

Banking made easy: the new theory of digital financial inclusion from a users' perspective

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Banking Made Easy: The new theory of digital financial inclusion from a users' perspective

Sau Wai LAW

University of Reading, UK

Email: sauwai.law@reading.ac.uk

Abstract

Existing studies of financial inclusion focus on reflecting its availability and accessibility only. This paper fills this gap by identifying factors to evaluate digital financial inclusion, defined as the impact of technology on financial inclusion, from the users' perspective. In 2019, Hong Kong launched eight virtual bank licenses with an aim to promote financial inclusion. It offers a suitable environment to address this issue. Results from 20 focus groups show that the intended usage of the virtual-only banking platform is affected by four thematic factors: namely: users' sense of security; engagement of regulators; promotion of the social acceptance of technology; and transparency and history of bank operations. These factors should be embedded into the landscape of banking regulation through a digital financial inclusion index as a prompt indicator of the digital acceptance level. This will assist regulators to offer timely policies to adapt to the fast-changing bank digitisation process.

JEL classification: K240

Key Words: *Financial Inclusion, Financial Regulation, Virtual Bank, Bank digitalization, Financial Technology, Technology Acceptance, Cyber Law*

I. INTRODUCTION

The importance of financial inclusion is beyond discussion, and new digital channels can make banking services more accessible and available through third-party devices. The modern digital era has also expanded the reach of banking services through new financial technologies and innovation. Banking clients can now literally “bank anywhere”, without the need to visit a branch or to sit in front of a computer. However, the impacts of the digital evolution of banking have not truly been evaluated. There is currently no universally applied model to objectively measure the impact of financial inclusion from this wave of technology advancement, which is defined in this article as “digital financial inclusion”. To measure the extent of digital financial inclusion, a digital financial inclusion index (“the index”) can continuously collect data to reflect and compare the usage of the banking system over time and across jurisdictions.

There are two theoretical hurdles to resolve before establishing the index. The first challenge is the conceptual complexity in defining financial inclusion and financial exclusion. Financial inclusion refers to the accessibility, availability and usage of financial services, which are often treated as enablers and accelerators of “broad-based economic growth and resilience, improved financial health, job creation and development”.¹ Financial exclusion is characterised as potential clients being unable to access financial services available to others due to factors such as poverty, a lack of infrastructure, and cumbersome paperwork requirements.² Regardless of how we examine these issues, they appear to represent two sides of the same coin as initiatives to promote financial

¹ UNSGSA, “The Imperative of Financial Inclusion”, online <https://www.unsgsa.org/financial-inclusion> para. 5.

² United Nations Conference on trade and Development, “Financial Inclusion for Development: Better access to financial services for women, the poor, and migrant workers” (2021) online: https://unctad.org/system/files/official-document/ditctncd2020d6_en.pdf at 27

inclusion could inevitably invite associated exclusionary factors.³ Several quantitative studies have highlighted a variety of factors such as region, age, education and seasonality that can affect how inclusive the finance world can be, and technology has become the new hope. Yet it remains unclear whether these factors promote financial inclusion or eliminate financial exclusion. There is an assumption that the fewer restrictions banks impose in terms of onboarding a client or offering a banking product, the more people will embrace the banking service. However, this assumption may not be valid in the digital era. This gives rise to the second challenge on the need to re-examine whether acceptance of new technology is inevitable or even automatic. The positive impacts of technology to financial inclusion can only occur when clients are comfortable in adopting the technology.

This article introduces a new theoretical foundation to address the two hurdles through exploring factors affecting usage from the clients' perspective. It does so by asking an important question of what factors influence the use of virtual banking and hence promote digital financial inclusion. This model can facilitate global empirical studies using real-time data collection and can be used to measure digital financial inclusion. To achieve that, Hong Kong is used as a base of this study, as the Hong Kong Monetary Authority (HKMA), the bank regulators in Hong Kong, launched eight virtual banking licenses in March 2019, creating a suitable environment to assess the views of banking clients.

