Financial Technology and Innovation

♦ ISSN: 2836-5372 Vol: 04, No. 01, 2024 ♦ PP. 18–24

Article DOI: https://doi.org/10.54216/FinTech-I.040103

FULL LENGTH ARTICLE

Portfolio Maturity and Product-Category Headroom in Consumer FinTech Markets

Ahmed Ibrahim Mokhtar[1,*] **Saad Metawa**[2]

[1] Ecole Supérieures Libre des Sciences Commerciales Appliquées, 75019 Paris, France

[2] Mansoura University, Mansoura 35516, Egypt

Emails: Ahmed.moktar11@yahoo.com · s_metawa@mans.edu.eg

Received: January 30, 2024 Revised: March 30, 2024 Accepted: June 29, 2024 ⋆ Corresponding author

ABSTRACT

Consumer FinTech markets are commonly assessed through aggregate adoption rates, yet adoption alone does not indicate whether a market can support portfolio expansion, cross-selling, or durable customer-value creation. This paper proposes a portfolio maturity framework that separates market penetration from product-category headroom. Using a structured extract from a global consumer FinTech adoption survey, the study examines market dispersion, relative maturity, category-level adoption gaps, and tier-specific expansion opportunities. The findings show that payment and transfer services act as the principal entry point into consumer FinTech, while saving, investment, budgeting, insurance, and borrowing remain unevenly developed. High-adoption markets require strategies focused on relationship depth, ecosystem defense, retention, and responsible product broadening; lower-adoption markets require clearer value proof, trust formation, and reduction of onboarding friction. The study offers a business-oriented diagnostic approach for FinTech firms, banks, platform providers, and investors by translating adoption evidence into portfolio strategy, market-tier priorities, and risk-aware expansion choices.

Keywords: Financial technology ▪ Consumer adoption ▪ FinTech strategy ▪ Platform business ▪ Portfolio maturity

1. INTRODUCTION

Consumer FinTech adoption is often discussed as a sign of digital transformation in financial services. This view is valid, but incomplete. A market with a large number of digital payment users may still lack depth in savings, investment, budgeting, insurance, or borrowing services. Conversely, a market with moderate adoption may contain customer segments that are ready for carefully targeted product expansion. For business decision-making, the central question is therefore not only whether consumers use FinTech, but whether use can mature into a broader and more resilient financial relationship.

This paper examines FinTech adoption as a portfolio maturity problem. The term portfolio maturity refers to the degree to which a market combines broad consumer adoption with the capacity to support multiple digital financial service categories. The concept is useful because it prevents a common strategic error: treating a high adoption rate as automatic evidence of readiness for all FinTech products. Payment use may provide a gateway, but it does not remove the need for trust, suitability, regulatory discipline, and customer understanding when firms expand into higher-risk categories.

The analysis is business-oriented. It interprets consumer adoption data as evidence for market positioning, product sequencing, customer relationship depth, and risk-aware scaling. The study develops a Portfolio Maturity Score and a tier-category headroom matrix to distinguish markets that require onboarding and value proof from those that are ready for product broadening and ecosystem strategy. The frame-

work does not rank markets as universally superior or inferior; it identifies the managerial posture that best fits each adoption condition.

The paper proceeds in five stages. It first reviews relevant work on FinTech ecosystems, digital finance, adoption forces, and platform economics. It then describes the dataset and derived measures. The proposed maturity model is presented mathematically, followed by empirical results on market dispersion, category dynamics, and tier-level strategy. The final sections discuss portfolio governance, managerial implications, and future extensions of the framework.

2. RELATED WORK

FinTech research has developed around several complementary themes. Gomber et al. [1] frame digital finance and FinTech through the interaction of business functions, technologies, and institutions. Their perspective is important for this study because portfolio maturity depends not only on a digital product, but also on the business function it serves and the institutions that enable trust and use. Lee and Shin [2] similarly present FinTech as an ecosystem of start-ups, technology developers, government, customers, and traditional financial institutions. Their ecosystem view supports the present paper's argument that adoption should be interpreted as a market system rather than as a single product metric.

