



Think Ahead

FINTECH AS A CATALYST FOR GROWTH: **LESSONS FROM INDIA**



Foreword



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Fintech –the coming together of financial services and digital technology – is a key growth sector in India, with an adoption rate of 87%, significantly higher than the global average of 64%. India is the third-largest and fastest-growing fintech market globally. India's success in leveraging innovative financial technologies provides valuable insights into fintech's potential for driving inclusive and sustainable growth worldwide.

Building on a sectoral survey of fintech users (individuals and businesses), supported by consultations with fintech providers, policy influencers and finance professionals, this report is part of ACCA's public-value agenda, contributing insights on the growing role of fintech in India's socio-economic development. Through this research, ACCA highlights the current drivers of fintech growth in India and users' perceptions of its growth prospects across three key sectors: education, energy, and financial services. It also outlines the key future opportunities and risks/concerns.

Mindful of the importance of collaboration for this technology's evolving potential to foster inclusivity, the report specifies the roles of key players: finance professionals, regulators and fintech providers in harnessing these opportunities and managing the associated risks.

We look forward to maximising the findings of this research to increase the penetration of fintech in India further, by building capacity among finance professionals and liaising with other stakeholders to provide the required support. With regulatory clarity, collaborative efforts between finance professionals, fintech providers and regulators, and a commitment to continued development and adaptation fintech can thrive, driving sustainable growth.

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Executive summary

Financial technology – fintech – has improved money circulation by making financial transactions faster and easier, enabling easy access to credit, tokenisation of assets and similar developments. By addressing inefficiencies in the traditional financial system, fintech has enhanced productivity, boosting economic growth. India's fintech has set an example globally, providing zero transaction costs and high-speed transactions, both essential for emerging economies. Government-provided digital ID (Aadhaar) for every resident has become part of the foundational infrastructure for access to financial services.

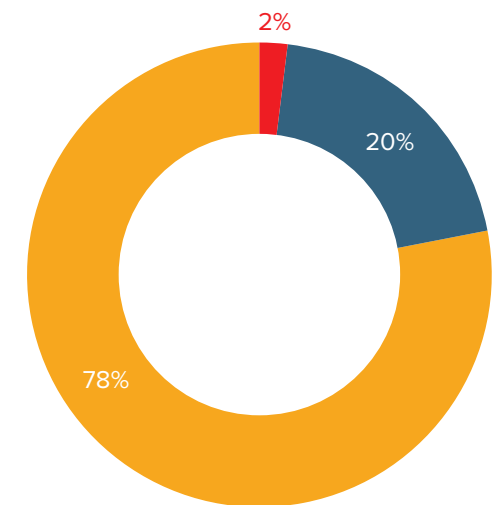
What makes fintech so disruptive? The answer lies largely in the ability of fintech-based companies ('fintechs') to innovate and differentiate. Fintechs are not burdened by legacy systems and processes, and can adopt emerging technologies to anticipate and satisfy customer needs. This report explores this growth, and the current and future uses of fintech, across three sectors: education, energy and financial services. It highlights opportunities, challenges and the way forward for policy and practice (for fintech providers and finance professionals).

With the digital public infrastructure at its core, user confidence in fintech is high and growing. India Stack¹, increasing internet penetration and favourable demography are the key enablers. An ACCA survey reveals confidence in fintech as a driver of economic growth (Figure ES1). Almost all (95%) respondents use fintech platforms frequently. Over 70% say their use has increased in the past one to two years and will further increase in the coming one to two years. Over two-thirds of respondents (78%) believe fintech will significantly contribute to economic growth in the medium to long term. Respondents expect fintech to enhance financial inclusion, expand the banking base, and democratise access to alternative investments. Over 80% recognise fintech's role in enabling finance access for small and medium enterprises (SMEs) (88%) and banking the unbanked (84%), integrating underserved rural populations into the financial system. Additionally, 88% believe fintech will make equities and alternative investments available to retail investors.

Opportunities are numerous, including artificial intelligence (AI) integration in fintech to improve transaction security and speed (cited by 72%), followed by reduced complications in payments using fintech platforms (eg nominal fees/easy processes for cross-border transactions) though over half wanted stronger guardrails to ensure security and privacy. Experts interviewed cited as examples advancements in cross-border transactions, and the financialisation and tokenisation of assets to transform credit systems.

Figure ES1: To what extent will fintech contribute to the growth of the economy in India in the next 3-5 years?

■ Quite a lot/ a significant amount
 ■ Neutral
 ■ Not at all/ not a lot

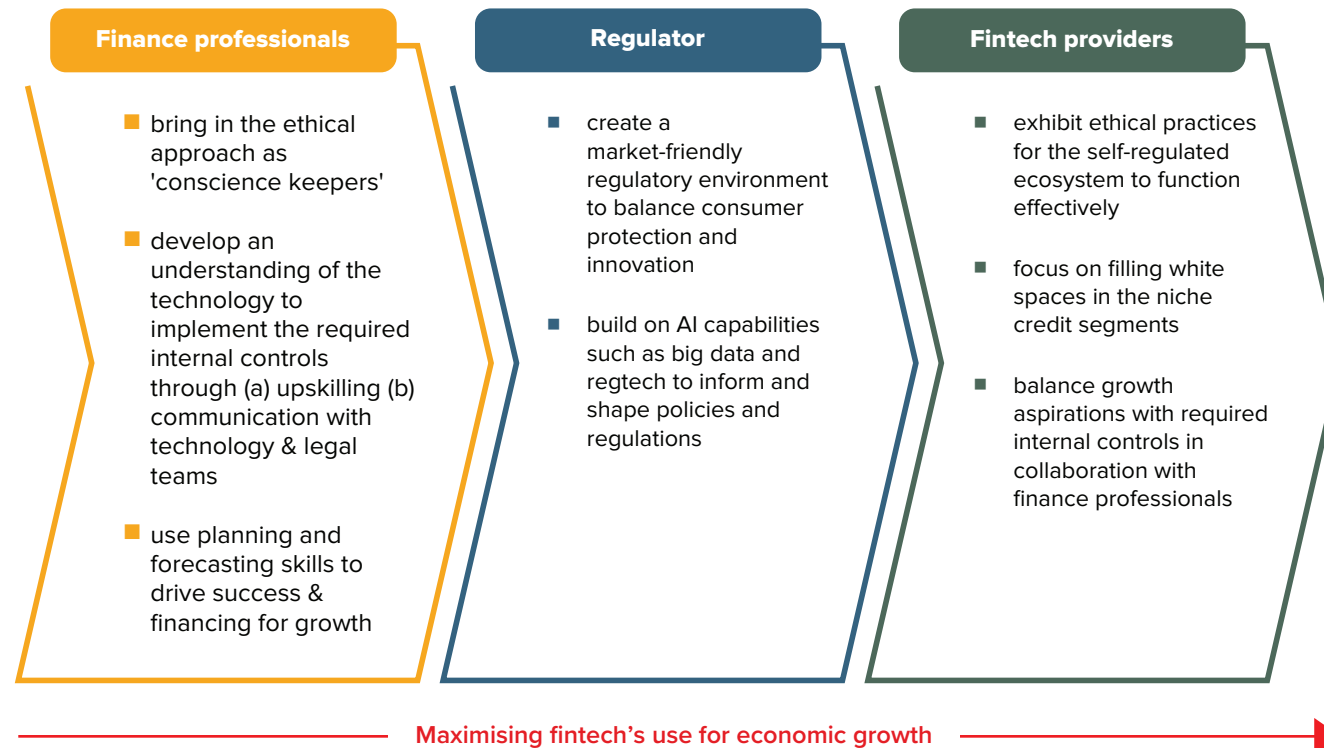


¹ '[A] set of open APIs [application programming interfaces] and digital public goods that aim to unlock the economic primitives of identity, data, and payments at population scale' (India Stack n.d.)

With opportunities come challenges: 60% of respondents cited privacy and data security concerns. Over half cited the need for stronger regulatory processes (58%, implying a robust regulatory and data security framework), and the lack of required knowledge, skills, and capabilities (52%, indicating the need for building capacity).

Everyone – including fintech providers, finance professionals and regulators – has a role to play in harnessing opportunities and managing risks. Industry experts envision a future where fintech will evolve into a ‘finternet’: multiple financial systems interconnected with each other, much like the internet, putting individuals and businesses at the centre of their financial lives. They advocate a user-centric approach that lowers barriers between financial services and systems, thus promoting access for all. All parties have a role in achieving an inclusive future for fintech (Figure ES2).

Figure ES2: The role of different parties in fintech



There is potential value in following a ‘principles-based approach’ to regulation, where all parties involved follow ethical practices and self-regulate. As fintech evolves, a balance between innovation and consumer protection can be attained only if all parties recognise and fulfil their respective responsibilities.



1. Introduction

1. Introduction

Fintech, the coming together of financial services and digital technology, has revolutionised daily lives in India. Unified Payments Interface (UPI) and payment gateways offer a practical alternative to currency notes as (almost) all payments can now be made using smartphones. Since the pandemic, the utility of fintech platforms has gone beyond payments. Fintech-based lending platforms have made it possible to get smaller loans for shorter durations than previously, paid directly to borrowers' bank accounts without multiple trips to the lending institution. Google imagery and tokenisation have streamlined credit scoring by swiftly assessing collateral and risk factors, enhancing the evaluation of creditworthiness with visual and digital data. Democratisation of wealth management through wealthtech (a subset of fintech) and the resultant expansion of online investment opportunities is just one example of the accelerating fintech boom: 88% of respondents to the ACCA 2024 survey agree that fintech will increase the availability of equities and alternative investments to retail investors. Inclusivity is one of fintech's greatest strengths: from the vegetable vendor on a cart to the country's central bank, everyone uses fintech platforms in some form.

Fintech in India is a key growth sector. With an adoption rate of 87% (global average 64%), India is the third-largest and fastest-growing fintech market globally. According to the Reserve Bank of India (RBI), India's central bank and fintech regulator, India's fintech market should hit US\$150bn by 2025, up from US\$50bn in 2021. This projection indicates that by 2030 the sector could contribute to about 13% of the global fintech industry's total revenue (Das 2019).

A major contributor to India's socio-economic development, fintech's role in making financial services inclusive, from providing access to credit to SMEs and previously unbanked customers to enabling access to alternative investments for retail investors, has made it a key vehicle of India's socio-economic development.

