

EXPLORING CHALLENGES AND ENABLERS OF EMBEDDED FINANCE IN DIGITAL PLATFORMS



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Abstract

Embedded Finance incorporates financial products and services into non-financial applications, such that they can leverage an already flourishing consumer base as well as provide easy access to financial products to consumers. The current study aims to explore consumer awareness and adoption intent through a questionnaire. Furthermore, it aims to identify enablers and challenges faced by the adoption of embedded finance. A total of 415 responses through the survey were gathered for analysis. SPSS and MS Excel were used for data analysis.

Keywords: Embedded Finance, Digital Payments, Financial products, Consumer awareness, Adoption intention

Introduction

The idea of embedded finance (EmFi) enables companies, typically non-financial ones, to incorporate financial goods and services into their own operating systems through the use of an Application Programming Interface (API), a piece of software that facilitates communication between two programmes (Ozili, 2023). The incorporation of financial products and services into non-monetary platforms or apps, including smartphone apps, social networking platforms, or e-commerce websites, is known as embedded finance (Sieber, 2022). Without needing to go to a financial institution such as a bank, it enables users to connect to financial transactions while going about their regular business. Any travel destination or service company can incorporate financial services into their main products in accordance with client needs, thanks to embedded finance (Dresner et. al., 2022). This gives companies of all kinds fresh and efficient methods to add value through improving customer satisfaction, implementing tactics to boost revenue, and offering tailored budgeting. Lastly, the application of financial planning can render the customer's company unaware of the financial control of purchases.

Embedded finance generated \$20 billion in sales in developed nations, such as the US alone in 2021, which may be explained by the value of this integrated experience for clients (Dresner et. al., 2022). According to projections, the market could more than double in size over the course of

three to five years (Sieber, 2022). Many banks, payment companies, fintechs, shareholders, software companies, and possible marketers are unaware of what embedded finance entails, despite the magnitude of this possibility (Dresner et. al., 2022). The incorporation of monetary services into user-interaction platforms is what gives the upcoming phase of embedded finance its immense power (Latif, 2024). There are several options, including digital wallets, accounting software, e-commerce systems, and client retention programs. Using these interfaces to schedule workforce shifts, manage inventory, or purchase online makes obtaining financial services a logical progression of a nonfinancial experience for both customers and enterprises (Sieber, 2022). The reason embedded finance has expanded so dramatically in the US in recent years is because of this more deeply ingrained type.

Significant developments in technology, customer and dealer actions, and trade have made it possible for embedded finance to develop (Gomber et al., 2018). Opportunities to incorporate finance into nonfinancial interactions with customers have significantly increased as a result of the automation of company operations and commerce. Up to 33% of all card purchases worldwide, and 50% in the US, which now happen online, and many small and medium-sized enterprises in the US depend heavily on technology to run their operations (Dresner et. al., 2022). Additionally, as digital natives grew up,

more firms and customers were willing to use online resources for all of their banking needs (Latif, 2024). Lastly, by allowing independent fintech companies to access customers' banking information and even carry out operations on behalf of them, open-banking innovation which are backed by regulations in the European Union and market-led acceptance in the US, and has assisted in releasing latent consumption (Gupta et al., 2022).

EmFi's substantial influence on the banking and insurance industry serves as justification for further research. EmFi is an innovative model that is altering the manner in which financial services are provided as a result of the confluence of financial technology and innovation (Latif, 2024).

By giving consumers enhanced and interconnected access to financial services and goods, it has an opportunity to upend established financial services. In emerging economies like India, it is important to note down how much awareness among general population is present. For this study, we are recording participants' opinions about adoption, awareness, how they feel about this type of fintech, and any issues or difficulties that are restricting their uptake. Using surveys, the study also gathers user perspectives regarding the perceived function of the government in dealing with the issues and its role in advancing EmFi.

Literature Review

Given its obvious ability to revolutionize established financial institutions, EmFi has attracted a lot of attention lately. Generally speaking, this comprises an explanation of how different companies or financial products are directly integrated into another unconnected company's process to provide accessibility through straightforward methods like the provision of credit, insurance, as well as additional money acquisition services (Çalışkan, 2025).

The literature frequently discusses how technology has improved the concept of embedded finance. For instance, this relates to the creation of blockchain, artificial intelligence, and APIs. Caldecott (2023), for instance, emphasizes the use of APIs in creating interoperability systems that enable actual time

monetary transactions. According to Kleine et al. (2021), psychological triggers incorporated into sites boost the uptake of financial services such as buy-now-pay-later plans and microloan funding. These results demonstrate the pervasiveness of EmFi in everyday life for individuals.

Tuckman (2020) explains how blockchain offers transparency and secure alternatives for various EmFi applications. Furthermore, the EmFi is very cost-effective. Opportunities to acquire services, particularly credit and insurance facilities that were previously untapped, are made possible by this financial system. According to Law et al. (2019), fintech applications like M-Pesa have revolutionised financial services accessibility, especially in emerging nations. It generates financial prospects for small and medium-sized businesses as well as for individuals. Improving financial inclusion requires the democratisation of financial services. Organizational structures are changing as a result of EmFi (Çalışkan, 2025). Businesses create new revenue streams and improve client connections by integrating services.