The adoption literature also emphasizes that consumer FinTech use is shaped by both access and capability. Mahmud et al. [3] examine FinTech adoption factors using a country-wide representative sample from an emerging economy and show that adoption cannot be explained by demographics alone. Alsmadi et al. [4] analyze fintech payment adoption from a technology-acceptance perspective and highlight the roles of usefulness, ease of use, risk, and trust. These findings support the present paper's argument that adoption should be interpreted as a market-system indicator rather than a narrow product metric.

Digital financial-service studies further highlight the centrality of payment, banking, wallet, trust, and security factors. Neves et al. [5] synthesize evidence on the adoption and use of digital financial services and identify perceived usefulness, ease of use, security, and trust as important facilitators. This supports the portfolio-maturity lens used here: payment adoption may create an entry point, but wider product expansion requires stronger confidence, suitability, and repeated-use value.

The platform and regulatory literature adds a further dimension. Arner et al. [6] describe FinTech as part of a broader post-crisis transformation of finance, while the Financial Stability Board [7] reviews potential financial-stability implications of BigTech activity in finance. Together, these studies support the portfolio-maturity framing adopted here: once consumers accept digital financial interfaces, the strategic question becomes how to responsibly widen the relationship while managing data, competition, conduct, and product-risk concerns.

Table 1 shows that the present paper does not treat FinTech adoption as a purely consumer-preference issue. The cited work points to a broader interpretation in which adoption reflects trust, technology acceptance, product suitability, platform scale, regulatory context, and institutional readiness. This is why the model developed below combines market position with product-category headroom.

3. DATA AND ANALYTICAL DESIGN

The analysis uses a structured extract from the EY global consumer FinTech adoption survey. The market-level dataset contains 27 markets and one core indicator: the share of digitally active consumers who used at least two FinTech services. The category-level dataset contains five product categories and three survey waves. The package accompanying this paper includes the processed CSV files and the Python code used to reproduce all calculations and figures.

Two design choices guide the analysis. First, markets are analyzed as business environments rather than as demographic samples. The goal is to identify strategic differences among adoption contexts. Second, product categories are analyzed as a portfolio rather than as isolated verticals. A strong payments base may be a gateway to broader financial services, but it may also create overconcentration if firms fail to expand responsibly into saving, investment, insurance or credit.

Table 2 shows that market ranking and business interpretation are not identical. Markets above the reported average require strategies that protect scale and deepen customer relationships. Markets below that level require stronger value proof, trust-building, customer education, and sharper product-market fit. The distance column is useful because it reveals where an adoption rate is only slightly below the reference line and where it reflects a more fundamental formation-stage challenge.

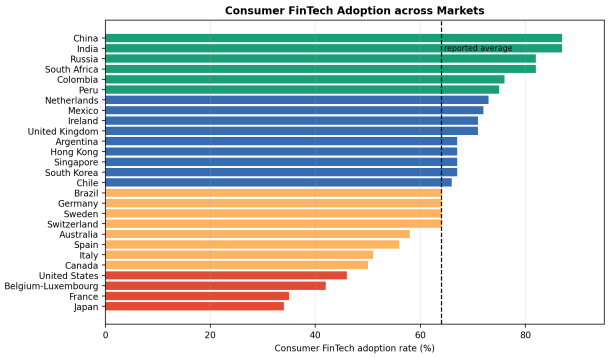

Figure 1. Consumer FinTech adoption rates across markets, grouped by strategic adoption tier.

Figure 1 visually confirms the wide spread in adoption. The frontier group is led by markets with adoption above three quarters of the digitally active consumer base, while the formation group remains well below the reported average. The figure also shows that several advanced economies are not automatically frontier FinTech markets. This is strategically important because strong formal financial systems can coexist with slower consumer movement toward FinTech providers.

4. PROPOSED PORTFOLIO MATURITY MODEL

Let a_i be the consumer FinTech adoption rate of market i, and let r_i be the rank of that market among N markets. A

Table 1. Research streams informing the portfolio maturity lens.

