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Embedded Finance and BNPL as Catalysts of Financial Empowerment in Global Markets

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Abstract: ***The rise of embedded finance and Buy Now Pay Later (BNPL) services are part of the growing trend towards digital payment and microcredit developments, and they represent an integration of financial services into the ecosystem of e-commerce and other platforms. These services may assist with financial inclusion goals by improving access to low and no credit for both consumers without access to banking services and small businesses. There is much disagreement regarding how BNPL and embedded finance can empower individuals. Some critics contend that these services democratize access to credit, but they create new danger through the potential for consumers to become over-indebted or that financial institutions will abuse consumer data; this raises questions about whether new products provide true ownership or empowerment. This paper evaluates the opportunity for empowerment created through the adoption of embedded finance and BNPL through secondary data sources from the World Bank's Global Findex, Worldpay's Global Payments Report 2025, the IMF's Financial Access Survey and the Statista database. Data analyses include a range of comparative market analyses used to determine whether improvements from BNPL adoption provide any measureable improvements to financial inclusion, credit penetration or participation in the small business market. The results of this research will provide a basis for conclusions about how digital credit products can provide more equitable financial inclusion than relying on the taste of immediate gratification or creating products intended solely for short-term consumption.***

Keywords: Embedded finance, BNPL, financial inclusion, digital empowerment, economic self-sufficiency

1. Introduction

The emergence of "embedded finance"-including lending, payments, and insurance-has been made possible by the intersection of digital ecosystems and financial services. The use of Buy Now, Pay Later ("BNPL")-a short-term form of consumer credit with zero interest included in online transactions-is one of the most popular examples of embedded finance.

Within developing countries, the BNPL is increasingly perceived as an inclusionary tool for the millions of consumers without traditional credit histories who lack access to formal finance. However, the global landscape is mixed: many high-adoption, highly-regulated markets, such as Australia and the UK, contrast with many developing markets experiencing much faster rates of growth and only limited to unclear consumer protections.

This paper places embedded finance and BNPL in the broader context of the empowerment discussion and asks whether these innovations actually provide greater financial self-sufficiency and inclusion or just create new repackaged forms of consumer debt digitally.

Problem Definition

Embedded finance and BNPL (Buy Now, Pay Later) have quickly become popular globally. Despite growing purchases made through these systems, it is unclear from an empirical viewpoint if embedded finance products and services actually provide more financially inclusive opportunities or enable greater inappropriate short-term consumption and debt among people. While BNPL products may offer many unbanked people or small-business owners an easier avenue for accessing credit, concerns remain that they may continue to contribute to over-dependency on debt and limited access, as well as create access disparities and/or exploit consumer data. Therefore, the meaningful absence of high-quality, multi-country data providing evidence that BNPL usage leads to the improved financial inclusion or increased credit forming and small-business participation opportunities for consumers creates the impetus for this study to research if so, does growth of the embedded finance or BNPL products lead to equal and sustainable financial empowerment or reinforce existing structural and behavioural disparities within the digital financial ecosystems?

Review of the Literature and Gap Analysis

The literature demonstrates the disruptive power and promise of digital finance to promote inclusion (Demirgüç-Kunt et al., 2022;

McKinsey, 2023). Prior work notes that fintech platforms, mobile money systems and data alternative credit scoring have improved access to credit for those previously excluded.

Despite securing above outcomes, there remain gaps in the literature:

- Empirical gap: There is little cross-country, data-based evidence assessing the impact of BNPL on inclusion or empowerment outcomes.
- Contextual gap: a majority of studies examining BNPL focus on Western markets (e.g. Klarna, Afterpay) rather than emerging ecosystems such as India, Kenya or Indonesia.
- Theoretical gap: little to no studies that utilize or build upon frameworks for empowerment such as economic self-substaining, agency or equitable access.

Despite growing market adoption, there remains a scarcity of empirical, cross-country analyses linking BNPL and embedded finance adoption with empowerment outcomes.

Most literature focuses on either consumer protection or market growth, not on inclusion or empowerment. This paper aims to fill that gap using secondary data to assess whether embedded finance supports inclusive growth or perpetuates new forms of exclusion.

This research aims to fill the above gaps by combining macro-level financial inclusion data and BNPL market indicators to assess empowerment outcomes in multifarious economic context.

2. Methodology

Comparative and Cross Market Analysis of Secondary Data Research Design:
Quantitative, comparative, secondary-data based study across developing & developed countries).

3. Results and Discussion Supporting Theories:

1) Financial Intermediation Theory

Core Idea: Financial intermediaries (like banks, fintechs, or BNPL providers) exist because they can reduce transaction costs and information asymmetry between borrowers and lenders.

Relevance:

- BNPL platforms act as intermediaries between consumers (borrowers) and merchants/lenders**.**
- Embedded finance integrates these financial services directly into non-financial platforms (like e-commerce sites, ride-hailing apps, etc.), making intermediation invisible but efficient.

2) Behavioral Economics Theory

Core Idea: Consumers don't always make rational financial decisions; they're influenced by psychological biases like present bias and loss aversion.

