and help businesses grow in a competitive online market (Wortmann et al, 2023).

Designating FinTech as a key strategic priority, Saudi Arabia has recently witnessed a substantial growth in its fintech industry as part of achieving the goals of Vision 2030. Several governmental initiatives have been implemented to support the development of the FinTech industry. The National Fintech Strategy within the Financial Sector Development Program (FSDP) is the fourth pillar of FSDP aimed at increasing the sector's economic contribution, promoting digital financial innovation, and improving financial inclusion. To put this strategy into action, the Regulatory Sandbox Programs were established to enable a robust regulatory environment, and the Open Banking Policy was adopted by the Saudi Arabian Monetary Authority (SAMA) to ensure secure data sharing and support the transition into cashless payments. Consequently, the BNPL market has experienced an increasing growth and widespread adoption, motivated by consumer needs and flexible payments solutions. BNPL has become an important part of uplifting Saudi Arabia's growing financial industry and providing long-term financial inclusion via the new FinTech Saudi initiative

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and the Saudi Central Bank's (SAMA) appropriate long-term endeavor (Alessa & Alabdan, 2025).

Despite the increasing popularity of BNPL services, little is known about the critical factors preventing their widespread use, particularly in the context of developing countries. While previous research provides empirical evidence on the acceptance and use of BNPL, consumer voices about their reluctance toward the adoption of BNPL remain largely unexplored. The vast majority of existing research either provide a quantitative overview on the developments of FinTech digital solutions in general or use quantitative methods to analyse the factors that contribute to their adoption or acceptance, mostly in developed countries (Abed & Alkadi,2024). No existing studies have explicitly concentrated on providing a deeper understanding of the BNPL adoption barriers from the users' perspective. The study of Mukherjee (2025) identified factors impeding the adoption of BNPL in India and analyzed the causal relationships among the identified factors using a sequential mixed-methods design. Although the findings provide valuable insights, the study relied on users' App reviews and existing literature to identify the adoption barriers. It is thus challenging to extract relative themes consistently and rank its importance comprehensively from unstructured data such as users' reviews, which tend to be anecdotal, fragmented, and lack contextual and demographic information. Existing studies skirt the crucial effects of cultural influences, personal experiences, and attitudes that can hinder BNPL adoption in Saudi Arabia (Saleh & Terike, 2025; Kutбi et al., 2024). This highlights a critical research gap given the specific socio-cultural environment and unique consumer behaviour patterns within the Saudi Arabian context.

This research addresses this gap by exploring the key adoption barriers preventing Saudi users from utilising BNPL services effectively, and pinpoints the specific phases in the BNPL adoption process where the identified barriers manifest most significantly. The study provides insights for BNPL providers, policymakers, and financial institutions to address the specific users' needs, revise regulations, and customize the strategies of digital solutions. Thus, the key research questions guiding this exploration are:

RQ-1: *What are the key barriers preventing the adoption of Buy Now, Pay Later (BNPL) services among Saudi consumers?*

RQ-2: Which phases in the BNPL adoption process are most affected by the identified adoption barriers in the Saudi Arabian context?

The study integrates the Innovation Resistance Theory (IRT) and the Technology-Organization-Environment (TOE) Framework to provide a holistic view of the main concerns preventing Saudi customers from utilising BNPL services. While the IRT covers the demand-side (consumer resistance) of the process by investigating the individual and behavioral barriers, the TOE covers the supply-side (technological and environmental contexts). The IRT focuses on the behavioral and physiological resistance of consumers, who typically avoid the adoption of new technologies because of their perceptions, beliefs, societal norms, and religious views all play significant roles in shaping individuals' responses (Lyu et al, 2025). The TOE framework, on the other hand, facilitates the exploration of the contextual factors influencing users' adoption in terms of the technological medium and the regulatory environment under which the adoption occurs. For a deeper understanding of the ET adoption dynamics, the Diffusion of Innovation Theory (DIT) will be used as a lens to identify the most critical adoption stages under which the barriers are most pronounced. Mapping the identified barriers onto specific adoption stages inform more targeted interventions and managerial strategies to address the specific users' needs. Therefore, this integration enriches our understanding of what types of behavioral and contextual adoption barriers of FinTech innovation exist, and when in the adoption process those barriers manifest most significantly.

To position this study among existing research, the following section summarizes previous research on BNPL. Section 3 describes the research methodology, followed by Section 4, which presents the results. The discussion is presented in Section 5. Section 6 concludes this paper.

2 Background

This section presents the existing literature on BNPL and highlights the application of Innovation Resistance Theory (IRT) and the Technology-Organization-Environment (TOE) Framework in this study's context.

2.1 Buy Now Pay Later (BNPL)

The BNPL mechanism enables the immediate payment of several interest-free instalments for products and services, with almost all of the BNPL transactions being conducted online, with lenders acting as independent entities from the physical location (Desai & Jindal, 2024). Customers are more likely to overspend during online transactions when BNPL is in accordance with their budgeting practices, and the payment concerns they experience are reduced. In the context of online shopping, BNPL influences users' shopping habits by encouraging their impulsive buying. According to Di Maggio et al (2022), consumers may spend more than individuals with little category expertise and little price sensitivity when given access to unsecured credit via BNPL.

BNPL is different from regular credit systems since it is frequently included within the retail management system of an e-commerce site and delivers quick approval. This makes the BNPL system easier for clients to use and provides them with the option to pay without interest, increasing its popularity and giving it an advantage over other digital business payment methods (Lekhi et al, 2024). The BNPL is a popular installment payment plan among tech-savvy youth because it is convenient to use, transparent, and flexible. In the context of Saudi Arabia, tech-savvy young people, a strong e-commerce sector, and an emerging FinTech environment are having a powerful impact on the adoption of BNPL systems (Abed & Alkadi, 2024).

aThe BNPL literature reveals researchers' interests in investigating the influencing factors of adoption and acceptance considerably. Abed and Alkadi (2024) investigated the influencing factors of BNPL app usage among Generation Z Saudi consumers. By integrating the Unified Theory of Acceptance and Use of Technology (UTAUT) and the DeLone and McLean Information Systems Success model, 380 young app users were surveyed to examine their adoption incentives. It was found that users' intention for continued use was influenced by social influence, performance

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expectancy, and effort expectancy. Furthermore, users' satisfaction correlated significantly with system quality, service quality, and information quality. Khan and Haque (2020) surveyed 418 Dhaka city respondents to explore the factors driving consumers to purchase products using the BNPL scheme. Their findings indicate that a high level of education, increased demand for luxury goods, and improved standard of living, using the BNPL method, have significantly impacted the increase in the value of BNPL yearly product purchases. The study confirmed that consumers have impulsive purchase decisions when they can pay for it later. The study of Gerrans et. al (2022) described the interaction between regulation and responsibility with BNPL. A survey was distributed among Australian undergraduate students to examine whether they have an appetite or skill for responsible use. A key finding of the study was that the perceived BNPL benefits were reduced by financial literacy. Further, greater benefits and fewer risks were found to be associated with lower financial literacy.

Existing literature highlights critical barriers to the adoption of ET. A sequential mixed-method approach was adopted by Mukherjee (2025) to identify the factors impeding the successful adoption of BNPL in India. Users' app reviews and expert opinions were used to identify the factors, followed by a survey aimed at ranking the identified factors systematically. The study identified a set of barriers to BNPL adoption in India, including digital illiteracy, negative credit profiles, privacy and regulatory concerns, late payment fees, impulse buying, and hidden fees. The study of Chatterjee et al (2023) explored the key barriers to the adoption of sustainable innovation in the manufacturing sector, particularly the Metal Additive Printing (MAP) technology. 40 in-depth interviews were conducted with researchers and machine manufacturers, and end users to identify the main obstacles to the adoption of MAP. The study found seven key barriers to the adoption of MAP that include education and skills, costs, production constraints, marketing and distribution, social conservatism, bureaucratic inertia, and quality and standards. Khan and Mehmood (2024) investigated fast food restaurant employees' resistance to the use of service robots (SRs) in Pakistan. By applying innovation resistance theory IRT, 247 participants were surveyed to identify the drivers that discourage the use of SRs. The findings confirmed several functional and psychological barriers to this innovation. Most importantly, it was found that usage intention was significantly influenced by usage, image, and traditional barriers.