Source	Research focus	Main contribution	Use in this paper
Gomber et al. [1]	Digital finance research	Structures FinTech around business functions, technologies, and institutions.	Supports the institutional and strategic framing of portfolio maturity.
Lee and Shin [2]	FinTech ecosystem	Explains key ecosystem actors and FinTech business models.	Frames market maturity as an ecosystem and platform problem.
Mahmud et al. [3]	FinTech adoption factors	Examines adoption factors in an emerging economy using a country-wide representative sample.	Frames adoption as a multi-factor business and consumer process.
Alsmadi et al. [4]	Payment adoption	Studies fintech payment adoption through technology-acceptance determinants.	Supports the role of payments as an entry point into broader FinTech use.
Neves et al. [5]	Digital financial services	Synthesizes barriers and facilitators for digital banking, digital payments, and digital wallets.	Supports the role of trust, security, usefulness, and ease of use in market maturity.
Arner et al. [6]	FinTech transformation	Positions FinTech within post-crisis financial-sector transformation.	Supports the strategic rather than purely technical framing.
Financial Stability Board [7]	BigTech and finance	Reviews potential benefits and risks of large technology platforms in finance.	Supports the governance and risk-control layer of the model.

Table 2. Market-level consumer FinTech adoption extract used in the analysis.

Market	Adoption	Rank	Distance	Maturity	Tier	Strategic focus
China	87	1	23	90.64	frontier	platform bundling and ecosystem defence
India	87	2	23	89.60	frontier	platform bundling and ecosystem defence
Russia	82	3	18	84.96	frontier	platform bundling and ecosystem defence
South Africa	82	4	18	83.92	frontier	platform bundling and ecosystem defence
Colombia	76	5	12	78.56	frontier	platform bundling and ecosystem defence
Peru	75	6	11	76.80	frontier	platform bundling and ecosystem defence
Netherlands	73	7	9	73.56	advanced	cross-selling and service expansion
Mexico	72	8	8	71.80	advanced	cross-selling and service expansion
Ireland	71	9	7	70.04	advanced	cross-selling and service expansion
United Kingdom	71	10	7	69.00	advanced	cross-selling and service expansion
Argentina	67	11	3	65.08	advanced	cross-selling and service expansion
Hong Kong	67	12	3	64.04	advanced	cross-selling and service expansion
Singapore	67	13	3	63.00	advanced	cross-selling and service expansion
South Korea	67	14	3	61.96	advanced	cross-selling and service expansion
Chile	66	15	2	60.20	advanced	cross-selling and service expansion
Brazil	64	16	0	57.40	mainstream	trust-building and activation
Germany	64	17	0	56.36	mainstream	trust-building and activation
Sweden	64	18	0	55.32	mainstream	trust-building and activation
Switzerland	64	19	0	54.28	mainstream	trust-building and activation
Australia	58	20	-6	48.92	mainstream	trust-building and activation
Spain	56	21	-8	46.44	mainstream	trust-building and activation
Italy	51	22	-13	41.80	mainstream	trust-building and activation
Canada	50	23	-14	40.04	mainstream	trust-building and activation
United States	46	24	-18	36.20	formation	education, onboarding and value proof
Belgium-Luxembourg	42	25	-22	32.36	formation	education, onboarding and value proof
France	35	26	-29	26.28	formation	education, onboarding and value proof
Japan	34	27	-30	24.52	formation	education, onboarding and value proof

leadership index is defined as

$$L_i = 100\left(\frac{N - r_i + 1}{N}\right). \tag{1}$$

The Portfolio Maturity Score is then calculated as

$$PMS_i = 0.72a_i + 0.28L_i. \tag{2}$$

The model deliberately gives more weight to actual adoption than to rank position, while still acknowledging that relative position matters for competitive strategy. The tier assignment is based on the adoption rate:

$$T_i = \begin{cases} \text{frontier}, & a_i \geq 75, \\ \text{advanced}, & 65 \leq a_i < 75, \\ \text{mainstream}, & 50 \leq a_i < 65, \\ \text{formation}, & a_i < 50. \end{cases} \tag{3}$$

The model also measures product-category headroom. Let c_j be the latest observed adoption rate of category j. The headroom for category j is

$$H_j = 100 - c_j. \tag{4}$$

For each market tier t, a tier-category opportunity score is calculated as

$$O_{tj} = \bar{a}_t\left(\frac{H_j}{100}\right), \tag{5}$$

where $\bar{a}_t$ is the mean adoption rate in tier t. This score is not a forecast. It is a diagnostic indicator showing where a reasonably active FinTech market still has product-category space for expansion.

Table 3. Operational interpretation of the portfolio maturity model.