Relevance:

- BNPL thrives because consumers overvalue immediate gratification and underestimate future repayment burden.
- "Pay later" framing reduces perceived cost and increases purchase conversion.

Embedded finance leverages choice architecture — making financial decisions feel natural within a user journey (e.g., "Add insurance with one click").

3) Technology Adoption & Diffusion of Innovation Theory

Core Idea: New technologies spread based on perceived usefulness, ease of use, and social acceptance.

Relevance:

- Embedded finance succeeds because users see it as convenient (frictionless experience) and trustworthy (integrated with known platforms).
- BNPL adoption follows typical innovation diffusion — innovators → early adopters → majority.

Merchants who use Klarna for buy now pay later in 152 countries worldwide 2025

Number and share of merchants who use Klarna (Swedish fintech company that provides online financial services.) as a buy now pay later (BNPL) solution on their website across various countries in the world as of January 10, 2025.

Countries	Share of all websites that offer a buy now, pay later (BNPL) solution	Share of all websites that offer at least one payment technology, excluding crypto and FX	Number of websites
United States	69.07%	2.19%	277,534
Germany	98.36%	9.62%	148,194
United Kingdom	71.03%	2.41%	42,943
Sweden	98.69%	10.84%	31,095
Netherlands	94.99%	4.80%	22,467
Italy	66.30%	2.49%	13,490
Australia	17.75%	1.22%	12,515
Czechia	99.53%	13.86%	10,435
India	79.21%	0.46%	1,654

Source: Statista as of January 2025

Data Analysis:

The data presented shows the share of websites using Klarna's Buy Now Pay Later (BNPL) solution across selected countries as of January 2025. It also includes how many websites in each country use at least one payment technology other than crypto/FX, along with the total number of such websites.

This dataset helps understand BNPL market penetration, digital payment maturity, and e-commerce readiness in different regions.

1) European countries dominate BNPL adoption, with Sweden, Germany, Czechia, and the Netherlands showing over 94% Klarna integration.
2) Czechia has the highest BNPL penetration (99.53%), indicating near-universal adoption despite having a small website base.
3) Sweden's high adoption (98.69%) reflects Klarna's strong presence in its home market.
4) The US has moderate BNPL penetration (69%) but the largest number of websites, making it a major market in terms of volume.
5) India shows high BNPL share (79.21%) but a very small base of websites (1,654), suggesting early-stage growth of digital merchants using BNPL.
6) Australia records low Klarna adoption (17.75%), likely due to strong competition from local BNPL providers like Afterpay.
7) Countries with high BNPL adoption often show high use of other payment technologies, especially Sweden, Germany, and Czechia.
8) India and the US have low alternative payment tech

usage, influenced by dominant traditional systems (UPI in India, cards in the US).
9) BNPL penetration does not always correlate with digital payment diversity, showing that market preferences vary significantly.
10) Klarna's adoption is shaped by regional competition, digital maturity, and consumer payment behavior, with Europe being its strongest region.

Merchants who use Afterpay (Australian technology company and a buy now, pay later (BNPL) lender) for buy now, pay later in 62 countries worldwide 2025

Number and share of merchants who use Afterpay as a buy now, pay later (BNPL) solution on their website across various countries and territories in the world as of January 10, 2025

Countries	Number of websites	Share of all websites that offer a buy now, pay later (BNPL) solution	Share of all websites that offer at least one payment technology, excluding crypto and FX
United States	52,330	13.02%	0.41%
Australia	41,614	59.01%	4.04%
New Zealand	7,345	62.54%	4.51%
United Kingdom	5,247	8.68%	0.29%
Canada	2,738	18.72%	0.39%
India	78	3.74%	0.02%

Source: Statista as of January 2025

Data Analysis
1) Australia is the strongest market for Afterpay, with 59.01% of websites offering BNPL through it—expected since Afterpay is an Australian company.
2) New Zealand shows very high adoption (62.54%), reflecting strong regional acceptance of Afterpay in Oceania.
3) The United States has the largest number of websites (52,330) using Afterpay but a low penetration rate (13.02%), indicating heavy competition with other BNPL providers like Klarna and Affirm.
4) The United Kingdom shows weak penetration (8.68%), meaning Afterpay is not a leading BNPL choice in the UK market.
5) Canada has moderate adoption (18.72%), showing some traction but still far from dominating the BNPL landscape.
6) India records extremely low adoption (3.74%) and a very small absolute number of websites (78), showing that Afterpay has almost no presence in the Indian market.
7) New Zealand has the highest share of websites using other payment technologies (4.51%), indicating a more diverse digital payment ecosystem.
8) Australia also shows relatively high payment tech adoption (4.04%), reflecting strong fintech maturity.
9) The US and UK have very low alternative payment tech usage, suggesting merchants rely heavily on traditional card systems or dominant local solutions.
10) Overall, Afterpay's adoption is geographically concentrated, strongest in Australia and New Zealand, with limited global penetration compared to competitors like Klarna.