- Initiatives such as the Pradhan Mantri Jan Dhan Yojana have used fintech to provide bank accounts to over 500m people as of August 2023 (Jayaswal 2023).
- UPI has democratised access to digital payments, allowing ease of transactions for people across socio-economic backgrounds.
- Fintech platforms assess creditworthiness using alternative data, providing loans to businesses/SMEs/start-ups overlooked by traditional banks, enabling easier and faster access to finance and indirectly contributing to broader employment growth.
- Fintech is creating employment opportunities ranging from technology development to customer service. Over 3000 fintech start-ups, of which 17 are unicorns,² are registered by the Department of Indian Industries (DPIIT) (Dhanuka n.d.).
- Fintech is supporting the achievement of multiple Sustainable Development Goals (SDGs).

² Privately held start-up companies with a value of over US\$1bn



Table 1.1: Fintech and SDGs

Relevant SDGs	Fintech platforms play a crucial role in driving economic growth by:
SDG 1: No poverty	enhancing financial inclusion and providing affordable credit, supporting livelihoods, helping reduce rural poverty and income inequality
SDG 2: Zero hunger	offering tailored financial products to farmers, eg crop insurance, microloans, and payment platforms, enabling them to invest in better seeds, equipment, and technologies
SDG 3: Good health and wellbeing	(a) providing affordable health insurance options, facilitating easier claims processing and (b) offering loans and savings products for healthcare needs, making medical treatments more accessible
SDG 4: Quality education	(a) offering education loans with flexible repayment options, making higher education more accessible and (b) providing financing for online courses and skill development programmes via collaborations with educational technology firms
SDG 5: Gender equality	(a) providing targeted financial products to women, including microloans, savings accounts, and digital literacy programmes
SDG 8: Decent work and economic growth	(a) creating employment opportunities in technology, customer service, and financial services and (b) providing SMEs with access to capital, payment methods, and financial management tools
SDG 9: Industry, Innovation, and Infrastructure	fostering innovation in financial services, leading to more efficient and accessible products
SDG 10: Reduced inequalities	(a) offering financial products for marginalised communities (b) reducing the cost and increasing the speed of cross-border remittances, benefiting migrant workers and their families: <i>‘India is one of the biggest recipients of remittance and reduced transaction costs via the use of CBDCs [which] will have a substantial impact. The MoU [memorandum of understanding] between RBI and the Central Bank of UAE [the United Arab Emirates] to make Dirham and INR [Indian rupee] interchangeable is one of the early developments in this space. With these developments, it is easy to imagine a world where CBDC [central bank digital currencies] running on UPI will make cross-border remittance nearly instantaneous and reduce the cost of transactions’, argues Sharat Chandra, a blockchain expert</i>
SDG 13: Climate action	(a) enabling investments in green bonds and other environmentally friendly projects, (b) reducing the carbon footprint associated with traditional banking operations
SDG 17: Partnership for the goals	collaborating with governments, non-governmental organisations (NGOs), and others to create synergies that drive progress towards the SDGs.

India Stack, increasing internet penetration and favourable demography are the key enablers. Fintech growth in India has been supported by digital public infrastructure, the India Stack, where the UPI sits at its second layer (introduced as a partnership between RBI and a consortium of banks) along with the digital identity service (Aadhaar) as the first layer. A shared data platform, Data Empowerment and Protection Architecture, the third layer of India Stack, ensures user consent for data sharing. The growth is spurred by expanding GDP (at a compound annual growth rate (CAGR) of 7% per year), the rise of an educated middle class, younger people, and increasing internet and smartphone penetration: India already has the second highest number of smartphone users globally and is the second-largest internet-user market (BCG 2023, Dhanuka n.d.).

The use of fintech across sectors is reshaping the business environment: driving value creation in the financial services sector and the digital revolution, and supporting new areas such as carbon trading and green financing. Crucially, fintech democratises access to education loans.

Methodology

This report is informed by:

- a literature review
- interviews and roundtables with 20+ fintech providers, users, finance professionals and policy influencers/regulators (listed in Appendix 2)
- an India-focused survey of nearly 400 respondents, giving individual and business perspectives (Figures 1.1, 1.2 and 1.3).

Figure 1.1: Age-split of survey respondents

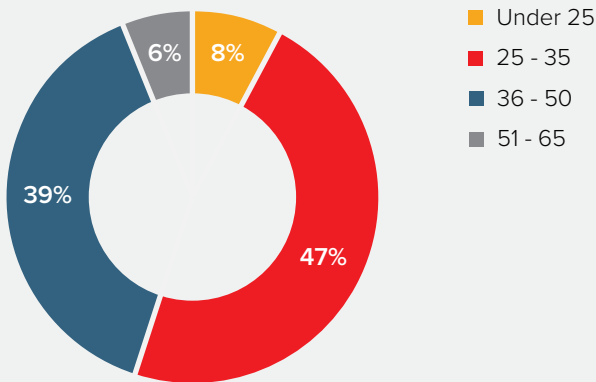


Figure 1.2: Sector expertise

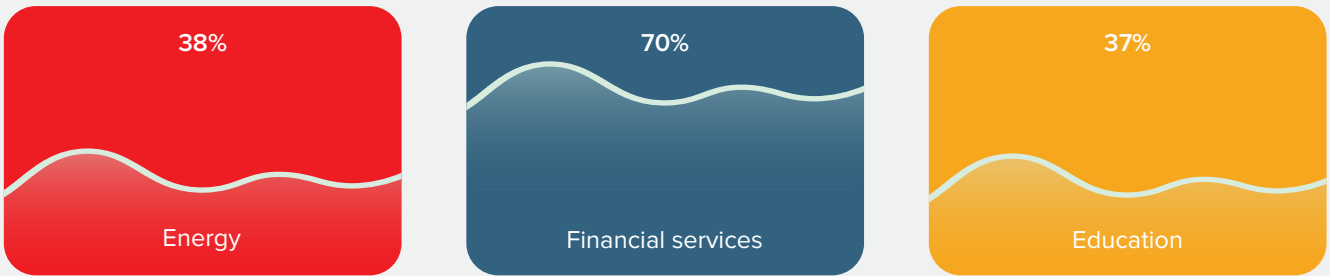
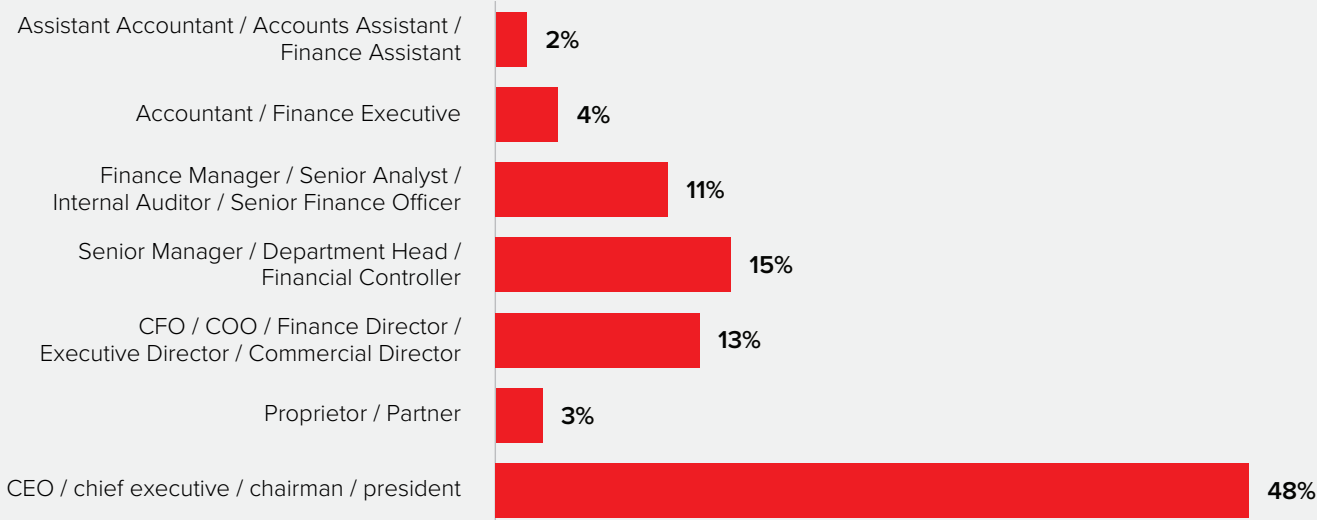
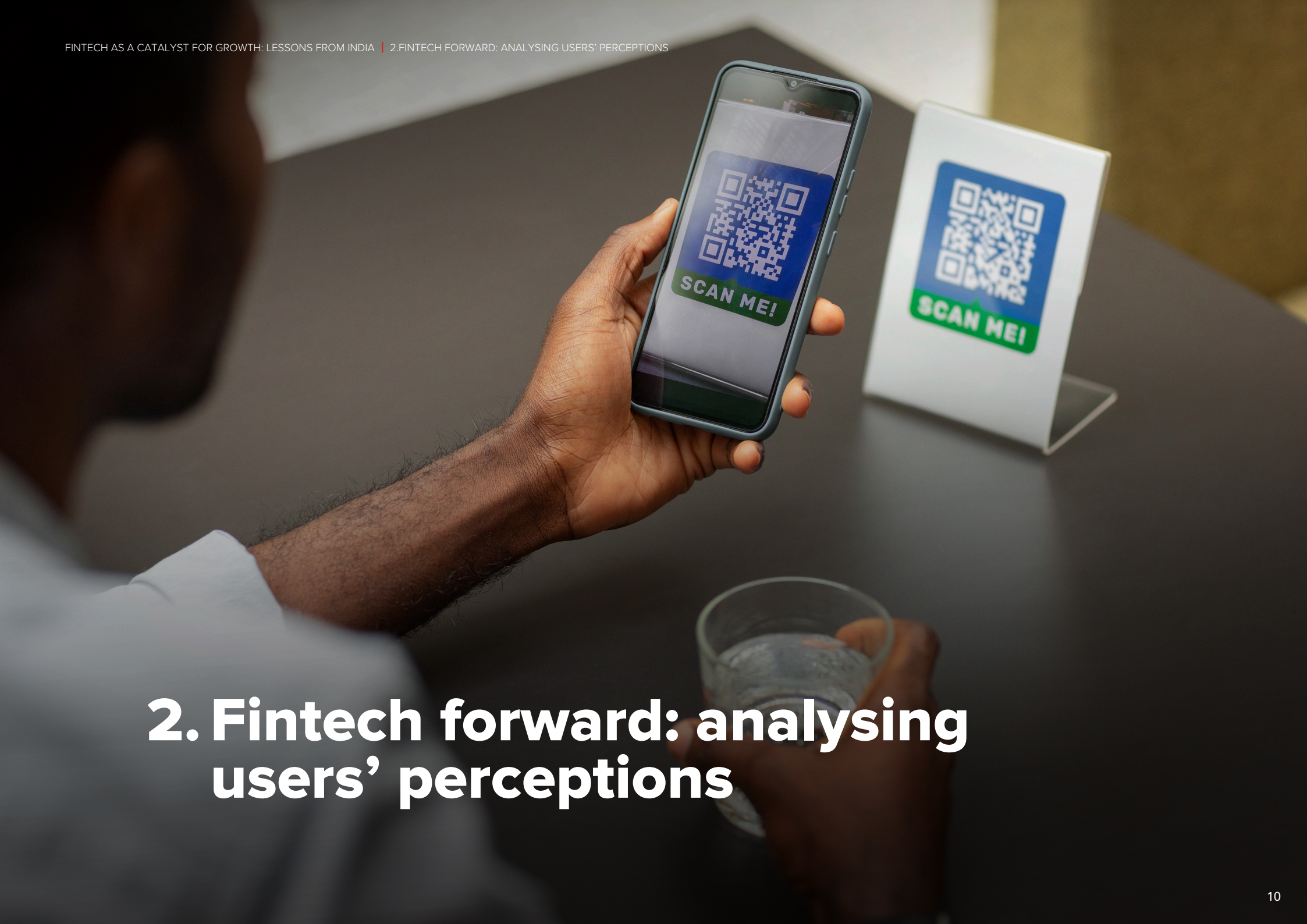