2.2 Innovation Resistance Theory (IRT)

Ram and Sheth (1989) propose Innovation Resistance Theory (IRT), which assumes that an individual faces a set of challenges during the adoption of newly emerged innovation. In this context, innovation resistance may be described as actions stemming from reasonable considerations and decisions about the adoption and application of innovation, due to the potential disruptions that may be caused by changes to the current state and departures from commonly held beliefs (Hew et al, 2019). The IRT classifies the barriers into two main categories: (a) functional barriers, which include usage barrier, value barrier, and risk barrier, and (b) psychological barriers that include tradition barrier and image barrier. Usage barrier is the predominant cause of resistance, which occurs when consumers perceive the innovation as a misalignment with their established processes, experiences, and habitual practices. The value barrier arises when consumers doubt the benefits of the innovation compared to other alternatives. The risk barrier occurs when an innovation holds uncertainty and potential social, economic, or physical risks. A tradition barrier arises when an innovation conflicts with consumers' cultural, religious, and traditional values. Image barrier stems from consumers' negative feelings that are associated with an innovation.

The IRT has been applied extensively to identify resistance drivers of innovations in many contexts. For example, Musyaffi et al. (2022) applied the IRT to determine users' resistance toward using digital payment systems. In the context of the smart home market, the IRT was used by Tsioutsiouliklis et al (2022) to identify the influencing factors that prevent the use of smart home technologies. Extending the IRT to the e-health sector, Sajid et al (2023) investigated users' incentives for resisting the adoption of Telemedicine Innovation. Therefore, the IRT fits well with the aim of identifying user-level barriers that affect the adoption of the newly emerged BNPL innovation.

2.3 Technology-Organization-Environment (TOE) Framework

The Technology-Organization-Environment (TOE) Framework is one of the most widely used frameworks of IT adoption (Tornatzky&Fleischer,1990). It assumes that the decision of technology adoption is influenced by three key dimensions; (a) technological context which refers to the technology features such as perceived usefulness, complexity and compatibility, and infrastructure; (b) organizational context which describes the organizational internal environment in terms of organizational culture or strategic alignment; and (c) environmental context which focuses on the external factors influencing the technology adoption decision such as the regulatory environment, governmental support and market conditions. Since this study focuses on a user-level exploration, only the technological and environmental contexts would be applied to identify the adoption barriers of the use of BNPL. This multilevel framework is useful in the context of this investigation, where the adoption decision of utilising BNPL is not only shaped by the user preferences, but also by the contextual interconnected factors.

3. Materials and Methods

This section outlines the study's design, sampling strategy, data collection methods, analytical procedures, and approaches to validating the results.

3.1 Study design

A qualitative approach was employed to investigate the principal barriers to BNPL adoption in Saudi Arabia and to determine the critical phases during which these barriers were most pronounced. This methodology enables an in-depth exploration of lived experiences, socio-cultural contexts, and individual attitudes dimensions that quantitative measures alone may not adequately capture (Palinkas et al., 2015).

3.2 Data collection and sampling

Data was collected through semi-structured in-depth interviews of a purposive sample of 42 respondents residing in Saudi Arabia. To ensure diverse representation, participants' demographic characteristics varied in terms of gender, age, educational level, employment status, and monthly income (Table 1). This diversity

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allows for a comprehensive understanding of various experiences and backgrounds about the key inhibitors of BNPL adoption and at what stage of the decision-making process they occur. Participants were recruited voluntarily from different regions in the Kingdom of Saudi Arabia. The selection criteria for participating in this study include:

- Individuals who are not currently utilizing/ adopting BNPL
- Individuals who are residing in Saudi Arabia in different regions
- Varied gender, age, educational level, employment status, and monthly income groups

Table 1: Participants' demographic description

Category		Number of participants
Gender	Male	19
	Female	23
Age	18-25	10
	26-40	14
	41-60	13
	More than 60 years	5
Educational level	Secondary education	2
	Diploma	3
	Bachelor	25
	Master	9
	PhD	3
Employment	Full-time job	15
	Part-time job	9
	Unemployed	3
	Retired	3
	Student	10
	Housewife	2
Monthly income	< 1000	10
	From 1,100 and 10,000	11
	From 10,100 and 20,000	9
	From 20,100 and 30,000	4
	More than 30,000	3
	Prefer not to answer	5

Guided by The Innovation Resistance Theory (IRT), Technology-Organization-Environment (TOE) theories, and the existing literature, interview questions were formulated focusing on functional, psychological, technological, and contextual factors that have an impact on BNPL use, and the key milestones of the adoption (Appendix A1). Interviews were conducted virtually through Skype or Zoom due to logistical constraints. A protocol during the interview was applied to maintain consistency, and each interview took between 40 and 60 minutes. After obtaining participants' consent, each of the interviews was recorded through the internal recording systems of the respective platforms to avoid inaccuracies. To build rapport with the participants and collect background details, demographic information was taken at the beginning of each interview. The interviews continued with open-ended questions intended to explore the difficulties and barriers of BNPL adoption and identify the rejection phase. At the end of each interview, a summary meeting was performed to allow participants to add any related issues, ask questions, or comment on the topic. Interviews continued until saturation was achieved, and no new themes or sub-themes emerged. Interviews were conducted in Arabic, and transcriptions were then translated into English by a bilingual expert applying the forward-back translation method to maintain meaning and cultural contexts. To confirm the accuracy of the translations, a second independent bilingual expert performed a verification review.

3.3 Data analysis

The six steps of Thematic Analysis described by Braun and Clarke (2006) were used iteratively in this research with three rounds of analysis. The initial step was familiarization with the data: the immersion in the dataset to get a profound insight into what it included, and taking notes. Each of the transcripts of the interview was read multiple times, and the audio recording was also listened to verify and to observe the non-verbal communication. The second step was the generation of the initial codes: a systematic open coding of the dataset was conducted to extract significant statements related to BNPL adoption barriers and the timing of rejection occurrences. Codes were developed and revised as the analysis progressed instead of relying on predefined codes. A manual coding process that involved the use of pens and highlighters on the physical transcripts was used, followed by using NVivo software to increase consistency and transparency. Codes were data-driven and remained close to the language used by the participants to maintain authenticity. Searching for themes: initial codes were then inspected and compiled into themes and subthemes that represented important elements of the experience of the participants (Appendix A2, 3). The next step was reviewing themes: all the potential themes were clarified to make them represent the data accurately. These included two levels of review: the first one was verification that coded extracts made a coherent pattern within each theme, and the second one was review of the themes in terms of the whole data set, to demonstrate that they did not overlap or duplicate significant

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patterns. Defining and naming themes: once the final thematic structure was established, each of the themes was described in some detail, aiming to identify its essence and the particular facet of the data it captured. The themes had recognizable, brief, and specific names to make them more coherent. The final step entailed the process of combining the thematic data into a logical story that captured the research questions. To exemplify each of the themes, rich, vivid excerpts from the interviews were presented.

3.4 Results validation

Results validation measures were taken to ensure the reliability of the thematic analysis. Inter-coder reliability was conducted during the process of coding. The transcripts were coded by the researcher and a qualitative data expert independently. Interviews were reviewed by each researcher for the generation of initial codes. After the completion of the individual coding phase, the researchers met to review and discuss the alignment of their findings, aiming to reach an agreement on the coding scheme. Any coding discrepancies were addressed through a collaborative discussion with a qualitative research expert to confirm the robustness and reflectiveness of the themes. Furthermore, a feedback session with the participants was also conducted to ensure the credibility and accuracy of the results. After the analysis was finalized, participants were invited to join a virtual feedback session. The attendees were 15 participants who had been interviewed previously. The key findings and samples of anonymized interview responses were presented to the participants, who discussed and confirmed the findings.