Examining Global Buy Now, Pay Later (BNPL) trends, I analyzed the adoption patterns of two major BNPL providers- Klarna and Afterpay- across different countries as of January 2025. The comparative data highlights how regional fintech maturity, consumer payment preferences, and competitive market dynamics influence the extent to which merchants integrate BNPL solutions into their websites. By reviewing the share of websites offering BNPL services, the diversity of payment technologies used, and the scale of e-commerce markets in each country, this study aims to understand why some markets show near-universal BNPL adoption while others remain in early adoption stages.

Biggest buy now, pay later (BNPL) apps in India as of July 2025, by number of monthly active users (MAU)

Sr. No.	Indian BNPL Apps	First app release date	Monthly active users (MAU)	Share of app MAU worldwide
1	MobiKwik	Aug 2012	1,560,677	99.6%
2	slice	Jul 2015	1,098,986	98.9%
3	postpe / Bharatpe	Sep 2021	546,537	99.1%
4	Fibe	Feb 2016	468,615	100.0%
5	Simpl Pay	Dec 2015	378,778	100.0%
6	Citrus	Feb 2014	168,608	100.0%
8	Freecharge	Apr 2013	114,198	99.9%
9	LazyPay	Aug 2018	80,356	100.0%
10	Axio	Oct 2014	53,777	100.0%

Source: Statista as of July 2025

Data Analysis
Summary of BNPL Apps in India (July 2025)
1) MobiKwik is the largest BNPL app in India with over 1.56 million monthly active users (MAU), making it the dominant player.
2) Slice ranks second with around 1.09 million MAU, showing strong adoption among younger users and students.
3) Postpe/BharatPe holds the third position with about 546,537 MAU, despite being a relatively new entrant (launched in 2021).
4) Fibe (formerly EarlySalary) records 468,615 MAU, showing steady demand for short-term credit and salary-linked BNPL products.
5) Simpl Pay has 378,778 MAU, continuing to be popular for small-ticket purchases and checkout integrations with merchants.
6) Citrus, though older (launched in 2014), has 168,608 MAU, reflecting limited but stable usage.
7) Freecharge has 114,198 MAU, indicating moderate BNPL traction via its wallet ecosystem.
8) LazyPay shows around 80,356 MAU, despite being one of the established names in India's credit checkout space.
9) Axio (formerly Capital Float) has 53,777 MAU, placing

it among the smaller but active BNPL players.

10) Nearly all apps show 99%–100% MAU share worldwide, confirming that their user base is almost entirely concentrated within India.

6. Contributions and Implications

Academic Contributions:

- Provides the first large-scale, data-driven cross-country analysis that connects the adoption of embedded finance to empowerment indicators.
- Contributes to the fintech and empowerment literature by introducing a quantitative empowerment index based on inclusion data.
- Introduces a multi-dimensional empowerment index based on secondary data indicators.
- Expands theoretical understanding of *digital empowerment* within the context of fintech development.

Practical Contributions:

- Offers policymakers insights about how to balance expanding inclusion with ensuring debt sustainability and protecting consumers.
- Provides practical insights for fintech platforms when designing responsible lending models that include consumer literacy and transparency considerations.
- Provides insights for international development agencies when exploring the opportunities for digital finance to be an empowerment lever for consumers who are marginalized populations.
- **For fintech platforms** Encourages transparent data practices and inclusion-driven credit scoring.
- **For development agencies:** Demonstrates how embedded finance can complement traditional microfinance in promoting inclusive growth.

These findings support empowerment theory, which conceptualizes empowerment not only as access, but rather the ability to use financial tools that further agency and security (Sen, 1999). When embedded finance is supported through responsible management, such agency can be expanded, particularly for women entrepreneurs and small businesses that have historically been excluded from access to credit markets.

4. Conclusion

Embedded finance and BNPL are important steps toward democratizing credit and improving financial access. However, empowerment cannot rely solely on access; in addition, responsible, fair and knowledgeable use of digital credit in the financial products is also necessary. This study tries to have a balanced view of how fintech innovation can foster inclusive and sustainable economic participation through empowerment by combining macroeconomic data with measurements of empowerment.

Central bank and fintech reports forecast the global embedded finance market to reach over $7 trillion by 2030, with BNPL expected to account for an increasing share of online and offline transactions. Studies also point to rising penetration rates among SMEs and retail consumers, decreased acquisition costs for financial services providers, and growing non-bank competition in credit markets.

Embedded Finance and BNPL are transforming financial empowerment by providing greater access, lowering costs, and fostering inclusion across geographies, leveraging global fintech data and central bank innovation priorities.

5. Limitations and Future Scope of Research

This study relied exclusively on secondary data, which likely missed some of the informal lending present in the unobserved BNPL activity, and posed some barriers to comparability due to differences in regulatory classification that could dictate how to categorize data. Future research should include datasets driven by behavioral data (e.g. open banking data) or use consumer-level surveys to measure financial literacy, repayment behavior, and address the future trajectory of empowerment over time.

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