Figure 1.3: Job title





2. Fintech forward: analysing users' perceptions

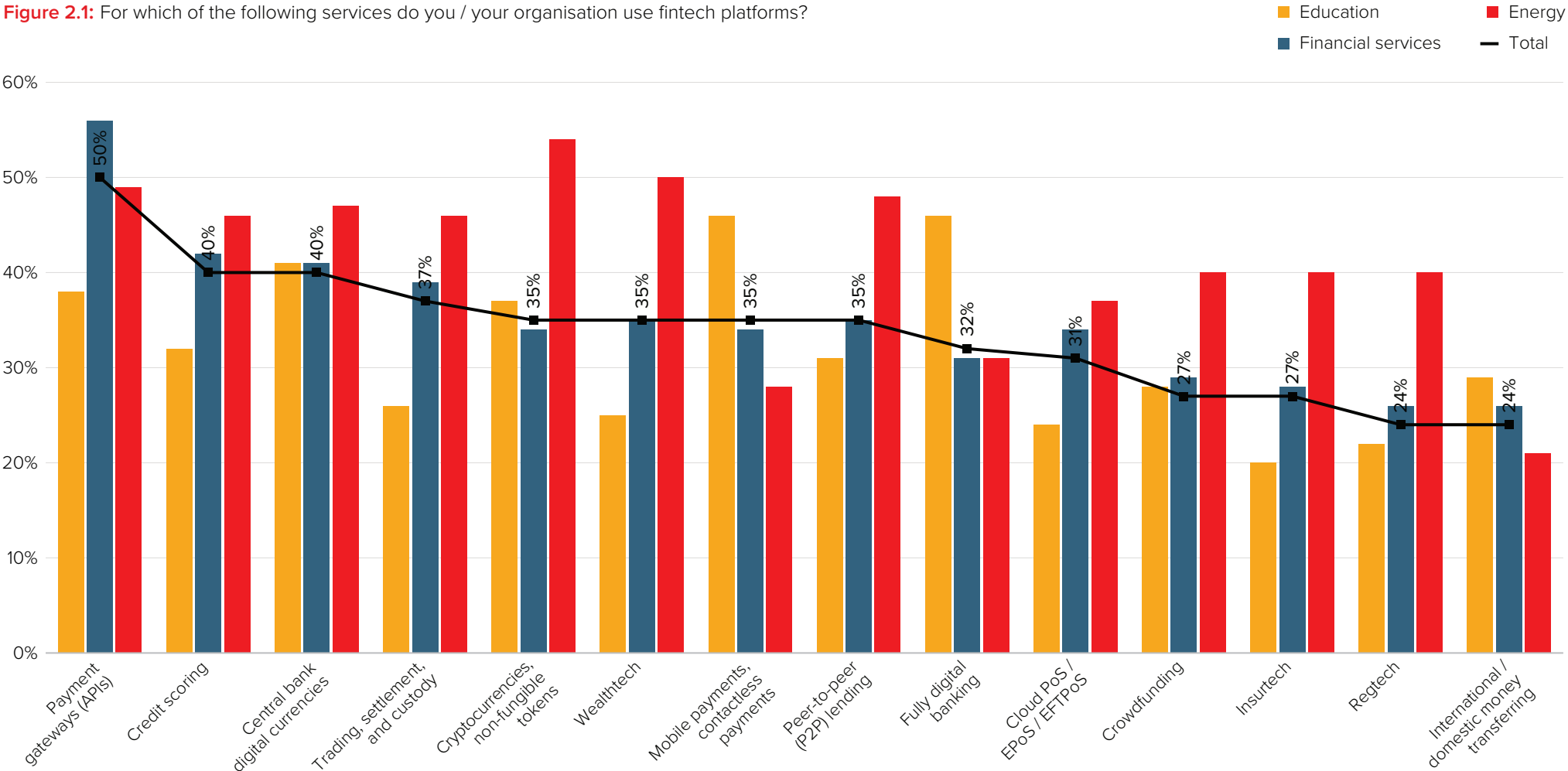
2. Fintech forward: analysing users' perceptions

Building on ACCA’s research in *Fintech: State of Play* (ACCA 2022), the ACCA 2024 survey explores the use of fintech in the focus sectors across a range of products and services: mobile payments; contactless payments; fully digital banking (online/mobile only, no branches); electronic international/domestic money transfer; cloud PoS /EPoS/EFTPoS; payment gateways (APIs); credit scoring; trading, settlement and custody; peer-to-peer (P2P) lending; crowdfunding; cryptocurrencies; non-fungible tokens (NFTs); CBDCs; wealthtech; regtech; and insurtech (see [Appendix 1](#) for definitions).

Uses range from commonly used payment interfaces to more advanced ones

The three uses that have increased most since demonetisation in November 2016 (RBI 2016) are payments, lending and investments, as explained by our experts. Crowdfunding, insurtech and regtech are gaining popularity among urban users but much less among the rural and semi-urban populations (Figure 2.1).

Figure 2.1: For which of the following services do you / your organisation use fintech platforms?



Financial services: fintech uses in financial services vary from the commonly used payment gateways (56%) to niche services such as credit scoring (42%); trading, settlement and custody (39%) and wealthtech (35%). The use of fintech for investments predominates among millennials (25–35 years), with 39% using fintech platforms for trading, investment and custody. For example, in Zerodha, a leading financial services company offering discount brokerage services, 75% of its customers are under 30 years' old, many being first-time investors (Mehrotra 2022).

Beyond familiar uses such as digital know your customer (KYC), democratising access to credit and other financial products through financial inclusion, fintech is used for online credit approval, credit assessment, monitoring, and collection predictions. The sector has embraced technology and financial institutions are now partnering with fintech firms and designing their apps to provide all their services and support online.

Innovative uses of fintech in financial services

1. **Regtech is redefining the future of financial services.** New digitisation technologies (AI and machine learning algorithms) are changing risk management and regulatory compliance. These technologies can analyse vast amounts of data in real time, helping firms identify and address potential compliance issues more efficiently. This reduces the burden of manual compliance while enhancing accuracy and reducing the risk of regulatory violations. For this to work seamlessly, collaboration by several actors is crucial, particularly the banks, regulators and regtech firms (OliverWyman 2024).

'What makes regtech interesting is its potential use in public sector banking institutions, [which] can collaborate for improved operations. RBI, as the regulator, can pool lending data to identify and manage risks proactively and ensure compliance', explains Dr Paritosh Basu, adjunct professor at IIM Kozhikode.