4. Results

This section presents the results of the thematic analysis of the interview data. Results of the first research question will be presented first, followed by the results of the second research question.

4.1 Adoption barriers of BNPL

The first round of the thematic analysis focused on identifying the adoption barriers to BNPL. Three major themes emerged, each comprising unique sub-themes, reflecting the barriers described by users toward the BNPL adoption in Saudi Arabia (Appendix A-2). Participants' views, as captured within these themes, highlight functional, psychological, and contextual barriers related to the adoption of BNPL. To identify the most popular barriers mentioned by participants, a frequency analysis was conducted on the interview data (Figure 1). The most repeated barriers were risk, value, tradition, usage, image, technological, and environmental, respectively. Below is the analysis of each theme in detail.

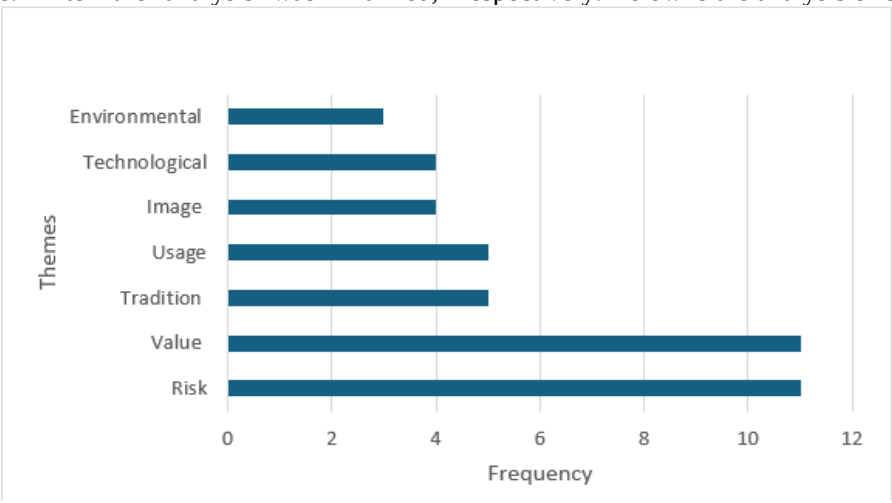

Figure 1: Frequencies of different barriers identified in the thematic analysis

4.1.1 Functional barriers

Functional barriers were the most frequently observed category in the data, referring to practical and behavioral obstacles that arise from perceived disruption of established financial routines, doubts over value, and concerns about financial risks. Under IRT, such barriers occur when a new payment method demands a change in consumer habits but fails to demonstrate clear, compensating benefits (Ram & Sheth, 1989; Yoo et al., 2021).

Theme-1: Usage barriers

Usage barriers emerged as one of the most occurring barriers among participants. Many participants stated habitual payment preferences, especially for cash transactions or lump-sum payments, and a reluctance to learn or adopt new processes as their main reason for not using BNPL. Participants described BNPL as inconsistent with their established routines and highlighted their comfort with traditional payment methods. One participant stated, *"I have never tried it, because if I want to buy something, I prefer to save money and then buy the item I want, paying the full amount directly" (P15)*. Some participants expressed their refusal to borrow and valued financial control as their main reason to resist BNPL, which is against their established habit. A participant stated, *"For me, the idea of borrowing is always rejected except in difficult circumstances; I need to keep control over my finances. The case with BNPL is against my approach" (P 26)*. Techno-usage barriers occurred in the description of a few participants. For example, *"I do not know how to use the apps, and I'm not willing to learn. I'm happy with my current payment method" (P 4)*. These statements suggest that for some consumers, BNPL adoption is not only about perceived utility but also about overcoming the friction of altering payment routines, echoing earlier IRT findings that habitual inertia can be a strong deterrent.

Theme-2: Value barriers

Value barriers related to skepticism over whether BNPL offers advantages over existing payment methods, especially in light of potential costs such as fees or interest. Participants who perceived no tangible benefit considered BNPL unnecessary or even wasteful:

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"Simply, I don't need to use it. I feel like I'm wasting my money. So what types of benefits I'm looking for from something I don't need" (P12). In addition to perceived lack of necessity, no perceived benefits, emotional stress, and psychological discomfort associated with possible debt reinforced this resistance: *"I don't like it [BNPL] and I don't see its importance. It leads to accumulated debts and stress" (P 22)*. Such perceptions are consistent with previous digital finance adoption studies, which find that low relative advantage compared to familiar alternatives slows uptake.

Theme-3: Risk barriers

Risk barriers reflected anxiety about potential debt accumulation, fear of losing financial control, and concern over future obligations. The psychological weight of debt was a recurring theme: *"If I relied upon BNPL, accumulation of payments would cause a psychological problem for me, I'll be stressed and in a constant state of fear of not being able to pay fees on time" (P42)*. Participants expressed clearly that they do not want to over-extend financially by using BNPL. Cautious management and avoiding commitments are emphasized repeatedly over installment-based convenience: *"I prefer to avoid any possibility of accumulating debt or interest, especially if I am unable to make payments on time, and I find that relying on immediate payment helps me control my spending better" (P 27)*. For some participants, privacy and security issues prevented their BNPL adoption. A participant stated, *"I'd say BNPL would be easy to adopt for someone who is used to online shopping, but for me, privacy and security risks make me hesitant. I want to be sure my information won't be leaked or misused" (P 32)*. These concerns align with prior studies linking perceived financial and security risks to avoidance of digital finance tools (Pal et al., 2020).

4.1.2 Psychological barriers

Psychological barriers encapsulate cultural, religious, and perceptual factors that shape consumer attitudes toward BNPL independently of its functional features. These barriers often operate at a deeper level of values, identity, and trust, making them more resistant to change.

Theme-4: Traditional barriers

Religious adherence to Sharia principles emerged as a primary filter for rejection, with participants like P17 stating unequivocally: *"It's against my religious belief as a Muslim, this method is prohibited in Islam because of usury" (P17)*. The religious principles of BNPL inhibited its adoption completely, irrespective of other financial or functional factors: *"Once I've heard that BNPL is not permissible according to the Islamic laws as it involves usury, I did not consider using BNPL at all" (P 29)*. Cultural norms promoting fiscal conservatism further inhibited adoption, as embodied by P6's caution: *"The main reason for me is that I don't want to get used to buying luxuries or even basic things through installments [...] this type of payment causes the person to fall into a cycle of installments (debts) at the beginning of his life and becomes lenient with this matter when he gets older. Therefore, if I need something, I save for it or ignore it and do not burden myself beyond my capacity (stretch your legs to the length of your blanket) [Arabic proverb]" (P6)*. The participant referred to risk barriers by describing fears of debt cycles that stemmed from a strong traditional value of living within one's means. This finding extends Ram and Sheth's (1989) work on psychosocial resistance by highlighting how religious identity shapes financial decisions in Muslim-majority contexts, contrasting with Western studies where cost dominates objections (Pal et al., 2020).

Theme-5: Image barriers

Image barriers compounded this resistance through BNPL providers' distrust and their regulatory ambiguity. Participants expressed negative perceptions about providers' transparency regardless of its availability: *"I do not trust the procedures taken, because they [BNPL providers] do not take customers' interest seriously. I've heard stories from my family members and friends using BNPL" (P4)*. Some participant expressed their negative perception of BNPL by comparing its regulatory parity with banks unfavourably, *"I don't trust these apps, it just feels not right paying in this way, I don't know if they are as regulated as banks, so I'm not sure I trust them as much." (P31)*, validating Baabdullah et al.'s (2019) emphasis on trust deficits in emerging fintech markets.