II. THE UNSETTLING ROLE OF TECHNOLOGY IN PROMOTING FINANCIAL INCLUSION

The literature on financial inclusion is largely interdisciplinary in nature. It touches on areas such as banking and finance law, social sciences, computer science and corporate governance. Previous research has focused on measuring financial inclusion and evaluating its issues and challenges in the context of economics and public policy.⁴ For example, whether financial inclusion can help promote financial development,⁵ the argument for⁶ or against⁷ promoting financial inclusion, and whether it will contribute to overall banking stability.⁸ Within the literature there is an assumption that when banks reduce restrictions to onboard or offer banking products (especially a loan) to a client, more people will use the banking service. This presumption needs to be explicitly re-examined in the digital era.

There is also lack of notable research studying the impact of virtual banking on digital financial inclusion. Law (2021) started this specific study using Hong Kong as a case in point by raising three issues arising from virtual banking that could impact the role of Hong Kong as an international finance centre. First, how the bank–customer relationship has changed within the context of this new interaction model. Second, the need to evaluate whether existing transparency

³ Sau Wai Law, "Financial Inclusion and Virtual Bank in the Era of Digitalisation: A Regulatory Case Study in Hong Kong" (2021) *SocioEconomic Challenges* 5(3), 81-91. Available at [https://doi.org/10.21272/sec.5\(3\).81-91.2021](https://doi.org/10.21272/sec.5(3).81-91.2021)

⁴ e.g., Fernández-Olit, Beatriz, José María Martín, and Eva Porras González. "Systematized Literature Review on Financial Inclusion and Exclusion in Developed Countries." *International Journal of Bank Marketing* 38.3 (2020): 600-26. Web. Ghassibe, M., Appendino, M., & Mahmoudi, S. E. (2019). SME financial inclusion for sustained growth in the Middle East and Central Asia. *International Monetary Fund*. Fungáčová, Z., & Weill, L. (2015). Understanding financial inclusion in China. *China Economic Review*, 34, 196-206. Ghosh, J. (2013). Microfinance and the challenge of financial inclusion for development. *Cambridge journal of economics*, 37(6), 1203-1219.

⁵ e.g., Rasheed, B., Law, S. H., Chin, L., & Habibullah, M. S. (2016). The role of financial inclusion in financial development: International evidence. *Abasyn University Journal of Social Sciences*, 9(2), 330-348.

⁶ e.g., Sustainable Development Goal. "Take Action for the Sustainable Development Goal: The United Nations", online <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

⁷ e.g., Mader, P. "Contesting Financial Inclusion" (2019) *Development and change*, 49(2), 461-483.

⁸ Ahamed, M. M., & Mallick, S. K. "Is financial inclusion good for bank stability? International evidence" (2019) *Journal of Economic Behavior & Organization*, 157, 403-427.

and disclosure requirements will cater towards the growth of FinTech (Financial Technologies). Third, are the above issues caused by a general lack of technical literacy.⁹ Law (2022) also observed that the focus on technological innovations might not replicate the trust and confidence that exists in the conventional banking environment due to a lack of human factors that are vital to banking. The research revealed that a total physical absence of banks is unlikely to be successful.¹⁰