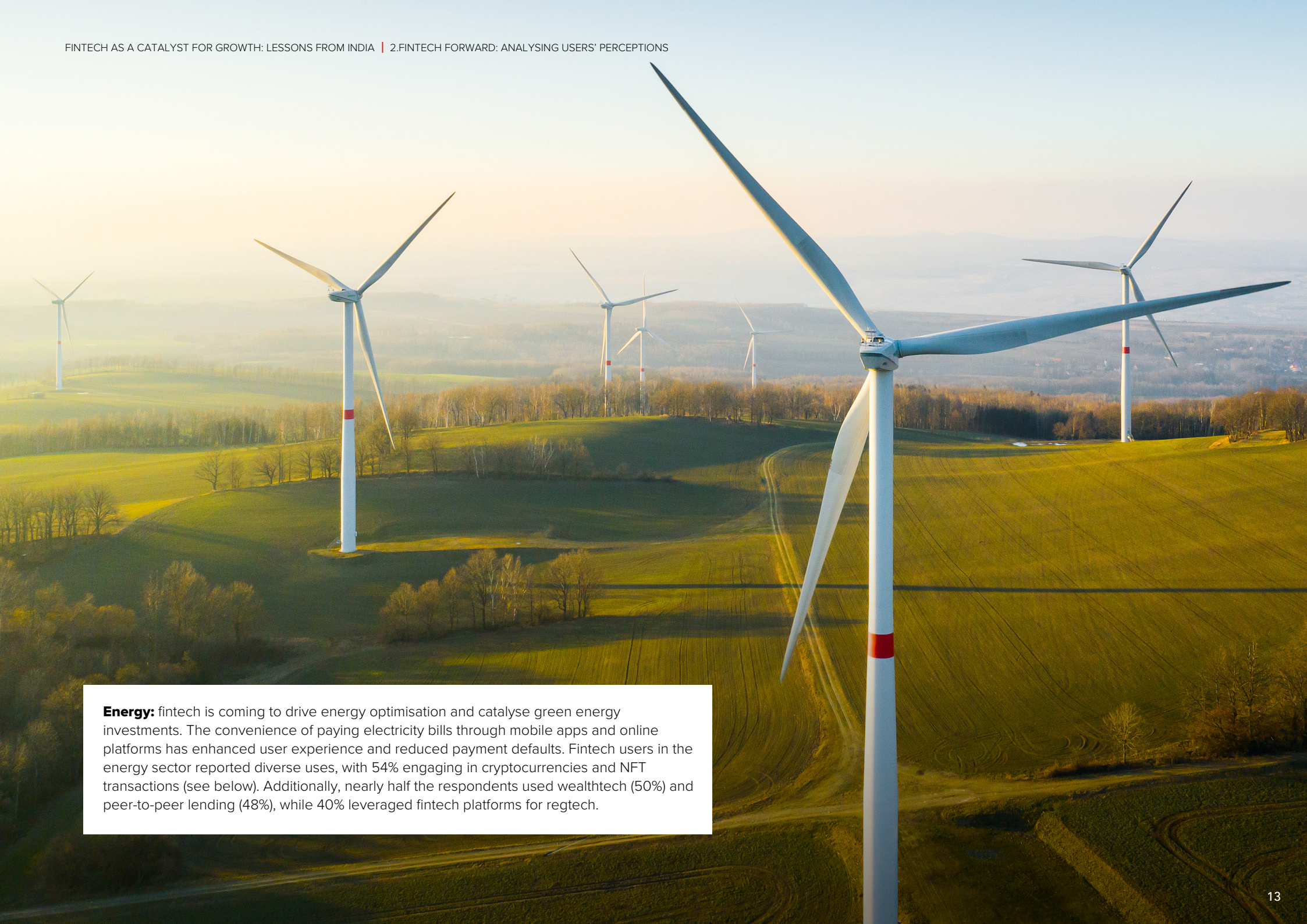
2. **CBDCs will transform cross-border transactions by providing a more efficient and cost-effective means of transferring value internationally.**

'As UPI moves from zero cost to a sustainable fee model with incentives, CBDCs can stay free. With rising UPI transaction volumes, CBDCs will play a complementary role. Non-bank payment system operators will be allowed to issue CBDCs eliminating the hassles of currency exchange', explains Sharat Chandra.

3. **Uniform ledger and a public blockchain will democratise international money transfers.** This innovation is

'expected to take at least a couple of decades to operationalise', according to Sharat Chandra;

it will help democratise money transfers, including international transactions, removing the need for systems such as the Society for Worldwide Interbank Financial Telecommunications (SWIFT), which transfers payment instructions. It will support the internationalisation of digital INR, benefiting trade and remittance transfers.

An aerial photograph of a wind farm in a lush green landscape. Several white wind turbines with three blades each are scattered across rolling hills. The foreground features a prominent turbine with a red stripe on its tower. The background shows more turbines and distant hills under a clear sky. The overall scene is bathed in the warm, golden light of late afternoon or early morning.

Energy: fintech is coming to drive energy optimisation and catalyse green energy investments. The convenience of paying electricity bills through mobile apps and online platforms has enhanced user experience and reduced payment defaults. Fintech users in the energy sector reported diverse uses, with 54% engaging in cryptocurrencies and NFT transactions (see below). Additionally, nearly half the respondents used wealthtech (50%) and peer-to-peer lending (48%), while 40% leveraged fintech platforms for regtech.

Innovative uses of fintech in energy

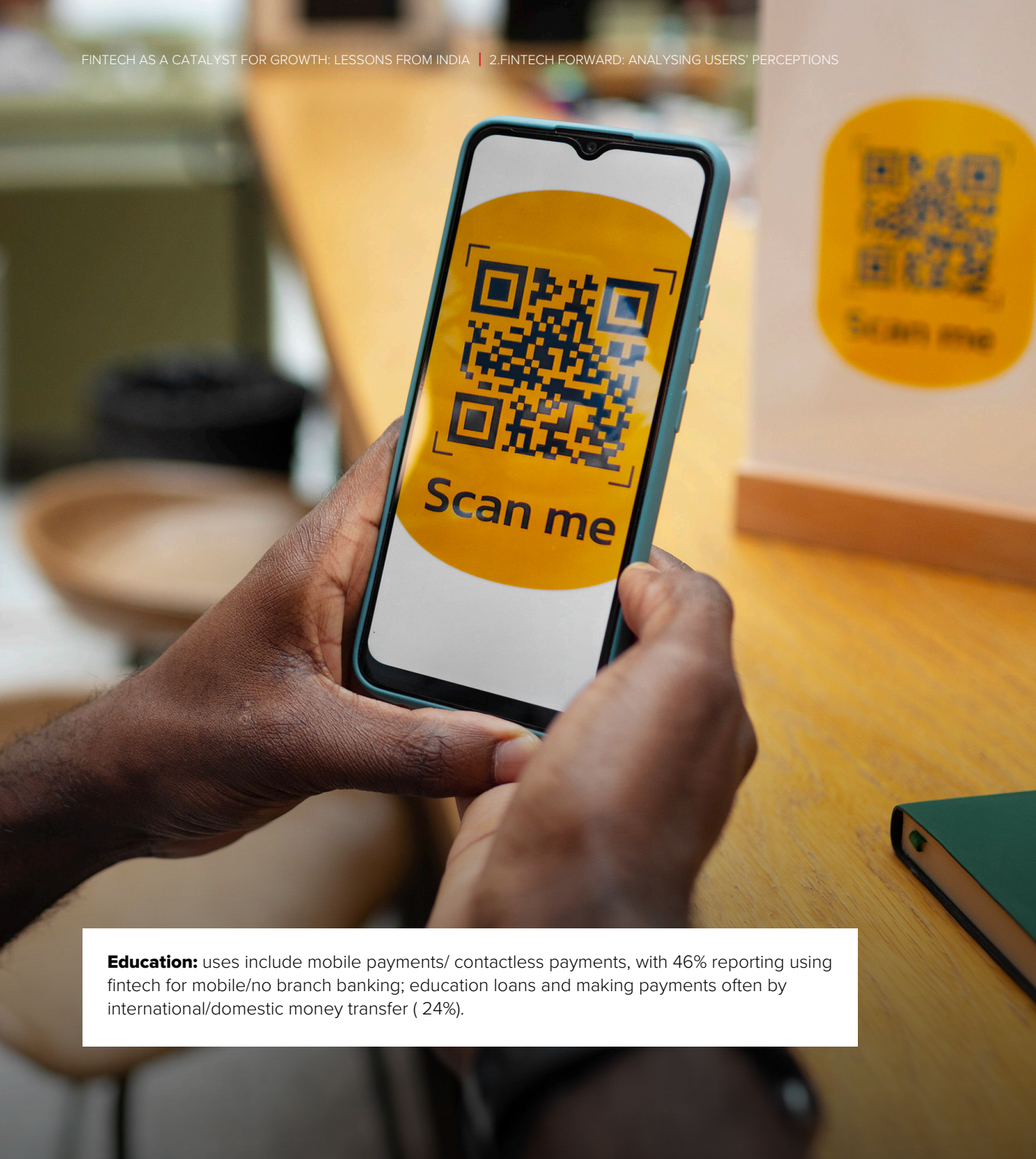
1. **Use of fintech platforms for energy subsidy transfers.** The Indian government, in collaboration with fintech platforms, has leveraged Aadhaar for Direct Benefit Transfer initiatives. Subsidies and financial assistance for various services, including energy (eg an LPG (liquefied petroleum gas) subsidy), are directly credited to the bank accounts linked with Aadhaar. Beneficiaries receive their LPG subsidies in their bank accounts, reducing leakages.
2. **Smart grid technologies³ optimise energy use, aiding SDG achievement.** Fintech is being leveraged to achieve sustainable energy goals and enhance grid management. Cost savings from smart grid deployments will see a 279% growth globally (to US\$125bn in 2027 from US\$33bn in 2022) by increasing network efficiency and optimising resource management (Global Information 2022). Integration of fintech with smart metering systems, for example, facilitates data analysis, predicts energy consumption patterns and helps businesses and individuals optimise energy use, with potential cost savings and reduced energy consumption. Fintech platforms that leverage data analytics and predictive modelling techniques can help energy suppliers optimise the fuel mix for electricity generation. By analysing, eg historical energy market data and weather patterns, these platforms help identify the most cost-effective and environmentally sustainable mix of energy sources to meet demand. For example, Tata Power collaborated with technology partners (including BluWave-ai) to develop digital platforms for real-time energy trading and market analytics, enabling it to optimise its energy portfolio and participate more effectively in power-grid trading activities (Tata Power 2021).
3. **NFTs and blockchain are redefining renewable energy financing and production.** NFTs and blockchain are enabling easier access to capital for renewable energy projects. NFTs can be used to represent physical assets such as solar panels, wind turbines and energy storage systems and can be traded or sold to investors, allowing them to own a fraction of the physical asset's value. This model opens up new investment opportunities, especially for small investors. NFTs also offer a unique solution to the issue of double counting in renewable energy certificates by making each certificate unique, eliminating overestimations and the creation/selling of fake carbon credits.

Another key challenge in renewable energy production is the intermittency of the energy sources: wind and solar. Blockchain can create a decentralised energy grid to balance the supply and demand of energy, ensuring efficient and reliable energy distribution (Alam 2024).

'Green finance and blue finance are two very interesting and upcoming use cases of fintech', remarked Dr Basu.

4. **Using CBDCs to buy carbon credits promotes environmental sustainability.** IndusInd Bank has launched a pilot programme in Maharashtra where farmers can exchange carbon credits for CBDCs, enhancing the efficiency and traceability of these transactions. This project is a collaboration with the Circularity Innovation Hub and other partners, including Emertech Innovations, which provides blockchain-based traceability for these transactions (Sahu 2024). The Gujarat International Finance Tec-City (GIFT City) committee on sustainable finance has developed tools for instant transactions using CBDCs, ensuring prompt processing of payments for carbon credits. Using CBDCs for carbon trading should enable immediate transactions, promoting timely and efficient exchange of carbon credits to reduce carbon footprints and support environmental sustainability (Hindustan Times 2023).
5. **Regtech will play a critical role in helping companies minimise the threat of cyberattacks and track environmental, social and governance (ESG) performance.** Blockchain technology is used for regtech in energy. Its secure and decentralised nature manages energy transactions, ensures compliance, and maintains tamper-proof records, enhancing traceability and transparency in energy trading and distribution. Regtech tools are also helping organisations monitor climate risk, develop and track new internal and external policies, and meet expected ESG-related requirements.