Psychological barriers in this study were grounded in deeply held beliefs and social norms, which may be less susceptible to change than functional barriers. In IRT terms, these represent value-based resistance: when a service conflicts with moral codes or trust expectations, practical benefits are insufficient to overcome rejection.

4.1.3 Contextual barriers

Contextual factors provide a broader view of analyzing inhibitors that affect the adoption of emerging technologies, embodied in the technological characteristics, and environmental forces that act as external stimuli.

Theme-6: Technological barriers

Users had concerns about the BNPL Apps/ platforms' usability, interface design, and digital literacy, which block adoption. Some users found themselves lost in the apps, having trouble navigating the app, as one participant said, *"My friend showed me her BNPL app account. I had some trouble navigating the App at first, so I couldn't use it. There were so many ads, and I couldn't figure out where to track payments with BNPL. I felt it's easy to lose count of which purchases are pending through the app" (P23)*. Lack of digital skills in using the App was described as a major inhibitor to the adoption of BNPL which intertwined with the challenge of financial security, *"My biggest issue with this payment method is my poor technical skills, I'm not confident to use the app particularly with sensitive data, my financials would be at risk I'm afraid" (P 5)*.

Theme-7: Environmental barriers

The environmental barriers were driven by the sense of market immaturity, regulatory control, and consumer protection ambiguity. The respondents were reluctant because of the immaturity of the BNPL market and the absence of apparent consumer protections. One of them stated, *"Personally, I'm not excited about BNPL because I feel that the BNPL market is not mature yet in terms of policies and consumer rights, also the competition is currently limited to [Name of 1st provider] and [Name of 2nd provider] the most dominating BNPL providers in the market, so I assume there won't be innovativeness or optimised user experience involved." (P3)*, while P7 cited macroeconomic risks: *"I'm not fully aware, I understand that there's a need for governmental oversight to avoid consumer over-indebtedness, which aligns with economic*

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stability goals, so I'm not considering using BNPL currently to avoid contributing to broader financial risk." Some participants admitted that their unawareness of their rights deters them from adopting the BNPL*; "I'm not fully aware of my rights as a customer, which makes me hesitant to use BNPL." (P 13)*. This regulatory ambiguity dampens the trust in BNPL services and prevents them from being adopted. This aligns with Awa et al.'s (2017) model, where environmental uncertainty stifles innovation adoption.

4.2 Phases of barrier occurrence

The second round of the thematic analysis focused on identifying the phases of adoption barriers. Four major themes emerged reflecting the appearance of various barriers described by users that include knowledge, persuasion, decision, and implementation (Appendix A-3). A frequency analysis was conducted to identify when in the adoption process the identified barriers manifest most significantly (Figure 2). For participants, the most repeated barriers occurred during the persuasion phase, followed by decision, knowledge, and implementation, respectively. Below is the analysis of each theme in detail.

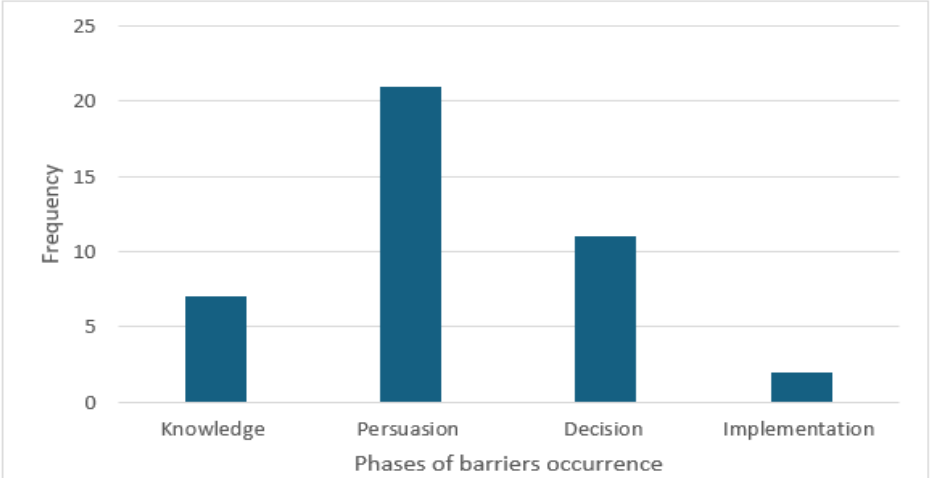

Figure 2: Phases of barrier occurrence

Theme-1: Knowledge phase

The knowledge phase was referred to repeatedly by participants in describing obstacles related to their awareness of BNPL. The analysis identified four types of barriers that emerged in the knowledge phase, including environmental, technical, image, and techno-usage barriers. Environmental obstacles were described by a lack of knowledge about the regulatory system of BNPL services. One interviewee said, *"I'm not fully aware, I understand that there's a need for governmental oversight to avoid consumer over-indebtedness, which aligns with economic stability goals, so I'm not considering using BNPL currently to avoid contributing to broader financial risk" (P 7)*. Technological barriers emerged from a lack of confidence in one's own digital proficiency and the security of the platforms. A participant highlighted this fear, sharing, *"My biggest issue with this payment method is my poor technical skills; I'm not confident to use the app, particularly with sensitive data, my financials would be at risk, I'm afraid." (P 5)*. Image barriers, related to the lack of users' unfamiliarity with the BNPL mechanism and applications' use, as one individual conceded, *"I have no big issues with BNPL, it's just I do not use BNPL applications because I do not understand how it works, but I may change my view in the future. It is possible to use them." (P 10)*. Finally, techno-usage barriers represented a more resolute resistance to engaging with the technology required, irrespective of its potential benefits. This is encapsulated in the quote, *"I do not know how to use the apps, and I'm not willing to learn. I'm happy with my current payment method." (P 4)*.

Theme-2: Persuasion phase

Participants formed an unfavorable attitude towards BNPL adoption in the persuasion phase, which was the most prominent phase featuring the highest number of repeated barriers. This indicates that forming an attitude is the most significant hurdle in the BNPL adoption process. Value barriers were evident in this phase when participants perceived BNPL as conflicting with their financial philosophy, such as a participant who stated, *"I see it as a waste of money, one purchase will lead to the other, it's against my saving philosophy."(P 5)*. Risk barriers were strongly associated with a perceived lack of safety and familiarity compared to established financial payment methods: a participant explained, *"For me, using a credit card feels safer since I'm familiar with the process, whereas BNPL seems new and risky." (P 2)*. While traditional barriers, often rooted in deep-seated cultural or religious beliefs, presented a significant impediment, as one participant shared, *"To be honest, I have religious suspicions about BNPL, there might be prohibited profits, or usury involved. So, the best thing is to avoid using it until its mechanism is religiously cleared" (P 28)*. This highlights the profound influence of cultural and normative values on technology adoption, which can override utilitarian considerations. Usage barriers, relating to a preference for existing habits, were also present during this phase: *"In fact, I have never thought of buying any item in installments. I prefer to wait until I have the full amount, that's mainly why I'm not using BNPL" (P 35)*. Image barriers persisted from the knowledge phase but were now more focused on trust in the companies themselves rather than just understanding, with a participant noting, *"I don't trust these apps, it just feels not right paying in this way, I don't know if they are as regulated as banks, so I'm not sure I trust them as much."(P 31)*. This lack of trust in novel financial intermediaries is a critical barrier, as trust is the foundation of all financial transactions. Finally, environmental barriers at this stage concerned the maturity

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of the BNPL market and a lack of competition, as one astute participant observed, *"Personally I'm not excited about BNPL because I feel that the BNPL market is not mature yet in terms of policies and consumer rights, also the competition is currently limited to [Name of 1st provider] and [Name of 2nd provider] the most dominating BNPL providers in the market, so I assume there won't be innovativeness or optimised user experience involved."(P 3).* The prevalence and diversity of barriers in this phase underscore that even when consumers understand BNPL, they must overcome powerful attitudinal objections related to personal values, perceived risk, and trust before moving towards adoption.