The role of technology acceptance also sheds light on the distinctive feature of a risk-based and technology-neutral financial regulatory system, which is still adopted in Hong Kong despite the launch of virtual banks.¹¹ The most used model to measure technology acceptance is the Technology Acceptance Model (TAM), developed in the field of social psychology by Davis (1989) to investigate the impact of technology on user behaviour. This has been widely used to evaluate the end user's acceptance of an information system through the two major variables: the perceived usefulness (PU) and the perceived ease of use (PEOU).¹² Since its first introduction, researchers have carried out validations of the TAM and extended its usage to test the acceptance of more types of information systems within different contexts. In addition to PU and PEOU, additional external variables have been included. TAM can also help identify factors that influenced the adoption of digital banking in different countries. For example, PU and information of online banking websites are the main factors that affected the acceptance of online banking in Finland in 2004.¹³ As technology advanced, other factors relating to the availability of technological facilities, perceived risk, integrity and credibility became important in affecting the adoption and satisfaction of internet banking by customers in India¹⁴ and Tunisia.¹⁵ In Malaysia, PEOU, "compatibility of software and observability", and "the degree in which the innovation results can be visible" influenced the behavioural intention to adopt digital banking.¹⁶ In Hong Kong, PU, PEOU, web security and personal innovativeness on technology have a positive relationship with the adoption of internet banking.¹⁷ There are other similar research studies in different judications.¹⁸ TAM is applied to assess the impact of financial inclusion through the adoption of FinTech and digital

⁹ Law, Sau-Wai, "Financial Inclusion and Virtual Bank in the Era of Digitalisation: A Regulatory Case Study in Hong Kong" (2021) *SocioEconomic Challenges*, 5(3), 82-93. [https://doi.org/10.21272/sec.5\(3\).82-93.2021](https://doi.org/10.21272/sec.5(3).82-93.2021).

¹⁰ Law, S. W. "Promoting Financial Inclusion Through the Launch of Virtual Banks? Empirical Insights from Hong Kong Banking Customers" (2022) *Journal of International Banking Law and Regulation*, 37(11).

¹¹ BIS Paper (2022) "Virtual Banking and Beyond", online <https://www.bis.org/publ/bppdf/bispap120.pdf> p. 22,

¹² Davis, F. D. "Perceived usefulness, perceived ease of use, and user acceptance of information technology" (1989) *MIS quarterly*, 319-340.

¹³ Pikkarainen, T., Pikkarainen, K., Karjaluoto, H., & Pahnla, S. (2004). "Consumer acceptance of online banking: an extension of the technology acceptance model". *Internet research*, 14(3), 224-235.

¹⁴ See for example: Nath, R., Bhal, K. T., & Kapoor, G. T. (2013). "Factors influencing IT adoption by bank employees: An extended TAM approach". *Vikalpa*, 38(4), 83-96.

¹⁵ Mansour, B.K. (2016). "An analysis of business' acceptance of internet banking: an integration of e-trust to the TAM", *Journal of Business & Industrial Marketing*, 31(8), 982-994.

¹⁶ Tiong, W. N. (2020). "Factors influencing behavioural intention towards adoption of digital banking services in Malaysia". *International Journal of Asian Social Science*, 10(8), 450-457.

¹⁷ Lam. "Analysis and News - Case Studies Navigating Covid-19: A Virtual Banker". (2020) HKTDC Research, online <https://research.hktdc.com/en/article/NTE1OTQ0MTI01>

¹⁸ Jin, X., Kuang, E., & Fan, M. "Too old to bank digitally?: A Survey of Banking Practices and Challenges Among Older Adults in China". In *Designing Interactive Systems Conference* (2021), New York, USA. ACM; Panos, G. A., & Wilson, J. O. "Financial literacy and responsible finance in the FinTech era: capabilities and challenges" (2020) *The European Journal of Finance*, 26(4-5), 297-301

services.¹⁹ For example, promoting awareness of digital banking,²⁰ and improving regulatory approach to reduce risk.²¹

However, these efforts might not explain how digital financial tools impact financial inclusion due to the following three unresolved limitations. First, existing TAM studies and their extended models do not directly address finance-related system usage from the customers' point of view, and there are none on virtual banking.²² Second, these attempts are based on a non-parametric approach to test the validity of existing factors, which may guide respondents to answer in preconceived ways without revealing their true perceptions. Third, TAM has not been applied to recent technology such as Artificial Intelligence, machine learning, and blockchain as they are still uncommon to the lay people, and are difficult to measure client's perception because many of these technologies are still new or not visible to the public. These issues may lead to the exploration of a new model to proxy digital financial inclusion. It gives rise to the theoretical gap between technology acceptance and digital financial inclusion which arises from a lack of clients' perceptions.