Model element	Business meaning	Decision use	Risk control
Adoption rate	Breadth of consumer FinTech use	Classify market readiness and onboarding challenge	Avoid interpreting first use as full relationship depth
Leadership index	Relative position among comparable markets	Identify competitive strength and market-system momentum	Avoid rank-only conclusions when adoption is low
Portfolio Maturity Score	Combined adoption and relative-position indicator	Compare market scaling posture across tiers	Use as diagnostic evidence, not as a profitability forecast
Product headroom	Category space not yet converted into adoption	Identify product areas for responsible expansion	Separate opportunity from suitability and conduct risk
Tier-category opportunity	Interaction between tier readiness and category gap	Prioritize category sequencing within each market tier	Apply stricter controls to credit, insurance, and investment categories

Table 3 clarifies how the proposed measures are intended to be used. The framework is not a mechanical recommendation engine. It provides structured evidence for managerial judgment by separating scale, relative position, and product-category headroom. This distinction is important because expansion into adjacent financial services may be commercially attractive but inappropriate unless customer understanding, compliance controls, and trust conditions are adequate.

5. RESULTS AND BUSINESS INTERPRETATION

The first result concerns market dispersion. Table 4 reports summary statistics for the adoption distribution.

Table 4. Dispersion metrics for market-level consumer adoption.

Metric	Value
Mean adoption	64.296
Median adoption	67.000
Standard deviation	15.387
Minimum	34.000
Maximum	87.000
Range	53.000
Coefficient of variation	0.239
Adoption gini	0.137

Table 4 shows a sizeable range between the highest and lowest markets. The mean and median are close, but the standard deviation indicates that strategic conditions differ materially. The coefficient of variation shows that adoption dispersion is large enough to justify differentiated market entry and portfolio strategies. A single global FinTech playbook would therefore be too blunt.

Table 5. Adoption and maturity summary by strategic tier.

Tier	Markets	Mean adoption	Min	Max
frontier	6	81.50	75	87
advanced	9	68.67	66	73
mainstream	8	58.88	50	64
formation	4	39.25	34	46

Table 5 converts a long market list into strategic conditions. Frontier markets already have broad consumer familiarity with FinTech and require strategies that deepen relationships and defend ecosystem position. Advanced markets are suitable for selective expansion into adjacent services. Mainstream markets require activation and trust-building, while formation markets require simple use cases that demonstrate practical value before broader product expansion.

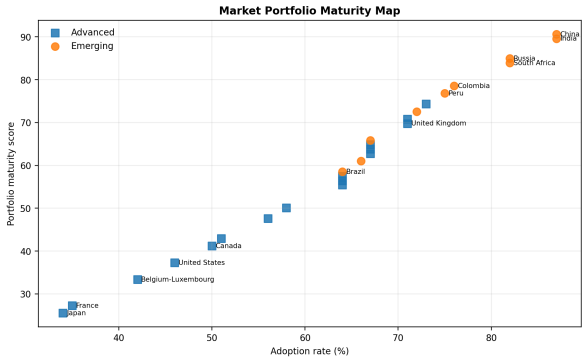

Figure 2. Market portfolio maturity map linking adoption strength and relative market leadership.

Figure 2 plots adoption against the Portfolio Maturity Score. The relationship is intentionally strong because adoption is the primary evidence of market maturity. The value of the figure lies in the separation of business situations. A high-position emerging market signals a different opportunity from a lower-position advanced economy. In the first case, the question is how to build a multi-product ecosystem around active users. In the second, the question is often how to overcome inertia, trust concerns, or weaker perceived need.

Table 6. Adoption summary by broad market type.

Market type	Markets	Mean	Median	SD
Emerging	10	75.10	75.50	8.02
Advanced	17	57.94	64.00	12.17

Table 6 shows that adoption is not automatically higher in advanced financial markets. The emerging-market mean is much higher than the advanced-market mean in this dataset. This finding is consistent with the argument that unmet demand and mobile-first financial habits can accelerate FinTech adoption. For managers, the implication is clear: market opportunity should be assessed through actual consumer behaviour rather than through income status or banking maturity alone.

6. PRODUCT CATEGORY PORTFOLIO ANALYSIS

The second part of the analysis examines product categories. Table 7 reports adoption in three survey waves, absolute gain, recent gain and the gap to the payments category.