Theme-3: Decision phase

The decision phase was the second most commonly cited phase by participants, where they carried out activities that resulted in a decision either to embrace or abandon the BNPL use. This is a critical point in the adoption process where the types of barriers become fewer, but their strength seems to increase when the consumers resolve in their minds to a course of action. The analysis revealed three main obstacles, with the risk barriers being the most prevalent issues at this stage. Participants expressed a fear of negative financial impacts and considered the practical significance of utilizing BNPL. It is vividly explained by one person who wrote, *"I don't want to use BNPL to avoid getting into debt that could hurt my credit history. I can't put myself in this position" (P 25),* which points out a direct correlation between BNPL usage and a possible harmful effect. Value barriers were also a critical factor in the decision to reject BNPL services, and this was commonly determined by a rational evaluation of the usefulness of the service to a given situation. One of the participants summed it up by saying, *"Personally, I don't like deferred payment because I don't have a regular monthly income, BNPL is not useful for me,"* meaning that they judged that the BNPL innovation does not fit users' needs. The decision is a direct result of users' evaluation of the advantages of BNPL; they decide to reject the adoption. The lowest mentioned barriers to the use, but in this step, were usage issues, which concerned the intellectual difficulty of managing the service after adopting it. One participant rejected BNPL due to the perceived mental burden, explaining, *"I find it hard to track payments with the BNPL app. It's easy to lose count of which purchases are pending, the whole idea confuses me, so I'd rather stick with my traditional way of payment" (P 1).* The decision to reject BNPL is ultimately driven by a calculated assessment of financial risk, personal utility, and cognitive load, moving beyond the attitudinal concerns of the persuasion phase to a more concrete evaluation of consequences.

Theme-4: Implementation phase

The implementation phase was the least frequently mentioned phase, which occurred when a few participants put the BNPL innovation into use, indicating that fewer participants had progressed to the actual usage. However, for those who did, the barriers encountered were directly related to their lived experience with the service. Two barrier types emerged: Value and Technological. Value barriers resurfaced with great force when the experience of using BNPL failed to meet expectations, particularly regarding fairness and transparency. A participant who had tried BNPL recounted a negative experience that led to discontinuation: *"During my first and only experience with BNPL, the provider imposed an additional fee on me for late payment I forgot to pay, I did not intend to miss the due date of payment, I felt it's not fair and decided to stop using it I as a purchase option.*" This experience of *"unfair"* terms validates pre-adoption risk perceptions and leads to discontinuance, a phenomenon noted in studies of financial service complaints (Ambrocio et al., 2020). This experience fundamentally altered their perception of the service's value proposition. Technological barriers at this stage were no longer about a general fear of technology but about specific usability and interface issues that created friction and frustration. A participant described a failed attempt to use a BNPL app due to poor user experience: *"My friend showed me her BNPL app account. I had some trouble navigating the App at first, so I couldn't use it. There were so many ads, and I couldn't figure out where to track payments with BNPL. I felt it's easy to lose count of which purchases are pending through the app." (P 23).* This highlights that poor user experience (UX) design can be a critical barrier to continued use, even after the initial decision to adopt has been made (Obieze, Idem, & Olipede, 2024). The experiences in this phase are crucial, as they determine whether a first-time user becomes a long-term adopter or an outright rejecter, and they highlight that the responsibility for overcoming barriers lies not only with the consumer but also with the providers to ensure their services are equitable and user-friendly.

4.3 Phase-Based Classification of BNPL Adoption Barriers

Based on the results in sections 4.1 and 4.2, a frequency analysis was conducted to identify the most repeated barriers under each phase (Figure 3). The distribution of barriers across the BNPL adoption process shows that all types of barriers occurred during the persuasion phase except for the technological barriers. Four types of barriers emerged in the knowledge phase: usage, image, technological, and environmental. Usage, value, and risk barriers manifested in the decision phase. Only value and technological barriers appeared during the implementation phase.

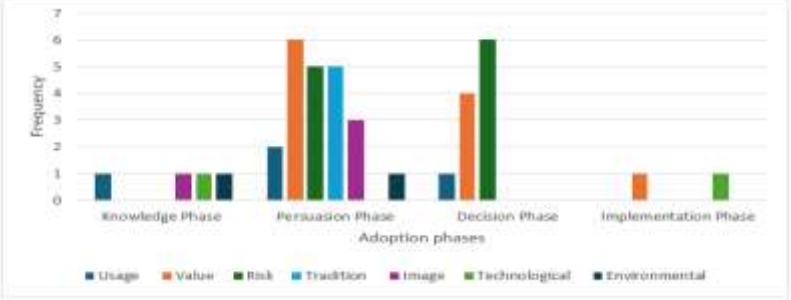

Figure 3: The distribution of barriers across the BNPL adoption process

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In terms of the barriers, usage emerged during the first three phases of adoption but manifested significantly in the persuasion phase (Figure 4).

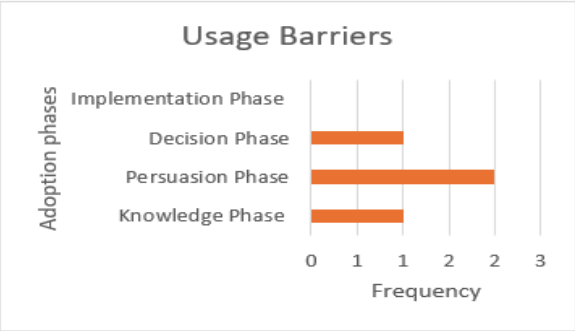

Figure 4: The distribution of usage barriers across adoption phases

As shown in Figure 5, the value barriers initiated their highest emergence in the persuasion phase and declined gradually in the decision and implementation phases.

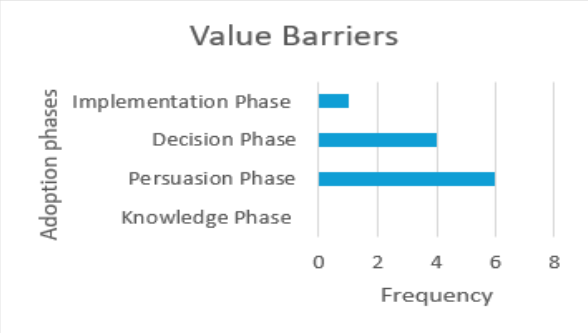

Figure 5: The distribution of value barriers across adoption phases

The risk barriers were highly referred to during the decision phase and persuasion phase, respectively (Figure 6).

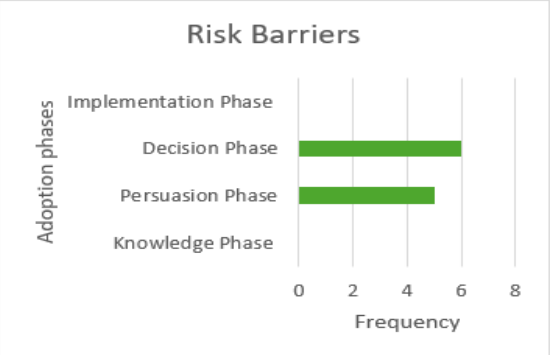

Figure 6: The distribution of risk barriers across adoption phases

Figure 7 shows that traditional barriers occurred only during the persuasion phase.

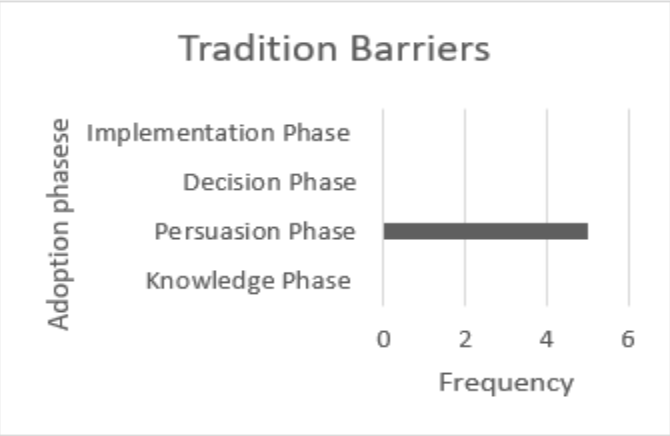

Figure 7: The distribution of tradition barriers across adoption phases

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The image barriers appeared in the initial adoption phases and manifested significantly during the persuasion phase (Figure 8).