³ A smart grid is a modern power generation, transmission, and distribution system that can automate and manage the increasing complexity of, and needs for, electricity.



Education: uses include mobile payments/ contactless payments, with 46% reporting using fintech for mobile/no branch banking; education loans and making payments often by international/domestic money transfer (24%).

Innovative uses of fintech in education

1. **Fintech is making education financing affordable and accessible.** Peer-to-peer (P2P) lending platforms connect borrowers who apply for student loans with willing lenders, often offering flexible terms and lower interest rates than banks. P2P allows investors to diversify their investment portfolios beyond traditional assets. [LenDenClub](#) is an example of one such platform.
2. **Blockchain is helping streamline proof of identity and authentication of degrees and certificates:** By storing digital credentials (degrees, certificates, and other qualifications) on a blockchain network, individuals can control their own identity and share verifiable proof of their credentials without relying on centralised authorities, avoiding the hassles of background checks.

Sharat Chandra said, 'Karnataka Skill Development Corporation has implemented a blockchain-based system to create a central database of certificates issued to participants of skill development programmes'.

Users report a high and increasing frequency of use

Most (95%) reported frequent use of fintech platforms: 94% of respondents from education and financial services, and 96% in energy, said they use fintech frequently, while 71% had increased use in the previous couple of years (Figures 2.2 and 2.3).

A positive perception of the future: users’ responses align well with the positive pace of fintech developments in India; when asked about the future use of fintech platforms at work or in personal lives, 73% said that their use will increase in the next one to two years and 26% said it will remain the same (Figure 2.4).

Over two-thirds of users across all three sectors expect the use of fintech to increase: specifically, 88% of financial services users, 81% of education sector users, and 77% of energy sector users expect greater fintech adoption in the next one to two years (Figure 2.5).

Figure 2.2: How often do you use fintech? By sector

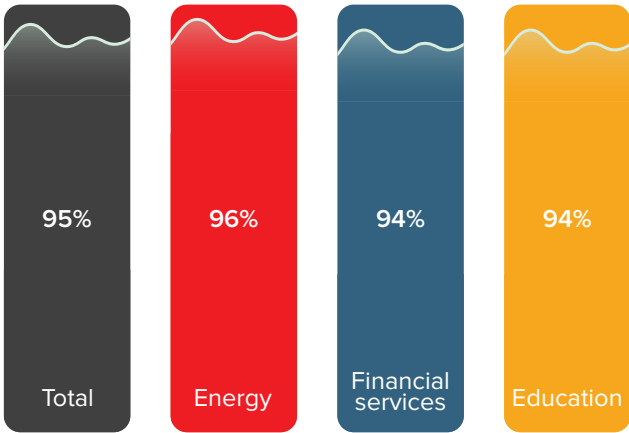


Figure 2.3: Which of the following statements best applies to your / your organisation's use of fintech platforms?

- Increased in the past 1-2 years
- Remained the same
- Reduced

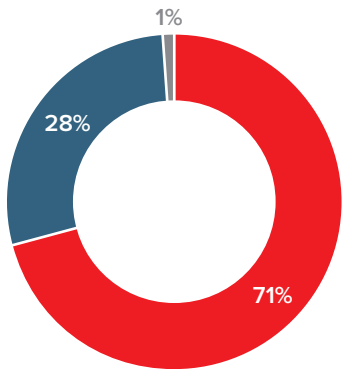


Figure 2.4 : Thinking ahead, which of the following statements best applies to your / your organisation's use of fintech platforms?

- I expect this to increase in the next 1-2 years
- I expect this to remain the same
- I expect this to reduce

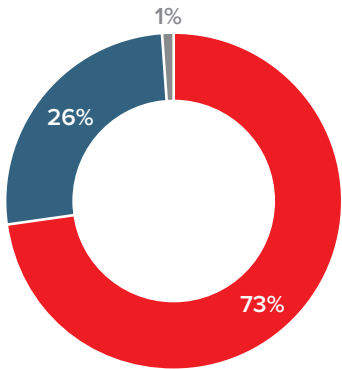


Figure 2.5: Do you expect the use of fintech will increase in your sector(s) within the next 1–2 years?

- Yes – this sector will use more fintech solutions over the next 1-2 years
- No change
- No – this sector will use less fintech solutions

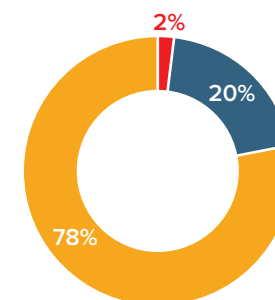


Users are optimistic about fintech's contribution to India's economic growth

There is strong optimism about fintech's impact on India's economic growth: 78% said fintech will significantly contribute to economic growth in the next three to five years, while 20% are neutral about its economic impact. Unsurprisingly, 79% of fintech users in financial services are optimistic about its contribution (Figure 2.6).

Figure 2.6: To what extent will fintech will contribute to the growth of the economy in India in the next three to five years?

■ Not at all/ not a lot ■ Quite a lot/ a significant amount ■ Neutral



'India is now moving beyond financial inclusion, one of the key use cases of fintech, to financial expansion. If you're a financial services company, in a few years you will be digitised and you will have to deliver everything digitally. So the term fintech is transitional and fintech and financial services will become synonyms', remarked Navin Surya, fintech expert, investor and mentor, when asked about the contribution of fintech to economic growth. 'By improving the velocity of money through the use of technology in financial services, fintech is positively impacting all economic indicators', he added.

Respondents expect fintech will improve various economic and social indicators, by supporting financial inclusion, expanding the banking base, and democratising access to alternative investments. Over 80% of respondents recognise that fintech helps enable access to finance for SMEs (88%) and banking the unbanked (84%) among the underserved rural population with limited access to financial services (Figure 2.7). In a country where 95m people (65% of the population) live in rural areas and 65m micro, small and medium-sized enterprises exist (IBEF 2022), fintech is important in driving financial inclusion and economic growth. Access to finance for these groups, beyond the traditional banking channels, lies behind increasing government support. A 2023 report by RBI’s Centre for Advanced Financial Research and Learning predicts that fintech lending will surpass traditional bank lending by 2030.

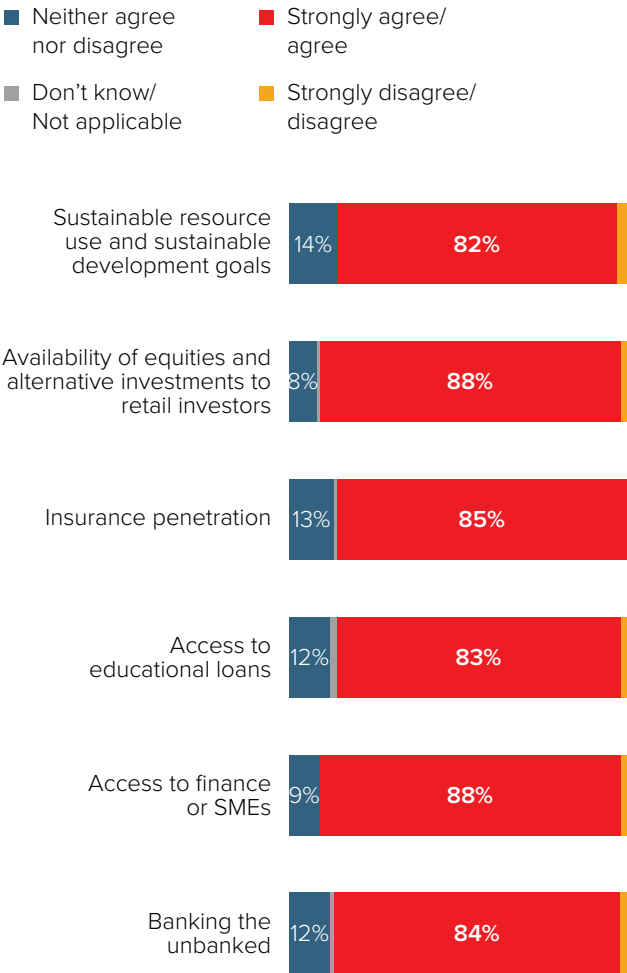
‘With the digitisation of the loan journey –for both secured and unsecured – right from KYC to loan disbursement, the lending process has become very efficient with almost zero operational costs. Thanks to government interventions such as India Stack, DigiLocker and account aggregators, we can get the required documentation digitally and can remotely underwrite or assess a customer’, commented Rupesh Bishnoi, co-founder of Credin, a digital lending platform.

An equally high percentage of respondents (88%) believe fintech will facilitate availability of equities and alternative investments to retail investors – a relatively new but increasingly popular use of fintech in India (Figure 2.7). Among users in the financial services sector, 90% agree that fintech has improved access to alternative investments for retail investors. According to roundtable participants, democratisation of equity markets is continuing, given the huge demand for alternative investments. As surplus incomes increase, alternative investments are attractive and ‘influencers’ are enhancing the attractiveness of equities over traditional instruments such as fixed deposits. Participants expected other alternative investments, such as crypto and NFTs, to be integrated over three to five years.

Most respondents (83%) agree that fintech contributes to ensuring improved access to educational loans (Figure 2.7). Unsurprisingly, 91% of users in the education sector agree about this.

‘Fintech is playing a growing role in providing easy access to education loans’, says Mayank Sharma of PhysicsWallah. ‘However, the current state makes it an aspirational use case. While fintech is making education loans more accessible, over 50% of students who approach us struggle to afford courses priced as low as INR 5000. Improving penetration is essential to bridge this demand–supply gap. Blending loans with grant capital is one approach to make loans more affordable and accessible, opening up new opportunities for students’. Fintech expert Navin Surya adds: ‘While higher education loans have a well-established system with low default rates and good returns, there are challenges in the technical education and skill development sectors. Development work is required to bring discipline to the sector as the default rates are high. For example, an NBFC [non-bank financial company] in early school education exited this segment [owing] to very high default rates, mainly because this segment isn’t directly linked to earning livelihoods. Consequently, repayment becomes difficult since there’s no immediate return after utilising the loan. Fintech’s potential in education loans shines more in short-term, small-scale opportunities, like a six-month professional development course’.