According to Zhang et al. (2022), digital subscription-based marketplaces offer financing and insurance alternatives as part of their worth offering. These interfaces give clients more comprehensive and needs-based solutions in addition to facilitating wider access. Microfinance loans integrated into a health app or device insurance linked to a multimedia streaming service are two examples of intriguing financial tools that are aimed at meeting users' demands in their daily lives. Therefore, embedded finance improves the competitive landscape as well as the consumer experience of power of platforms, providing them with certain advantages over competitors. In the literature, a novel interface between EmFi and sustainability is being established. Roberts & Singh (2021) are among the experts who address the potential contribution of embedded financial products to environmentally friendly financing projects. Therefore, by providing emission reduction choices when linking monetary systems, businesses can encourage responsible customers. Gundogdu (2020) highlights topics related to Sharia compliance and explores how Islamic

finance concepts might distinguish themselves in EmFi solutions.

Additionally, EmFi varies greatly geographically across the established and emerging worlds. For instance, Singh & Mehta (2023) address the role of embedded finance in removing many of the obstacles to obtaining financing for small-scale farmers, and record how financing options incorporated into farming supply chains minimize differences between both urban and rural regions in nations like India.

Research Methodology

The purpose of this study is to gather and examine public opinions regarding embedded finance in applications. It would involve employing survey questionnaires for analysis using statistical methods. The study has examined individual's age, gender, geography, occupation, and opinion toward EmFi through the questionnaire. Google Forms was used for conducting the survey, and respondents from all

Assessing Awareness

around India were sent links. In order to gather comments, the questionnaire included multiple-choice questions. A total of 415 valid responses were collected. Microsoft Excel and SPSS are used to clean and examine the gathered dataset in order to conduct the analysis.

Research Results

Participants' choices and opinions were gathered for this study survey using a variety of questions. Here is a synopsis of the compiled details:

Demographic findings

Below is an overview of the participants, who came from a variety of backgrounds throughout India:

73.5% of people under the age of 35 are regarded as early adopters of any technology. 26% are women and 76.4% are men. 74% of them are employed, with 52.8% coming from metropolitan areas and the remainder from Tiers 2 and 3.

Table 1: Awareness Responses in Percentage

Sr No.	Survey Question	Responses		
		Yes	No	Not Sure
1	Have you heard of 'embedded finance' (financial services built into apps)?	81.9	13.5	4.6
2	Are you aware of the difference between traditional banking and embedded finance services?	46.7	45.8	7.5
3	Have you used services like BNPL in shopping apps, insurance in travel apps, or SIP in e-wallets?	81.4	10.1	8.4

A. Assessing Adoption

Table 2: Adoption Responses in Percentage

Sr No.	Survey Question	Responses		
		Yes	No	Not Sure
1	Have you ever used embedded financial services (e.g., loan on Amazon, insurance in Ola, SIP on PhonePe)?	34.2	63.6	2.2
2	Would you consider using such services in the future?	66.7	18.6	14.7
3	Would you use embedded finance services like BNPL, insurance, SIP, or credit in an app if available?	74.0	18.0	8.0

B. Assessing Opinion

Table 3: Assessing opinion on Likert Scale (Percentages)

The questions below were used to determine opinion regarding embedded finance from respondents:

Survey Question	Responses
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Sr No.		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	Embedded finance makes financial services more accessible.	0	3.1	2.2	36.6	31.1
2	I trust financial products embedded in popular platforms more than traditional banks.	0	3.1	14.7	66.7	15.4
3	Embedded finance is convenient and saves time.	1.44	12.3	27.5	46.5	12.3
4	I worry about the privacy of my financial data when using these services.	2.4	26.5	33.7	29.4	8.0
5	I prefer using financial services from a bank or NBFC, not via apps.	5.3	26.7	35.9	30.1	1.9

C. Enablers of Embedded Finance

Table 4: Agree percentage of Enablers of Embedded Finance

Sr No.	Enabler	Agree %
1	Easy access via apps	92.3
2	Pre-approved and fast onboarding	83.6
3	No need to visit a bank	87.2
4	Integration with daily-use platforms (Amazon, Zomato, Ola, etc.)	78.6
5	Cashback/reward incentives	29.6

F. Challenges of Embedded Finance

Table 5: Agree Percentage of Challenges faced in adoption of Embedded Finance

Sr No.	Challenge	Agree %
1	Lack of awareness	23.7
2	Fear of fraud or misuse	56.6
3	Data privacy concerns	65.8
4	Unclear Terms & Conditions	60
5	Low financial literacy	85.5



Fig 1: Survey Analysis of Embedded Finance

The results reveal that while the majority of respondents are above 35 years of age, it is prudent to say that the study is more focused on the younger population who are bound to be early adopters. While majority of respondents are aware of Embedded Finance, less than half have actually used it. However, in future they are willing to give it a try. Easy access, fast onboarding, less dependence on banks and integration with other applications emerged as enablers of this technology. However, its adoption is hindered by privacy concerns, security concerns, unclear terms and conditions, coupled with low financial digital literacy. The survey shows generally positive opinion of embedded financial services.

Conclusion

The findings of this study have significant implications for fintech companies, traditional financial institutions, regulators, and policymakers. The high level of awareness and willingness to adopt embedded finance shows that a strong opportunity for growth exists in this space. Fintechs and app developers should focus on seamless integration and user-friendly designs. Enhancing data privacy can lead to greater trust and encourage adoption. Traditional banks can benefit by partnering with platforms to remain relevant in a changing financial landscape. At the same time, the concerns around fraud, unclear terms, and low financial literacy highlight the urgent need for regulatory oversight and financial education initiatives. Addressing these challenges is essential to building a secure, inclusive, and trusted embedded finance ecosystem in India.

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