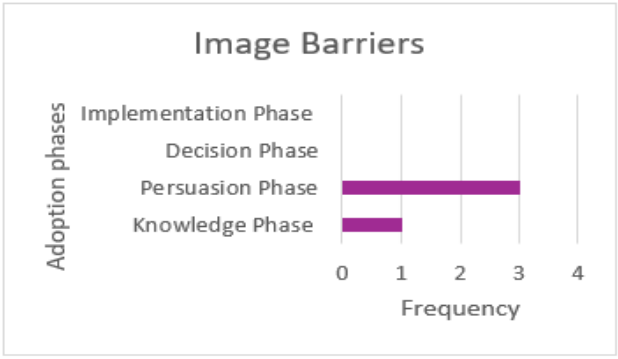

Figure 8: The distribution of image barriers across adoption phases

It can be seen from Figure 9 that the technological barriers initiated their emergence in the knowledge phase and implementation phase.

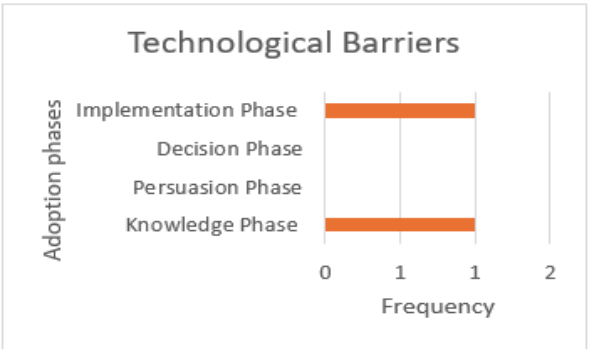

Figure 9: The distribution of technological barriers across adoption phases

The environmental barriers occurred in the knowledge and persuasion phases (Figure 10).

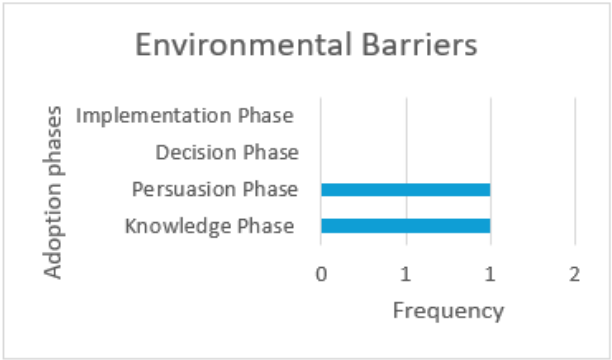

Figure 10: The distribution of environmental barriers across adoption phases

Overall, the adoption barriers to BNPL were found on an individual and contextual level, and their occurrence time during the innovation decision process was identified as shown in Figure 11.

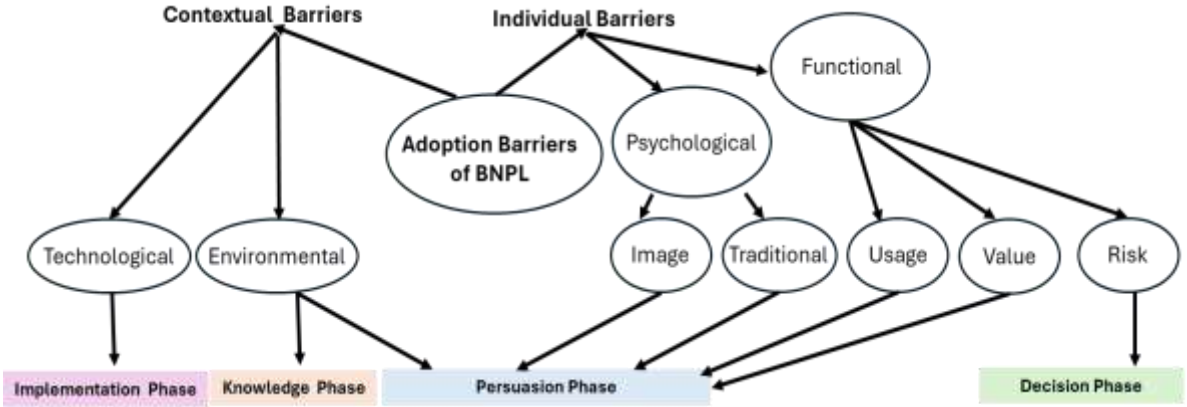

Figure 11: The adoption barriers to BNPL and the phases under which each barrier manifested significantly

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5. Discussion

This study's findings illustrate the complex landscape of barriers inhibiting the adoption of emerging technologies, particularly the BNPL services in Saudi Arabia, mapped onto the innovation-decision process. The analysis reveals that these obstacles are not monolithic but can be categorized into three central themes: functional (e.g., risk, value, usage), psychological (e.g., tradition, image), and contextual (e.g., technological, environmental) barriers. Crucially, these barriers manifest in a distinct chronological sequence across the four phases of adoption. The journey begins with a fundamental Knowledge deficit, primarily comprising contextual and psychological barriers. This evolves into the Persuasion phase, where deep-seated psychological and functional barriers form negative attitudes. The Decision phase then involves a concrete, functional appraisal of costs and benefits, leading to rejection. Finally, for those who adopt, the Implementation phase can see abandonment due to experienced functional and technological failures. This phased model underscores that the most significant hurdles to BNPL diffusion in Saudi Arabia occur not at the point of first use but in the prior stages of attitude formation and rational choice.

The identified categories of barriers impede adoption in distinct yet interconnected ways, deeply influenced by the Saudi socio-economic context. Functional barriers are paramount, as potential users engage in a rational calculus where perceived risks often outweigh benefits. The fear of debt accumulation and damage to credit history, a core risk barrier, aligns with global studies on debt aversion as a primary cause for refusing credit options (McGrath et al, 2024). This is particularly acute in Saudi Arabia, where financial caution and a cultural preference for saving over indebtedness shape decision-making. Value barriers emerge when BNPL is deemed incompatible with an individual's financial reality, such as irregular income, directly reflecting the "perceived usefulness" construct central to the technology adoption models (Latiff, 2024). Furthermore, the mental burden of tracking payments (a usage barrier) represents a significant cognitive cost, relating to the concept of "mental budgeting" (Ali et al., 2024), which many Saudi consumers are unwilling to bear.

Psychological barriers, particularly tradition and image, are profoundly significant in the Fintech Saudi context. Traditional barriers, rooted in religious principles, present a formidable impediment that can override utilitarian benefits. Suspicions regarding usury (*riba*) and non-compliance with Islamic finance principles cause immediate rejection, a finding that strongly supports research on the overriding influence of cultural and normative values on technology adoption in the Arab world (Al-Omoush et al, 2022). Concurrently, image barriers erode trust in BNPL providers, who are often perceived as less legitimate and secure than traditional banks. This lack of trust is critical, as it strikes at the very foundation of financial transactions (Cervi et al., 2023). The social image of BNPL as a tool for the financially irresponsible further conflicts with cultural values of prudence. The pronounced role of these psychological factors is a unique finding that underscores the necessity of cultural and religious adaptation for BNPL in Saudi Arabia.

Contextual barriers situate these functional and psychological concerns within the evolving Saudi environment. Technological barriers, prominent in the Knowledge phase, stem from a lack of digital self-efficacy (Khando et al, 2022) and concerns over data security. While the kingdom is rapidly digitizing, these digital literacy gaps persist. Environmental barriers, such as regulatory uncertainty and a perceived lack of market maturity and competition, further fuel hesitation. However, this context is dynamically changing. The Saudi Central Bank (SAMA) has initiated a licensing framework for BNPL providers, a pivotal policy response designed to standardize operations, enforce Sharia compliance, and build consumer confidence (SAMA, 2022). This regulatory formalization is a direct attempt to mitigate these contextual barriers, though consumer awareness of these protections remains a challenge.