Virtual banking, defined as a bank which only serves clients on a virtual-only platform, could serve as a proxy for the impact of these technology as clients would be put in a situation where they will face the output of the technology all on their own without help from a human bank. Whilst the virtual bank has existed since the 1990s, they were amplified during pandemic in 2020 when the public had an actual need to live in a physically isolated place. The launch of virtual bank licenses in Hong Kong serves as a timely environment to conduct an empirical study through a client-centric approach and identify factors associated with clients' acceptance, reflecting the clients' perspective, and capturing the social norms and impact due to rapid bank digitisation progress.

III.METHODOLOGY

This study used focus groups with Hong Kong retail banking clients with diverse backgrounds. A total of 20 focus groups were conducted over two different periods. The first 10 focus groups were held in October 2021 with 32 participants and another 10 focus group with 32 participants were conducted in March 2022. The first 10 focus group participants were randomly chosen using a snow-ball approach, with the only criteria being for them to have a retail banking account in Hong Kong. The participants of the next 10 focus group were selected, on top of the previous criteria, with a mix of participants including both bankers working at virtual and non-virtual banks and non-bankers. Among the 64 participants, over 50% were aged between 30 to 39, and 15% were aged 40 to 49. Both the age groups of 18 to 29 and 50 to 59 each had a proportion of 12.5% of participants, and 2% were aged over 60. All participants were educated to a tertiary level. The participants were native Cantonese speakers. All except three participants resided in Hong Kong at the time of the interview. About half of the participants are virtual bank clients. The questions were derived from doctoral studies related to financial inclusion and virtual banking. The questions were focused on the theoretical perspective of the issues rather than habitual issues of virtual banks.

¹⁹ e.g., George A., Kumar GSG. "Antecedents of Customer Satisfaction In Internet Banking: Technology Acceptance Model (TAM) Redefined" (2013). *Global Business Review*, 14(4), 627- Gov.uk (2017) 638. Nath, R., Bhal, K. T., & Kapoor, G. T. "Factors influencing IT adoption by bank employees: An extended TAM approach" (2013). *Vikalpa*, 38(4), 83-96. Nasri, W., & Charfeddine, L. "Factors affecting the adoption of Internet banking in Tunisia: An integration theory of acceptance model and theory of planned behavior". (2012) *The journal of high technology management research*, 23(1), 1-14.

²⁰ Ananda, S., Devesh, S., & Al Lawati, A. M. "What factors drive the adoption of digital banking? An empirical study from the perspective of Omani retail banking" (2020) *Journal of Financial Services Marketing*, 25, 14-24.

²¹ Ebong, J, and Babu G. "Financial Inclusion through Digital Financial Services (DFS): A Study in Uganda." *Journal of Risk and Financial Management* 14.9 (2021): 393. Web.

²² Williams, M. D., Rana, N. P., & Dwivedi, Y. K. "The unified theory of acceptance and use of technology (UTAUT): a literature review" (2015) *Journal of enterprise information management*.

For example, they were asked to discuss under what circumstances they would use virtual services and what percentage of their total wealth will be banked with the virtual bank.

All participants provided an individual score (1 least important, 10 most important) in response to the factors crucial to their trust and confidence in a virtual bank. These factors may or may not be available to the existing virtual banks in Hong Kong. The scores were largely similar (Table 1), indicating a certain level of consistency between different sets of data.