Figure 2.7: To what extent do you agree or disagree that the following areas will be positively affected by fintech in the next one to two years?



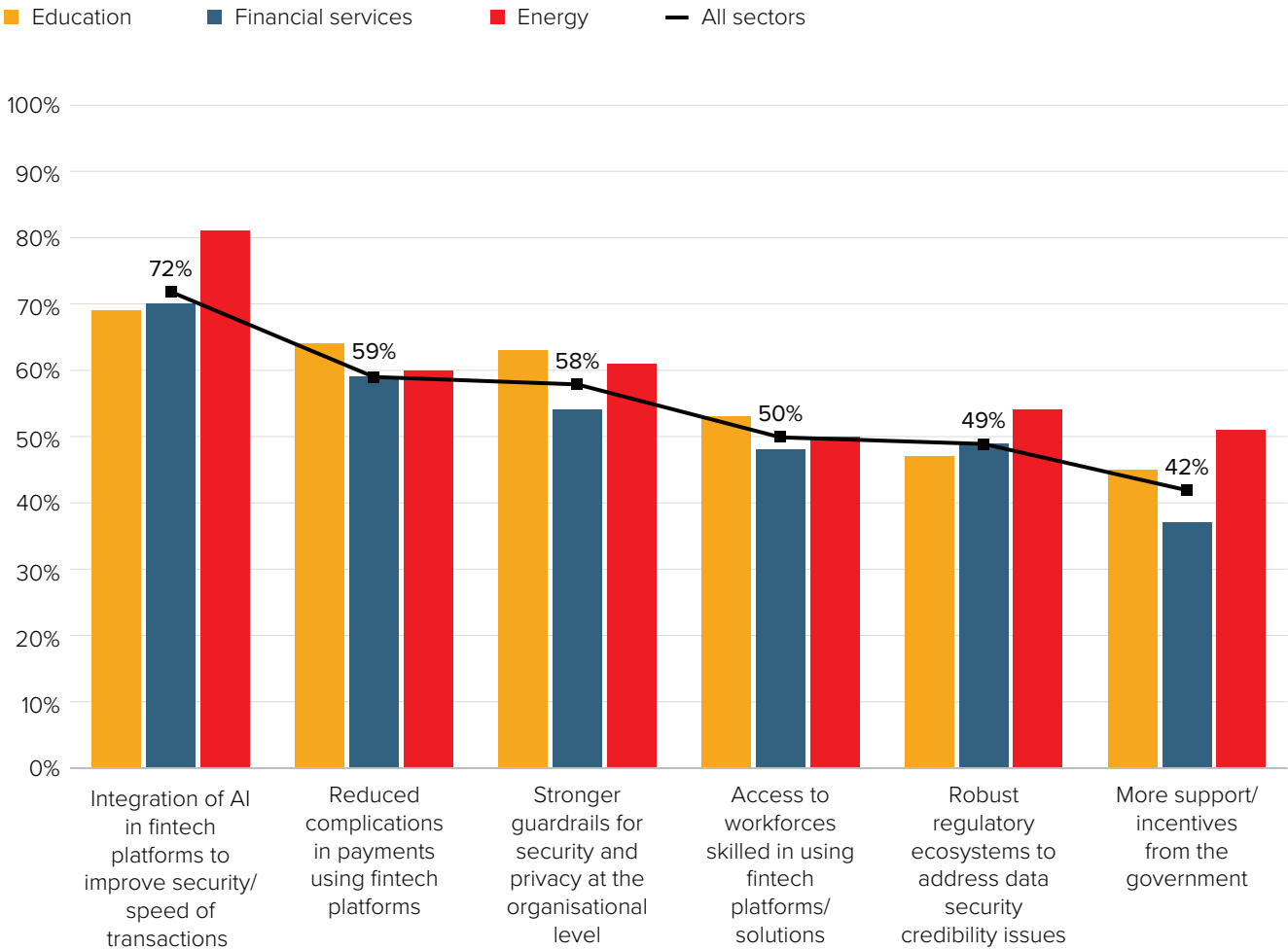
A woman in silhouette is walking across a courtyard. In the background is a large, red wall with a grid of white arched niches. The courtyard is framed by dark, ornate arches. A chandelier hangs from the ceiling. Two large, ornate planters with greenery are on the ground. The scene is brightly lit, suggesting a sunny day.

3. Exploring the future: Opportunities and challenges

3. Exploring the future: Opportunities and challenges

Nearly three-quarters of respondents (72%) cited AI integration as likely to increase the market penetration of fintech, followed by reduced complications in payments using fintech platforms (eg nominal fees / easy processes for cross-border transactions) (59%). The requirement for stronger guardrails to ensure security and privacy, is an opportunity cited by 58% (Figure 3.1).

Figure 3.1: Which of the following would help increase the use of fintech in your work?





Fintech x AI: 72% believe that integrating AI into fintech platforms will improve transaction security and speed. Roundtable participants agreed that AI is not new in fintech and has been leveraged for credit scoring and risk management. Machine learning (a subset of AI) algorithms are used to analyse transaction patterns in real-time to detect fraudulent activities. These algorithms can identify anomalies by comparing current transaction patterns with historical data. AI is also being used within the Jan Dhan-Aadhaar-Mobile trinity to streamline the KYC process and in fraud detection (for better tracking and internal controls). An example of the latter is digital twinning, used by financial institutions to track unusual transactions and monitor transactions beyond a certain threshold to minimise frauds. Availability of data within fintechs enables them to use AI for risk detection, such as identifying potential non-performing assets (NPAs). Financial inclusion for the underserved population via (vernacular) voice KYC is a future use that will facilitate access to financial services. AI could also add an extra layer of security and/or reduce the number of steps between deciding to pay and making the payment. Roundtable participants noted that RBI's discussions about enabling offline (ie without using the internet) payments could be an example of this. Generative AI infusion can improve fintech by making transactions more secure and giving unbanked customers access to credit through digital KYC.

Reduced complications in payments using fintech platforms is the second most popular opportunity area, indicating the scope for streamlining compliances. Roundtable participants suggested this will be most relevant for new uses such as CBDCs, as current payment systems are already streamlined and simplified for users. Given the challenges in data security and trust issues, 58% of respondents cited potential for stronger guardrails for security and privacy.

Emerging opportunity areas as shared by interviewed experts

Cross-border transactions: As highlighted by a roundtable participant, despite challenges such as exchange rates and high transactions costs, there is huge scope for streamlining cross-border transactions. Developments are already under way. The MoU signed between Monetary Authority of Singapore (MAS) and RBI to link Singapore's PayNow and India's UPI (MAS 2023), will greatly improve the cost, speed, access and transparency of cross-border payments for customers of participating financial institutions.

Financialisation and tokenisation of assets:⁴ A roundtable participant commented, 'A key issue in access to credit is lack of collateral and credit history. Fintech is addressing this via tokenisation of assets and by triangulating multiple assets to create a single window view of an individual's creditworthiness, thus addressing the inefficiencies of traditional financial systems'. Another added, 'Financialisation of assets (via access to equities, digital gold, digital land records, etc.) is a key metric through which fintech is contributing to economic growth'. Currently, 40% of our survey respondents use fintech platforms for credit scoring (Figure 2.1), a key enabler for access to credit.

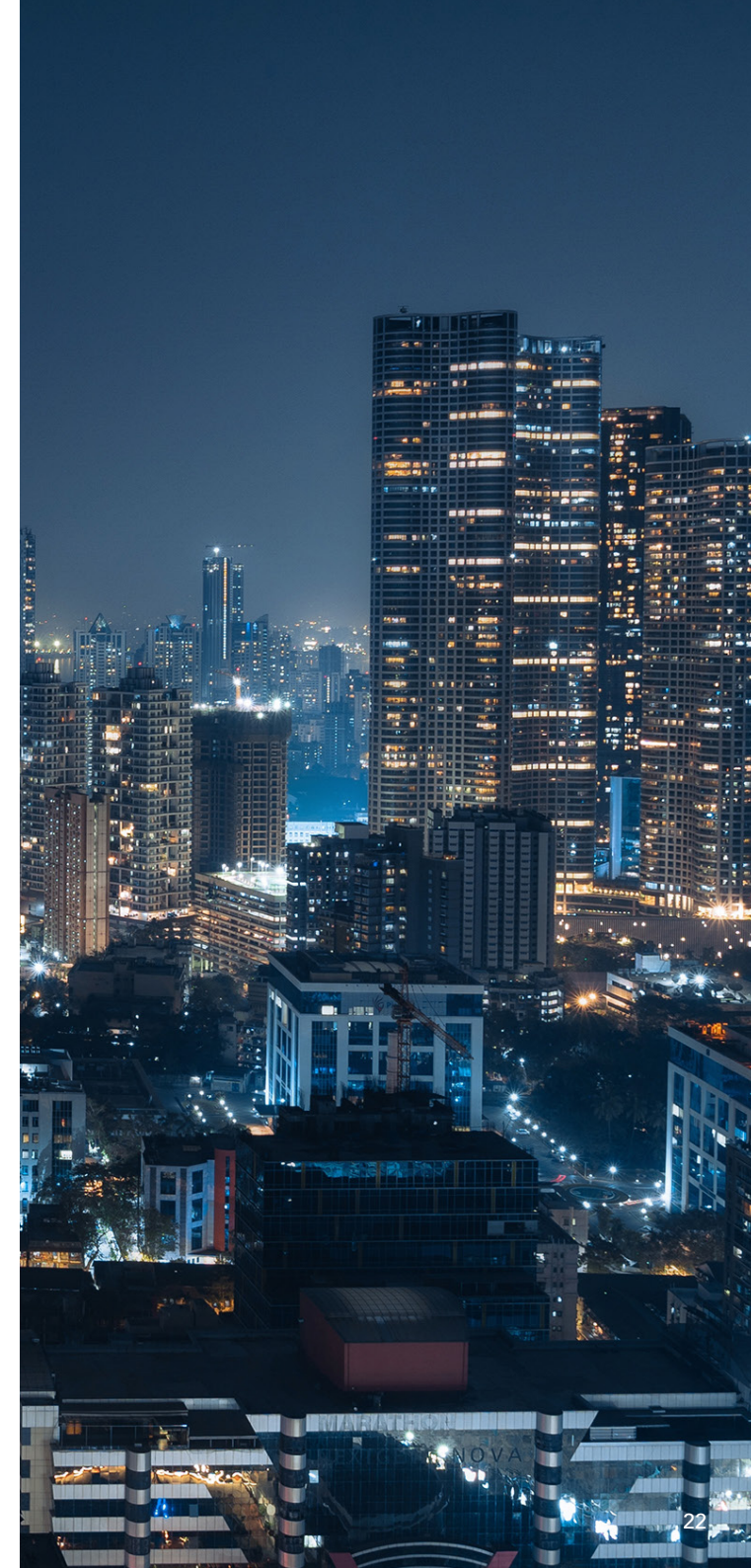
Further innovations are happening.