Table 7 shows that payments are the entry point of consumer FinTech. The category has the highest latest adoption and the largest absolute gain. Savings and investments form the second strongest category, while budgeting, insurance and borrowing lag further behind. The business implication is not that lower-adoption categories are unattractive. Rather, they require different trust and suitability designs because consumers may be more cautious when moving from transactions to stored value, advice, insurance, or borrowing.

Table 7. Product-category adoption dynamics.

Category	Early wave	Middle wave	Latest wave	Absolute gain	Recent gain	Gap to payments
Money transfer and payments	18	50	75	57	25	0
Savings and investments	17	24	48	31	24	27
Budgeting and financial planning	8	20	34	26	14	41
Insurance	8	10	29	21	19	46
Borrowing	6	10	27	21	17	48

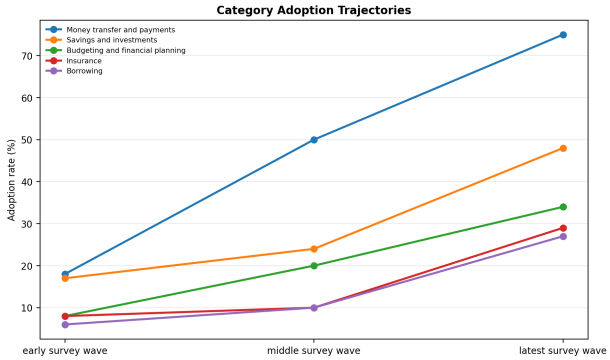

Figure 3. Adoption trajectories across product categories.

Figure 3 reinforces the same pattern. Payments moved fastest and now sit well above the other categories. Savings and investment services show substantial growth, while the remaining categories grow from a lower base. This pattern suggests a portfolio sequence: payments create frequency and trust, savings and investments create account depth, and insurance or credit require more careful governance because consumers face higher risk of misunderstanding, mis-selling or overextension.

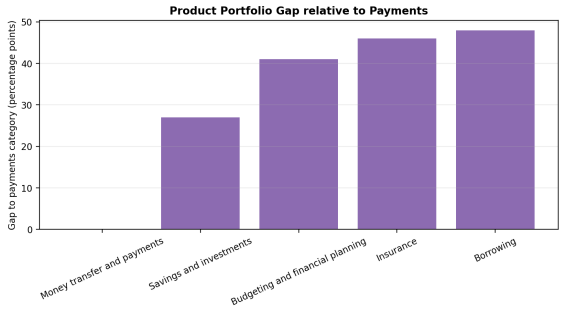

Figure 4. Product-category headroom measured as the gap to the payments category.

Figure 4 makes product headroom visible. Borrowing and insurance have the largest gaps to the payments category, followed by budgeting and financial planning. These gaps should not be read as automatic growth forecasts. They show where consumer behaviour remains less developed and where firms need stronger education, risk disclosure, product design and trust signals before expecting payment-level scale.

7. MARKET TIER AND PRODUCT STRATEGY

The tier-category opportunity matrix combines adoption tier with category headroom. Table 8 reports the resulting diagnostic scores.

Table 8 highlights a managerial paradox. Frontier markets have high adoption, but they also have the strongest headroom scores in non-payment categories because they have active consumer bases that can be introduced to broader products. Formation markets have product gaps too, but lower adoption makes immediate portfolio expansion less attractive. Firms should therefore separate product gap from market readiness.

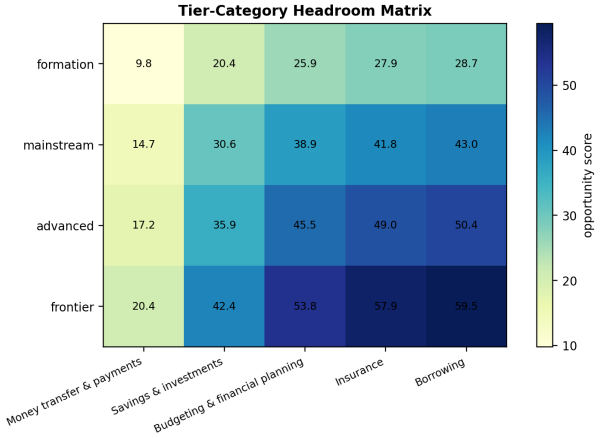

Figure 5. Tier-category opportunity heatmap for consumer FinTech portfolio expansion.