The BNPL market in Saudi Arabia is expanding rapidly, propelled by a young demographic and national digitalization initiatives like Vision 2030. However, the barriers identified herein can significantly slow this growth and the broader diffusion of fintech. Fundamental unawareness of the mechanics of BNPL, rights, and regulations, and low digital self-efficacy hobble the Knowledge stage. This corresponds with the existing literature on fintech, which understands insufficient knowledge and poor levels of digital penetration as preliminary restricting circumstances of new markets. The Persuasion stage is the most critical, and we have forces of great functional and psychological barriers. The existing strong impression of financial risk and acute debt aversion is compounded by the deep-rooted anxieties about Sharia compliance. Trust, perceived risk, and religious compatibility are not only factors but also essential conditions to persuade Saudi consumers of the new financial innovations, as Al-Omoush et al. (2022) confirm. Unless BNPL is placed as Sharia-compliant explicitly and with credibility, skepticism will remain commonplace.

Moving to the Decision phase, the rejection is driven by a concrete evaluation of consequences. The core causes are functional: a calculated assessment of financial risk (e.g.," will this hurt my credit score?"), personal utility (e.g., "is this useful for my irregular income?"), and cognitive load (e.g., "can I manage the mental accounting?"). This rational decision-making process is well-documented as the core of adoption decisions for consumer credit (Ondolos et al, 2021). Finally, the Implementation phase reveals that adoption is not irreversible. Negative experiences with "unfair" terms (a value barrier) validate pre-adoption risk perceptions and lead to discontinuance, a phenomenon noted in studies of financial service complaints (Ambrocio et al, 2020). Similarly, poor user experience (UX) design, a technological barrier, can cause frustration and abandonment, highlighting that even after adoption, a poor interface can cause failure (Obieze et al, 2024). Although regulatory efforts by SAMA and innovation by providers are actively mitigating these barriers, significant challenges remain. Building lasting adoption requires a concerted focus on enhancing financial and digital literacy, ensuring absolute transparency and Sharia-compliance, and designing flawlessly intuitive user experiences to foster trust and demonstrate clear value.

This implies that one-dimensional strategies aimed at promoting the adoption of BNPL cannot be employed. Providers and policymakers should identify a specific intervention to each

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stage to diminish consumer hesitancy: educational interventions to demystify BNPL and establish digital literacy (Knowledge), open and transparent communication and strong consumer protections to develop trust and mitigate ethical concerns (Persuasion), straightforward and clear tools and guarantees to enable consumers to manage risk and perceive utility (Decision), and a pleasant first impression through user-friendly and intuitive platform design (Implementation). Finally, this phased nature of barriers is essential to understand in order to make the future of BNPL integration into the consumer financial space.

The occurrence of barriers is, however, of particular interest to cultural and contextual adaptation strategies. The findings revealed that psychological barriers, especially tradition and image, are the most pervasive at the persuasion level and significantly high in the Saudi context, according to cultural and religious systems. This realization that religious variables (especially those associated with Sharia-compliance and potential usury) could be more vital than utilitarian economic variables underlines the overall importance of cultural accommodation in the marketing of emerging fintech solutions in religiously conservative environments.

This aligns with Al-Omoush et al.'s (2022) findings on the profound influence of cultural values on technology adoption in the Arab world, but extends them by specifying exactly when these influences are most impactful in the adoption process. The research thus contributes to a more sophisticated understanding of how cultural factors interact with innovation characteristics at different stages of the ET decision-making process.

5.1 Implications for research

This research contributes in various ways to the current knowledge of FinTech innovation adoption, specifically in the market of emerging technologies with unique socio-cultural features. Exploring the obstacles to BNPL adoption in Saudi Arabia, the study offers valuable insights that are extended beyond the immediate context to inform the theoretical and practical application of FinTech innovations. This research's findings offer several theoretical implications that include:

1. This research provides an integrated view of the barriers to BNPL adoption by defining and classifying the barriers into three broad categories: functional, psychological, and contextual barriers. This three-level model is more insightful than previous studies that have tended to analyse single aspects of innovation resistance. By implementing the Innovation Resistance Theory (IRT) and Technology-Organization-Environment (TOE) framework, this research addresses the gap in the current literature by investigating the combined aspects of resistance at the individual and contextual levels. The functional barriers (usage, value, risk) and psychological barriers (tradition, image) correlate with the constructs of the IRT, and the contextual barriers (technological, environmental) bring the technological and environmental aspects of the TOE framework into a more comprehensive frame of analysis in the search for emerging fintech adoption problems. An example of such an integrated approach is a response to the critique that prior studies have addressed quantitative summaries or individual variables without attempting to capture the interaction between various forms of barriers (Abed and Alkadi, 2024; Mukherjee, 2025).
2. Barrier's occurrence time is one of the most innovative features of this study, as it was used to examine how barriers transpired in the course of innovation-rejection decision. By utilizing the Diffusion of Innovation Theory (DIT), this research provides a dynamic perspective of the resistance incidence and the development since it examines the impediments to the uptake of specific phases of the process (Knowledge, Persuasion, Decision, Implementation). According to this temporal mapping, the biggest barriers do not lie in the implementation step, but within the persuasion and decision steps when consumers are addressing deep-seated value, risk, and trust questions. It would contradict the overall implementation-based approaches and underline the significance of the targeted interventions at some points of the adoption pipeline. To illustrate, educational intervention is most relevant in the knowledge stage, and trust-building interventions in the persuasion stage. This incrementalist approach towards addressing impediments is a highly valuable addition to the one-size-fits-all strategies and renders policymaker resource allocation highly more effective.
3. The study offers methodological contributions by showing how qualitative and user-oriented approaches to the issues of emerging fintech adoption can be useful. While previous research has relied heavily on quantitative methods or analysis of user reviews (Mukherjee, 2025), the use of thematic analysis of rich interview data in this study offers deeper insights into the nuanced reasons behind adoption resistance, especially the cultural and psychological factors that are challenging to capture via quantitative methods alone.

5.2 Implications for practice

The practical implication of this study is substantial and offers clear guidance for both BNPL providers and policymakers.

1. For BNPL providers, this research suggests several targeted strategies: First, investing in digital financial education that specifically addresses the knowledge gaps identified in the study, particularly regarding BNPL mechanics, regulatory protections, and Sharia compliance aspects. Second, clearly communicating Sharia compliance through certification from recognized religious authorities and transparent explanations of how their products avoid riba (usury) and comply with Islamic finance principles. Third, simplifying onboarding processes and enhancing user interface design to reduce cognitive load and technological barriers, particularly for users with lower digital literacy. Fourth, strengthening post-adoption support systems to prevent discontinuation, including transparent communication about fees, flexible payment options, and accessible customer service.
2. For policymakers and regulators, this study highlights several important areas for action: First, developing cross-sector financial education campaigns that address both general financial literacy and specific knowledge about

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emerging fintech products like BNPL. Second, continuing to refine consumer protection frameworks specifically tailored to BNPL products, building on the initial regulatory steps taken by the Saudi Central Bank (SAMA, 2022). Third, establishing monitoring mechanisms for early detection of over-indebtedness patterns, particularly given the risk aversion and debt concerns identified in the study. Fourth, fostering competitive market conditions that encourage innovation while ensuring consumer protection, perhaps through regulatory sandboxes that allow for controlled innovation while managing risks.