	Area/Participant No.	Focus Group 1 to 10 (Oct 2021)	Focus Group 11-20 (March 2022)
a	It is easy to buy and use the hardware needed for a digital banking platform (e.g., smartphone)	8.156	8.387
b	It is easy to buy and use the banking software (e.g., the apps)	9.469	9.097
c	I understand the cybersecurity risks and their mitigation.	9.063	9.613
d	I can approach a human banking staff member of the bank	6.125	6.387
e	I know or am confident that the virtual bank will not close down	9.563	9.161
f	I understand how the virtual banking business operates	7.188	6.968

Table 1: Factors crucial to build trust and confidence in using virtual banks (Different sets of data among focus groups).²³

There are three data limitations and associated mitigations. The first is sample size. Given the small sample size of 20 groups, it should be recognised that the findings may not be generalisable, but the data should represent a fair view of how retail banking customers might regard virtual banking. Second, most data come from Hong Kong participants, which might not be fully reflective of people from other areas. This is mitigated through the internationally diverse banking environment in Hong Kong, with over 200 fully licensed banks, most of which are head-quartered overseas.²⁴ Finally, the responses inevitably involve comparisons between non-virtual banks (conventional banks) and virtual banks, and therefore respondents have already been embedded with a channel of banking products and services they are accustomed to. Nevertheless, given that most banks in developed countries are digitising their platforms and given that it is almost a necessity for citizens to have a banking service, it is impossible to exclude the previous experience the participants have.

IV. THEORISING FINANCIAL INCLUSION FROM THE USERS' PERSPECTIVE

Four factors positively affecting digital financial inclusion were identified. They are users' sense of security, engagement of regulators, social acceptance of technology, and transparency and history of operation. This section explains the underlying rationale of each of these factors and how they

²³ Sau Wai Law, "Promoting Financial Inclusion through the Launch of Virtual Banks? Empirical Insights from Hong Kong Banking Customers" (2022) 37 J.I.B.L.R. 429–439 p. 434, figure 3.

²⁴ HKMA (2023), "List of Licensed Banks", 28 Feb 2023, online https://www.hkma.gov.hk/media/eng/doc/key-functions/banking-stability/banking-policy-and-supervision/list_of_lb.xls

contribute to financial inclusion from the users' perspective, where the full description and analysis are published in a separate monograph yet to be published at the time of writing this article.²⁵

IV.A.1. Factor 1: User's sense of security

A sense of security refers to clients' trust and confidence in the devices they use to conduct banking transactions. It is not only restricted to whether clients can have trust in the bank itself, but also whether they find it safe to engage in virtual-only platforms for placing deposits, executing investments and seeking investment advice. The respondents highly regarded the need for human touch with a real person in case they encounter issues. This has little to do with what kind of products or services they would engage in with a bank. The availability of a human member of staff is key. Virtual platforms were welcomed by participants partly due to the Covid-19 pandemic, but turning into a virtual-only world by eliminating physical branches is unlikely to encourage customers to use more banking services and does not promote the user's sense of security:

Conventional banks can perform all the tasks that virtual banks have been doing, but not vice versa²⁶

For customers who want someone to talk to, a virtual-only platform causes an issue with trust and risk.²⁷

The sense of security comes from different facets. First, is the flexibility that human bankers can offer. Interactions such as explaining the reasons why the bank offers some rates but not others are essential. Bankers can react to customers' requests directly and show some form of empathy. Clients feel safe when they know there will be a member of staff to help them fix any issues or handle extraordinary circumstances that may not be explained by existing protocol. However, some participants reflected that human interaction may invite unwanted cross-selling and potential misrepresentation accusations, which could be a benefit of using virtual banking services, which operate using computerised responses:

The major benefit of a real person is the flexibility: to adjust the credit limit, to report a loss, to interact with a client. However, bank staff always cross-sell me and sometimes it is annoying. If I give an instruction in the banking app to conduct a transaction, the chatbot will not introduce other products to me and I can focus on what I originally intended to do.²⁸

The second issue is privacy, which refers to whether customers can handle banking matters on their own without interference from others. Some participants liked the idea that they could handle matters without physically going to a branch as they will not be exposed or under observation. When customers go to the branch, their privacy may be exposed, sensitive information may be asked for, and conversation may be over-heard or put on record. In this respect, virtual banks can offer the privacy conventional banks cannot:

I will find the information when I need it, but very unlikely at the time when I am handling my transactions at a branch. I don't want to be disturbed at that

²⁵ Law, S.W *Financial Inclusion, Technology and Virtual Banking: A Theoretical Perspective*. (Springer, 2024) Ch 4 and 5

²⁶ Participant 1, Focus Group (March 2022).