Figure 5 visualizes the matrix. The strongest scores appear in frontier and advanced tiers for categories with lower adoption than payments. This suggests that mature FinTech markets should not stop at payment services. However, expansion into borrowing and insurance should be governed differently from expansion into budgeting or savings tools because the former categories carry higher conduct and suitability risks.

Table 9 translates the analytical results into business decisions. The same product category can require different actions in different market tiers. Payment services in frontier markets involve ecosystem defence, whereas payment services in formation markets involve value proof and first-use success. Borrowing is attractive in terms of headroom, but it is also a category where aggressive scaling can produce consumer harm if suitability and transparency are weak.

8. PORTFOLIO RISK AND GOVERNANCE IMPLICATIONS

Market maturity creates opportunity, but it also changes risk. When consumers use FinTech mainly for payments, product risk is relatively narrow and operational reliability is central. As firms extend into savings, investment, insurance and borrowing, the business model becomes more valuable but also more sensitive to customer understanding, data use, suitability, cyber risk, and consumer protection.

Table 8. Tier-category headroom matrix.

Tier	Payments	Savings/invest.	Budgeting	Insurance	Borrowing
formation	9.8	20.4	25.9	27.9	28.6
mainstream	14.7	30.6	38.9	41.8	43.0
advanced	17.2	35.7	45.3	48.8	50.2
frontier	20.4	42.4	53.8	57.9	59.5

Table 9. Strategic actions by market tier and product area.

Tier	Product area	Business action	Main risk	Management metric
frontier	payments	Defend scale and bundle services	Network effects and platform lock-in	Multi-product relationship depth
frontier	investment and saving	Move from transaction use to stored value	Regulated advice and customer suitability	Asset balance growth
advanced	payments	Increase merchant and recurring bill penetration	Price competition and commoditisation	Frequency of active use
advanced	insurance and credit	Test adjacent propositions with partner distribution	Trust, risk underwriting and compliance	Cross-sell conversion
mainstream	payments	Lower onboarding friction and improve trust cues	Cash preference and low perceived benefit	First recurring transaction
mainstream	budgeting	Position as control and transparency product	Low willingness to share data	Monthly active engagement
formation	payments	Prove simple value and safety before product breadth	Low familiarity and poor confidence	First successful transfer
formation	borrowing	Delay aggressive scaling until trust base improves	Mis-selling and customer harm	Responsible acceptance rate

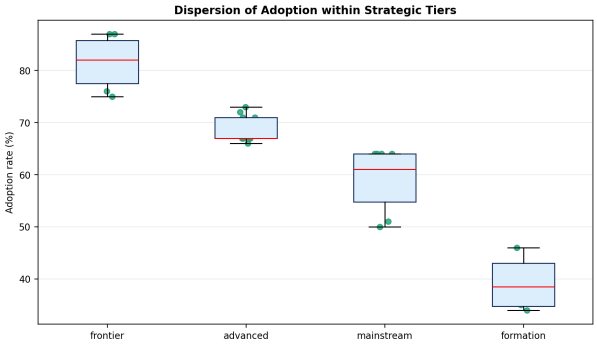

Figure 6. Distribution of adoption rates within strategic tiers.

Figure 6 shows that the tiers are not equally dispersed. Frontier and formation groups are relatively concentrated around their distinctive adoption levels, while the mainstream group covers a broader range. This matters for governance because mainstream markets may contain a mix of highly engaged digital users and more cautious users. A single product rollout may therefore produce uneven outcomes within the same market.

Table 10. Management interpretation of adoption-tier conditions.

Tier	Primary business question	Recommended management posture	Risk emphasis
frontier	How can breadth become durable relationship value?	Bundle services, protect trust and deepen engagement.	Data governance and platform dominance.
advanced	Which adjacent services can scale responsibly?	Test category expansion with partner and compliance controls.	Suitability and customer understanding.
mainstream	How can first use become repeated use?	Reduce friction, improve trust cues and clarify benefits.	Drop-off and low perceived value.
formation	Why are consumers reluctant to use FinTech?	Simplify onboarding and demonstrate everyday usefulness.	Miscommunication and trust deficit.

Table 10 connects tier evidence to executive questions. It is meant to prevent a common strategic error: applying frontier-market playbooks to formation markets. The governance posture should become more sophisticated as product breadth increases. Payment adoption alone may be managed through reliability and convenience, but portfolio adoption requires stronger risk communication and customer protection.