6 Conclusion and Future Directions

This paper aimed to explore the complex obstacles that have been preventing the adoption of the emerging technology of BNPL services in Saudi Arabia. Using a qualitative thematic analysis through the lens of IRT, TOE framework, and DIT, the study was designed to understand user resistance effectively on a holistic level, filling a considerable gap in the literature solely dedicated to emerging markets and their distinct socio-cultural background. Findings indicate that the adoption of BNPL is hindered by a multi-stage process, in which various categories of barriers related to it occurred with different degrees of strength at the knowledge, persuasion, decision, and implementation stages.

Overall, this study is a detailed, time-sensitive perspective on the barriers to adoption of BNPL in Saudi Arabia that combines both theoretical and practical recommendations. This research allows promoting responsible adoption of fintech by identifying the exact timing and symptoms of the appearance of various types of barriers during the adoption process, as well as through more specific and effective interventions to address the issue, avoiding the need to undermine cultural and religious values. The strategies elaborated from the findings of this study could apply not only to BNPL but also to the Saudi setting and can be used to develop a model to understand the associated problems of fintech adoption in other emerging economies where strong cultural or religious backgrounds are established.

Although this study provides valuable insights, a number of limitations exist. First, the qualitative methodology, while providing rich insights into user perspectives, limits the generalizability of the findings. The sample size, though sufficient for thematic analysis, may not fully represent the diversity of the Saudi population. Second, as with all self-reported data, there may be discrepancies between stated concerns and actual behavior. Finally, the rapidly evolving nature of the BNPL landscape means that regulatory changes and market developments occurring after data collection may have altered some contextual barriers.

Based on these findings and limitations, several promising directions for future research emerge. First, there is a need for broader demographic inclusion in subsequent studies. Future research should specifically examine barriers among different age groups, income levels, and geographic regions within Saudi Arabia and other similar contexts. Including non-users who have never considered BNPL alongside former users who discontinued service would provide a more comprehensive understanding of the adoption spectrum. Second, longitudinal approaches would be valuable in tracking how barriers evolve as BNPL services mature and consumer familiarity increases. Such research could observe whether knowledge barriers diminish with market exposure and how persuasion barriers transform as regulatory frameworks become more established. Third, the quantitative assessment of barrier prevalence across larger and more diverse samples would complement this study's qualitative findings. Developing a validated scale to measure the specific barriers identified in this research would allow researchers to establish which barriers are most prevalent and how they interact statistically. This could include testing structural equation models to verify the relationships between barrier types and adoption outcomes. Fourth, as Saudi Arabia's regulatory environment continues to evolve, research should examine the impact of specific regulatory changes on BNPL adoption and user experience. The recent licensing framework introduced by SAMA represents a natural experiment in how government oversight affects consumer trust and market development. Future studies could employ quasi-experimental designs to measure changes in perception and adoption behavior before and after regulatory milestones. Fifth, comparative studies across MENA countries would help identify regional patterns and distinctions in BNPL adoption barriers. While Saudi Arabia shares cultural and religious commonalities with other Gulf states, there may be significant variations in financial literacy, digital infrastructure, and regulatory approaches that affect adoption patterns. Such comparative work could identify which barriers are region-wide versus country-specific, helping providers develop appropriately tailored strategies for different markets.

Institutional Review Board Statement

The study was approved by the Ethics Committee at Taif University [Institutional Review Board Statement] (47-014).

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Appendix

Appendix-A-1

INTERVIEW QUESTIONS

1. What challenges or difficulties do you see in using BNPL services compared to other payment options?
2. What are the specific issues of BNPL that seem complicated or confusing to you?
3. How do you feel about BNPL offering clear benefits compared to traditional payment or credit options? and Why?
4. How does the possibility of overspending or getting into debt affect your willingness to use BNPL?
5. Tell me more about the religious reasons that influence your view on using installment or deferred-payment services like BNPL?
6. What impression do you have about companies offering BNPL in Saudi Arabia?
7. How easy do you find it to use BNPL technology on websites or apps?
8. Describe when you first became aware of Buy Now Pay Later (BNPL) services?
9. What influenced your initial interest or hesitation?
10. Describe any challenges or doubts you experienced during your decision-making process to adopt BNPL.
11. What improvements or support did you rely on to help you overcome barriers you face during using the service?

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Appendix-A-2

SAMPLE OF THE THEMES AND CODES (ROUND-1)

Types of barriers	Themes	Description	Examples
Functional Barriers	Usage Barriers	Inhibitors that occur when users perceive BNPL as a misalignment to their established financial behaviors, routines, and habitual practices, or whether the complexity of the BNPL process discourages adoption. It includes behavioral resistance, a preference for cash or full payments, aversion to credit/deferred payments, and reluctance to alter routine practices	"For me, the idea of borrowing is always rejected except in difficult circumstances, I need to keep control over my financials. The case with BNPL is against my approach" (P 26).
	Value Barriers	Barriers relevant to users' perceptions about BNPL sufficient benefits compared to traditional credit cards or payment methods, especially considering factors like fees or interest.	"I have not previously bought things beyond my financial capacity, So with BNPL I don't see any benefits" (P 11).
	Risk Barriers	Potential uncertainty, social and economic risks caused by BNPL. It includes financial risk concerns such as fear of debt accumulation, fraud, or confidentiality breaches, emotional discomfort, anxiety about future obligations and concerns over being locked into commitments or losing control over spending.	"My issue with BNPL is the debt and commitment, so I decided not to use this payment method to avoid getting into debt that could hurt my credit history." (P8).
Psychological barriers	Tradition Barriers	Cultural or religious concerns that may create reluctance in adopting BNPL.	"I know that there is not a consensus on the legality of BNPL mechanism in Islam, whether it is permissible or forbidden, in this case it is better to stay away from what is questionable" (P 40).
	Image Barriers	Any stigma or negative associations attached to BNPL services such as trust issues or unfamiliarity with this newer payment method.	"I do not trust the procedures taken, and they [BNPL providers] do not take customer's interest seriously." (P 4).
Contextual barriers	Technological barriers	Any difficulties related to technological attributes of BNPL Apps or platforms like ease of use, security features, technological infrastructure or usability issues, digital literacy and technological readiness that affect adoption.	"My biggest issue with this payment method is my poor technical skills, I'm not confident to use the app particularly with sensitive data, my financials would be at risk I'm afraid" (P 5).
	Environmental barriers	Issues related to BNPL' s regulatory environment, market competition.	"I'm not fully aware, I understand that there's a need for governmental oversight to avoid consumer over-indebtedness, which aligns with economic stability goals, so I'm not considering using BNPL currently to avoid contributing to broader financial risk." (P 7).

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Appendix-A-3

SAMPLE OF THE THEMES AND CODES (ROUND-2)

	Themes	Description	Examples
Phase of adoption barriers	**Knowledge phase**	Refers to users' lack of awareness of BNPL, how it functions, and the context or tools used to conduct transactions via BNPL.	"I'm not fully aware of my rights as a customer, which makes me hesitant to use BNPL." (P 13).
	Persuasion Phase	Any attitude or opinion users form about BNPL which discourages its adoption. During this stage, users are not interested in seeking related information / details.	"I don't like it [BNPL] and I don't see its importance. It leads to accumulated debts and stress" (P 22).
	Decision phase	When users take the concept of change and weigh the advantage/ disadvantage benefits/ concerns of BNPL then decide to reject the adoption.	"I am used to paying immediately when I make a purchase and prefer to know that I have completed the entire transaction without having to think about future payments. I may feel anxious about committing to future payments, especially if my financial situation changes unexpectedly. Paying later may encourage me to buy more than I need, and I prefer to keep my spending within reasonable and thoughtful limits. I prefer to keep my financial dealings with a limited number of trusted sources and avoid engaging with new or additional financing companies." (P 14)
	Implementation phase	When users try BNPL to determine its usefulness and abandon its use based on their trial.	"During my first and only experience with BNPL, the provider imposed an additional fee on me for late payment I forgot to pay, I did not intend to miss the due date of payment, I felt it's not fair and decided to stop using it I as a purchase option" (P 20)