Neha Sampat of the British High Commission notes that, 'the UK and India are natural partners on fintech with various initiatives such as the India-UK joint fintech working group. UK companies such as Tide and CreditEnable are helping improve access to finance for SMEs. Tide provides a banking platform for SME businesses while CreditEnable is a marketplace that helps SMEs access affordable credit'.

Recent developments by RBI include creating a marketplace for frictionless credit, aggregating data from lenders and borrowers to provide working capital finance to SMEs. This initiative will address data availability and security concerns and enable digital access to credit for smaller businesses', argued a roundtable participant.

'Thanks to innovations such as the digitisation of land records, Google Earth APIs and other platforms offering satellite images for verification, we are not entirely dependent on the creditor's bank balance to assess their creditworthiness. We can evaluate a customer's agricultural income based on their landholding and crop cycles. This helps us offer mortgage backed loans digitally, thus enabling access to credit to a target group and of a ticket size that generally won't be able to qualify for bank loans', adds Rupesh Bishnoi of Credin.

⁴ Financialisation of assets is the process by which tangible assets, such as real estate, commodities, or even intellectual property, are transformed into financial instruments or securities.

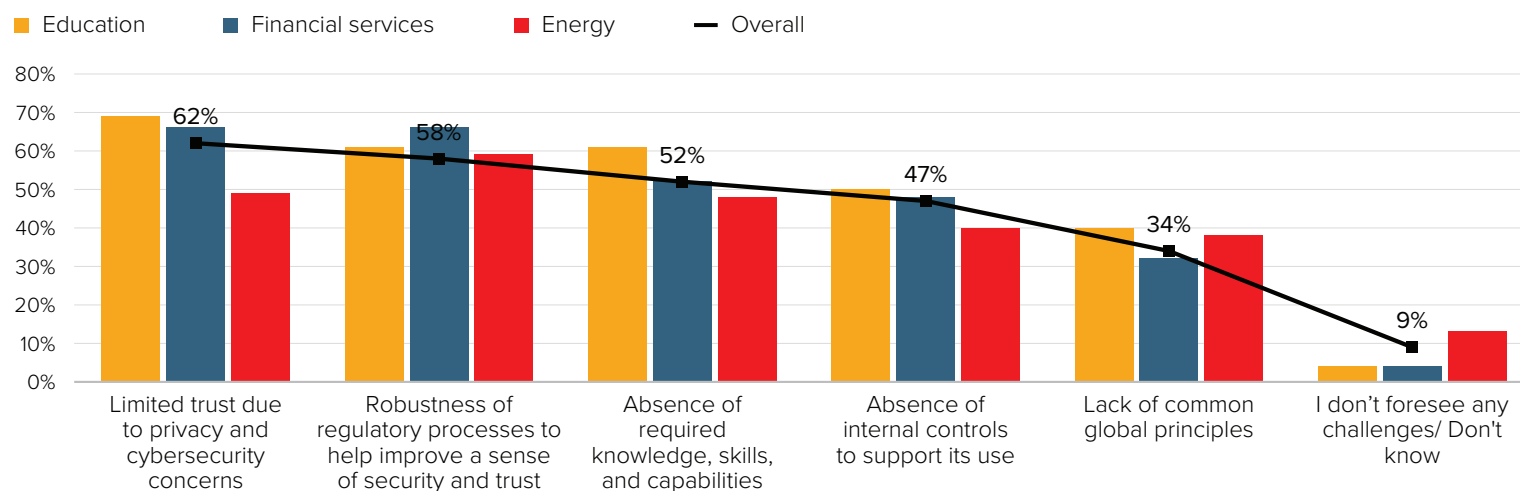


Data privacy and cybersecurity concerns are key challenges.

The top three challenges, cited by over 50% of respondents, clearly indicate the need for a more robust regulatory and data security framework as well as for capacity-building:

- limited trust owing to privacy and cybersecurity concerns
- lack of robust regulatory processes reduces the sense of security and trust
- absence of required knowledge, skills, and capabilities (Figure 3.2).

Figure 3.2: What are the top three challenges for using fintech in your sector?



Data privacy and cybersecurity are among the top three challenges for 62% of respondents. From a fintech provider's point of view, data privacy is a complicated issue, particularly in financial services, as there are multiple regulatory agencies (for different sectors such as payments, and insurance) and when services are bundled (such as insurance with credit), different agencies will have different mandates for dealing with privacy issues, resulting in cross-regulatory overlap. This might hinder the speed of bringing these bundled services to market, as highlighted by the roundtable participants. Fintechs need to be profitable, continuously sustainable businesses, so they need to have not just customer access but clarity on the regulatory environment. Having multiple regulators in the same area and a lack of clarity when fintechs are starting operations reduces room for innovation and might create regulatory issues when regulations are finally formulated.

The robustness of regulatory processes is among the top three concerns for 58%. The interviewed experts argue that regulations need to keep pace with development and not follow it. A clear regulatory system will help increase innovation. *One roundtable participant asked, 'If we don't have the right guardrails around security and privacy, both in the organisations and as a social set-up, how do we make people more aware of their digital footprint and their privacy and security?'*

Lack of robust regulatory processes is a key challenge/impediment for CEOs: 63% of CEOs/chairmen/presidents who responded to the survey chose this among their top three challenges. In the energy sectors, for example, uses are multiple but the regulatory framework is yet to evolve to accommodate fintech innovations in energy financing. *As noted by a roundtable participant, 'many companies are keen to buy carbon credits to meet their ESG targets, but there are no well-defined processes for the same'.*

Absence of required knowledge, skills and capabilities was a top-three concern of 52%. *'There is a huge gap in understanding data privacy needs at an individual level and it requires sensitisation. Protecting their data is an individual's responsibility and they need to be made aware of the mechanisms through which their data can be compromised', explained a roundtable participant. 'Overcoming [the data privacy] challenge requires continuous learning, collaboration, and investment in workforce development', noted a survey respondent.*

Across sectors, the top three challenges cited are largely similar. In financial services, respondents see the absence of regulatory processes and cybersecurity concerns as equally challenging. In the education sector, limited trust due to privacy and cybersecurity concerns is seen as a bigger challenge.



4. Path towards growth: role of practice and policy

4. Path towards growth: role of practice and policy

Industry experts envision a future where fintech will evolve into 'Finternet': multiple financial systems interconnected with each other, much like the internet, empowering individuals and businesses by placing them at the centre of their financial lives. It advocates a user-centric approach that lowers barriers between financial services and systems, thus promoting access for all (Carstens and Nilekani 2024). To achieve an inclusive future for fintech, everyone involved, from the regulator to fintech owners, users and finance professionals, has a role to play.

4.1 Role of finance professionals

There are multiple avenues for finance professionals to be involved in fintech. CA ANZ and ACCA's report, *Fintech: State of Play* (ACCA 2022) outlines 10 different job roles for finance professionals, from chief financial officers (CFOs) and auditors to digital transformation experts and entrepreneurs, and illustrates how their contributions and skill sets add value to the organisations that they serve.

Finance professionals have a role in enabling the integration of fintech at organisational level but this means meeting the challenge of the required knowledge and skills. From safe and effective integration of fintech tools to help organisations manage their finances better through efficient bookkeeping, payroll management and payment processing solutions to streamlining processes and implementing internal controls, both finance professionals in fintech firms and those using fintech need to optimise the use of fintech.

'While fintech is a great tool for equity and inclusion and has filled a major gap by enabling access to credit for economic as well as social purposes, a balance needs to be established between profitability and sustainable growth. Keeping in mind the best interest of consumer, and that is where finance professionals have a role to play by defining and supporting the implementation of internal control systems and adherence to required compliances', says Dr R. Narayanaswamy, retired professor of Finance and Accounting, IIM Bangalore and currently a part-time member of the National Financial Reporting Authority (NFRA).

Finance leaders and professionals need to apply the ethical approach as 'conscience keepers' in fintech setups and be objective about risks.

Regulations are evolving in fintech and so is the understanding of how they apply. Therefore, the need to grow, seek investment and increase revenue and customer base must be balanced by basic hygiene factors, such as implementing and following risk-management practices. Accountancy and finance professionals need a degree of balance and objectivity and an ethical approach to minimise the risk of unethical practices (such as limited clarity about the source of funds and violation of anti money laundering laws). Designing and implementing frameworks for ethical checks is essential. Understanding the risks and establishing the right checks and balances as the organisation grows is key to ensuring its sustainability.

'While the role of accountancy and finance professionals as a finance leader in a fintech start-up remains similar to their role in any other organisation, there is one key difference' as Dr Narayanaswamy highlights: 'the unstructured nature of the fintech ecosystem. Things are still evolving from a regulatory and compliance perspective, leading to limited clarity on the policy front. There is developmental work going on and everyone is in a learning phase. Unlike banking, where there are established systems and processes, fintech doesn't always have a precedent to look at for unfamiliar situations. Therefore, without precedence and comparison, at a practice level, implementing internal controls and mapping the required processes is challenging. As the policy-level requirements aren't very clear, the need for self-regulation and strict internal controls is stronger'.

To achieve objectivity, clear communication between the board and management is essential.

'Taking a cautious view as a professional – without worrying too much about being liked as you are not there to be liked and you are there to do the right things', Dr Narayanaswamy recommends. 'This will be appreciated over the long term', he adds. 'Technology doesn't have morality, ethics, humanity, compassion, sympathy and empathy, but technologists have these qualities. So the accountancy and finance fraternity has a major role to play in terms of propagating these qualities for those associated with digital transformation to achieve diversity, equity and inclusivity', adds Dr Basu.