9. DISCUSSION

The findings support three business conclusions. First, FinTech market attractiveness should not be measured by adoption rate alone. Adoption rate identifies scale, but product-category gaps identify the next strategic opportunity. A market with high adoption and large category gaps may be more attractive for portfolio expansion than a market with moderate adoption and no clear category pathway.

Second, payment adoption is both an achievement and a strategic constraint. It provides a gateway to consumer trust and frequent interaction, but it can also trap firms in low-margin transaction services if they fail to create credible adjacent propositions. Savings, investment, budgeting, insurance and borrowing require different forms of customer confidence. Moving from payment to portfolio is therefore a trust-management challenge as much as a product-design challenge.

Third, emerging markets should not be treated simply as late-stage followers of advanced markets. In the dataset analyzed here, several emerging markets occupy the frontier tier. This challenges a traditional assumption that FinTech diffusion begins in high-income financial centers and later spreads elsewhere. The evidence is more consistent with a demand-led view: where traditional financial services are costly, inconvenient, or incomplete, FinTech can become the primary consumer channel rather than a marginal alternative.

10. CONCLUSION

This paper developed a portfolio maturity framework for consumer FinTech innovation. The analysis shows that adoption rate is a useful starting point, but it should not be used as the sole indicator of market opportunity. Payment and transfer services create the strongest entry point into consumer FinTech, while other categories show substantial but uneven room for development. The proposed measures combine market penetration, relative position, and product-category headroom to identify the business posture most appropriate for each adoption condition.

The findings have direct implications for FinTech firms,

banks, platform providers, and investors. Frontier markets require strategies that deepen relationships and protect trust; advanced markets can support controlled product broadening; mainstream markets need activation, clarity, and repeated-use incentives; and formation markets require simple value proof before aggressive expansion. Across all tiers, product growth should be governed by category risk. Borrowing, insurance, and investment propositions demand stronger safeguards than basic payment services because errors in suitability, disclosure, or customer understanding can harm both users and long-term market trust.

The contribution of the study lies in translating consumer adoption evidence into a practical portfolio strategy tool. Future research can extend the framework by combining adoption indicators with customer-retention evidence, firm-level profitability, merchant acceptance, regulatory readiness, and product-level risk outcomes.

REFERENCES

[1] P. Gomber, J.-A. Koch, and M. Siering, "Digital Finance and FinTech: Current research and future research directions," *Journal of Business Economics*, vol. 87, no. 5, pp. 537–580, 2017, doi: 10.1007/s11573-017-0852-x.

[2] I. Lee and Y. J. Shin, "FinTech: Ecosystem, business models, investment decisions, and challenges," *Business Horizons*, vol. 61, no. 1, pp. 35–46, 2018, doi: 10.1016/j.bushor.2017.09.003.

[3] K. Mahmud, M. M. A. Joarder, and K. Muheymin-Us-Sakib, "Adoption factors of FinTech: Evidence from an emerging economy country-wide representative sample," *International Journal of Financial Studies*, vol. 11, no. 1, article 9, 2023, doi: 10.3390/ijfs11010009.

[4] A. A. Alsmadi, M. Al-Okaily, A. Alrawashdeh, and A. Al-Gasaymeh, "The adoption of fintech payment services: A technology acceptance perspective," *Journal of Risk and Financial Management*, vol. 16, no. 10, article 449, 2023, doi: 10.3390/jrfm16100449.

[5] C. Neves, T. Oliveira, F. Santini, and L. Gutman, "Adoption and use of digital financial services: A meta-analysis of barriers and facilitators," *International Journal of Information Management Data Insights*, vol. 3, no. 2, article 100201, 2023, doi: 10.1016/j.jjimei.2023.100201.

[6] D. W. Arner, J. Barberis, and R. P. Buckley, "The evolution of FinTech: A new post-crisis paradigm?" *Georgetown Journal of International Law*, vol. 47, no. 4, pp. 1271–1319, 2016, doi: 10.2139/ssrn.2676553.

[7] Financial Stability Board, *BigTech in Finance: Market Developments and Potential Financial Stability Implications*. Basel, Switzerland: Financial Stability Board, 2019.