Develop an understanding of the technology to implement the required internal controls through (a) upskilling and (b) communication with technology and legal teams. Whether working with a vendor to provide fintech or in an organisation procuring fintech, with the constant changes in compliance and applicable regulations, audit and assurance remain challenging. As fintech organisations grow, so will the need for audit and assurance. To keep pace and be able to implement the required internal controls, finance professionals need to understand both the technologies and the business to help them balance growth with the required controls. The risk of material misstatement is very high in fintechs but auditors can address this by equipping themselves and communicating fully with their clients about their expectations.

Narayan Ramalingam, CFO, Maersk GSC notes, *‘A key risk with fintech’s integration in finance processes is managing data properly. Every time a fintech-based system or process is introduced, finance teams need to define clear guidelines on how to manage data, how to ensure that data is shared within the organisation only on a need basis, ensure proper protocols are in place and that employees are trained to handle the data. To be able to do this, finance teams need to be agile – as they will have to invest the time to understand the specific technologies to help implement the required processes’.* *‘A certification in fintech to understand the sector [and] for the auditor to be confident about evaluating financial statements is recommended. It is important to understand the business one is auditing’, adds Dr Narayanaswamy.*

Cybersecurity threats necessitate robust protocols to safeguard sensitive information and financial transactions. By collaborating with tech teams to establish secure systems and legal teams to navigate regulatory requirements, finance professionals can manage risks effectively and protect their organisations through seamless integration and compliance with data privacy laws.

‘Business problems rarely come packaged solely as finance issues but as the finance person, you are responsible for managing the risk within the organisation. You might need to lean on your colleagues from legal and technology to have a comprehensive view and a better response to issues such as data privacy laws or cybersecurity. Adopt a collaborative mindset, recognising that you don’t know everything and need the expertise of others’, recommends Narayan Ramalingam.

Planning and forecasting are key skill requirements for professionals driving growth in fintech start-ups. To succeed in fintech, businesses need the ability to predict and plan ahead for likely evolution. Finance professionals control and oversee the management information system (MIS), and need to be innovative and fast in their analysis. Financial activities must be reported immediately, and finance professionals play a crucial role in ensuring this. These skills are also essential for driving financing for growth: ACCA’s report, *Founder’s Guide for Start-ups and Entrepreneurs: The Role of Accountancy and Finance* (ACCA 2024) outlines how finance professionals, by giving forecasting legitimacy, help foster investor confidence, thereby helping secure funding.

The ever-evolving world of fintech promises to keep finance professionals on their toes, offering continuous learning opportunities along the way. ACCA offers several certificate courses for upskilling: **Certificate in FinTech for Finance and Business Leaders, Certificate in Digital Innovation for Finance, Certificate in Data Analytics.**



4.2 Role of the regulator

RBI greatly boosted the growth of fintech, by setting up a [regulatory sandbox](#) to provide a safe, protective environment for innovative fintech start-ups (revised in February 2024): the timelines of the various stages of the Regulatory Sandbox process have been revised from seven months to nine (RBI 2024). Our experts make the following policy recommendations.

A market-friendly regulatory environment to balance consumer protection and innovation is needed. The challenges identified in the 2024 ACCA fintech survey align with the 2022 ACCA/CA ANZ survey, where cybersecurity was a key concern (expressed by 83% of respondents) of governments, businesses and the public. From a regulatory perspective, given fintech's data-driven nature, the privacy and cybersecurity challenges require strong consumer protection.

*'Having well-functioning brakes in a car allows one to maintain a certain speed, and regulations / stronger guardrails will play a similar role in fintech's expansion', says **Vivek Mehrotra of Wipro.***

RBI, the fintech regulator, promotes self-regulation. A *Draft Framework for [Self-Regulatory Organisation\(s\) \[SROs\] for the Fintech Sector](#)* was released in January 2024 (RBI 2024). An SRO is expected to monitor the conduct of member fintech entities. Some see this move to self/independent regulation as progressive and promoting innovation; our experts recommend it as a way forward, establishing some ground rules/guardrails for consumer protection. While taking a liberal approach at the start is important for innovation to flourish, the government/regulator must set up certain protocols and define boundaries once the market reaches a certain scale and size, as interviewed experts noted in relation to the rapid growth and expansion of fintech products and services. Stronger consumer-interest protections are needed, and beyond that 'principles or a trust-based approach' are recommended.

*'For growth and innovative sectors, trying to define everything stifles innovation and therefore, a laissez-fair approach to regulations built around a trust-based system of moral and ethical conduct works best for sectors such as fintech, where the regulated party knows a lot more than the regulator', says **Dr Preet Deep Singh, an AI expert.***

Prioritising secure data management and cybersecurity should be central to frameworks for government and regulatory approval of new fintech products and services. This requires the data and industry regulators to work together to balance regulations and innovation.





'When ...defining guardrails for consumer protection, it is imperative to establish comprehensive guidelines regarding consumer data management and the roles and responsibilities of fintech entities to ensure transparency and accountability. This entails defining the term 'fintech' and its various components clearly, including clarity on rules around access to consumer data, customer acquisition, fund management, and product distribution. The definitions and roles and responsibilities should be clear for developmental work to continue and for use cases to evolve. A regulatory body akin to IFSCA [the International Financial Service Centres Authority]⁵ could be established and tasked with overseeing these aspects. This department could facilitate collaboration among stakeholders, gather data on all entities involved, categorise the industry, identify risks, and work closely with regulators to evolve and implement policies that foster innovation while ensuring consumer protection and regulatory compliance. The SROs are expected to play this role', says Navin Surya.

Build on AI capabilities to shape regulatory frameworks: 72% of survey respondents said integration of AI in fintech platforms would improve security/speed of transactions (eg faster KYC, easier disbursement of loans). A roundtable participant cited the use of AI to authenticate transactions using features such as (appropriately regulated) facial recognition and voice recognition to enhance security. This also is a cue for regulators to use big data and regtech in shaping regulatory policies and frameworks. These technologies can provide policymakers with real-time insights, evidence-based decision-making, and predictive analytics to inform regulatory strategies and design effective policies. Policymakers can leverage these technologies to assess the impact of regulations, identify potential risks and vulnerabilities, and proactively address systemic issues (ORF 2023).

4.3 Role of fintech providers

It is crucial for self-regulation that fintech providers act ethically. Where regulated parties know more than the regulator, and the system is evolving, these parties should commit to transparency and explainability (including disclosing information to users in plain, understandable language). This is critical to building trust and accountability.

Focus on filling ‘white spaces’⁶ in the niche credit segments. Focusing on niche segments allows fintechs to differentiate themselves, giving a ‘first-mover’ advantage. RBI supports fintech innovations aimed at financial inclusion, including niche credit segments. For example, RBI encourages fintech providers to make credit cards available to currently underserved customers: SMEs and micro enterprises (together, MSMEs), gig workers, and specific consumer groups who need credit services but are usually underserved (Financial Express 2024). With dedication to meeting diverse customer needs, fintech companies can spearhead a more innovative financial landscape.

Balance growth aspirations with implementing required internal controls in collaboration with finance professionals. As with any start-up, defined processes and controls will facilitate responsible practices and ensure long-term sustainability. ACCA’s *Founder’s Guide for Start-ups* (ACCA 2024) lists corporate governance and internal controls practices for start-ups. Engaging with finance professionals to leverage their skills will support sustainable growth.

In summary, there’s no denying the crucial role of fintech as a catalyst for economic growth and innovation. With the increasingly positive perceptions of fintech’s role in India’s socio-economic growth, its expansion offers significant learnings for other countries.

Globally, for the fintech revolution to thrive inclusively, the world needs to work as a village. As Dr Basu concludes, ‘the international development ecosystem needs to come together to create one regulatory framework that can be universally applicable, like the World Aviation Standard or IFRS [International Financial Reporting Standards]. Every country will have its specific requirements at the national level, but the global framework and code of standards should help with using technology for humanity, and most importantly, for the world to share the value created’.

⁵ IFSCA is a statutory body established by the Government of India to develop and regulate financial services, financial products, and financial institutions in International Financial Services Centres (IFSCs). The Gujarat International Finance Tec-City (GIFT City) in Gandhinagar, Gujarat, is currently the only operational IFSC in India.

⁶ A ‘white space’ is a market segment that is underserved by current providers.



Appendix 1: Definitions of fintech products and services

1. **Online/ mobile only (fully digital) banking:** Banks with no physical branches
2. **Peer-to-peer (P2P) lending:** borrower connects directly with lender through an online platform, removing bank's role as intermediary
3. **Crowdfunding:** funding a project/venture by raising money from many people who each contribute a relatively small amount, typically via the internet
4. **Credit scoring:** statistical analysis performed by lenders and financial institutions to determine creditworthiness (ability to pay back the loan)
5. **International/domestic money transfer:** electronic funds transfer
6. **Cloud PoS/EPoS/EFTPoS:** point-of-sale technologies for processing and storing sales data online, as opposed to locally on computer or on-premises server
7. **Mobile payments, contactless payments:** payment using credit card details stored on a mobile, or where there is no contact needed to physically 'swipe' the credit card
8. **Payment gateway (API):** application programming interface – a software intermediary that allows two applications to talk to each other
9. **Regtech:** uses technology to improve regulatory controls/processes, eg risk/fraud profiling, regulatory reporting, market monitoring, digital identity, KYC
10. **Insurtech:** uses technology to improve insurance offerings/ process, eg apps to extend coverage or reduce premium (eg use-based), claims and risk-management applications, internet of things (IoT – including telematics)
11. **Wealthtech:** uses technology to improve wealth management, eg robo-advisers, personal financial management (budgeting apps, financial comparison sites)
12. **Trading, settlement, and custody:** Trading (buying/selling shares and other financial assets, eg high frequency/ algorithmic trading, copy and mirror trading), settlement (ensuring transfer of asset and exchange of associated funds among the correct parties, eg broking and clearing services), custody (secure mechanisms to hold assets, eg vaults, mobile/web wallets)
13. **Cryptocurrencies, NFTs:** cryptocurrency (digital/virtual currency that is secured by coding to protect it from fraud), NFT (non-fungible token – a token that cannot be exchanged for another on a like-for-like basis, eg a token representing ownership of a work of art which is the only one of its kind in the world)
14. **Central Bank Digital Currencies (CBDCs):** use technology to represent a country's official currency in digital form and are regulated by a country's monetary authority

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