²⁷ Participant 37, Focus Group (March 2022).

²⁸ Participant 3, Focus Group (March 2022)

moment, I rather want to receive clear services, charges, or instructions, be it in a conventional bank or virtual bank.²⁹

Bank customers feel safe when they are left on their own to handle banking matters but are still given timely and useful support when needed. It is common that a successful bank-client relationship is always a very close one as customers would entrust the bankers entirely and count on the advice tailored for a particular client. Whilst virtual banks cannot offer this closeness of relationship, clients could navigate digital platforms and evaluate what fits them on their own. Here, the privacy offered by the virtual bank might come at the cost of a lack of human touch. Weighing the two, our participants seem thus to prefer the human touch.

The third is the strategy of virtual banks. In Hong Kong, virtual banks are still in their start-up stage and hence their strategy appears to be in acquisition mode – spending a lot of resources to acquire as many deposits as possible. This creates an impression that virtual banks are in a loss-making business model and the focus group participants did not know how virtual banks in Hong Kong could make a profit. This has negatively impacted customers' confidence due to lack of long-term profit-making strategy and the belief that some virtual banks would close in a few years. Customers need to see how virtual banks make money over the long term:

Some virtual banks are bound to fail in a few years' time unless they have other profit-making strategies different from what they have been doing currently. It is unclear to me why they would offer such a high interest rate to attract small deposits. Do they just want our personal data to sell to third parties?³⁰

To conclude, customers seek a sense of security when conducting banking transactions. It is evident that our focus group participants lack a sense of security due to concerns about privacy and a preference for having human staff available when needed. These factors may not prevent them from using the banking service, but they are likely to deposit only a small amount with their virtual bank to test it out. Their main motivation is the attractive offers and discounts, although they do not believe these offers will last long. They are prepared to withdraw their funds from the bank once these offers and discounts are no longer available.

IV.A.2. Factor 2: Engagement of Regulators

The HKMA has emphasised virtual banking as one of the FinTech initiatives to “Make Banking Easy”.³¹ This clear mandate, however, does not give leeway for regulators to promote the use of virtual banking because it may be unfair to conventional banks. Nevertheless, the focus groups showed strong support for the idea that regulators should further engage in supporting the development of virtual banking as it represents the emergence of FinTech. The question of how this can be evaluated comes under the following two facets: first, is the policy needed to support the operations of virtual banking without imposing unnecessary burdens, while simultaneously not showing favour to either conventional banks or virtual banks. Second, is whether regulators should educate the public, however there are worries that such education could turn into promotion. These two issues lead to a debate as to whether virtual banks should be subject to the same set of principle-based requirements as conventional banks.

Focus group participant 14, who works in a virtual bank, revealed that the regulator does not allow the virtual bank to put a marketing booth in a public area and engage with clients face to face. They only allow virtual banks to acquire clients through a virtual platform. Although this claim is

²⁹ Participant 41, Focus Group (March 2022)

³⁰ Participant 31, Focus Group (October 2021)

³¹ HKMA (2021), “Banking Made Easy Initiative”, online <https://www.hkma.gov.hk/eng/key-functions/banking/banking-regulatory-and-supervisory-regime/banking-made-easy-initiative/>

difficult to verify from public sources, it supports the participants' impression that virtual banks face additional restrictions to conventional banks. This might mean it is unfair for virtual banks to be subject to the same regulations as conventional banks. Regulations on virtual banks might discourage usage as it restricts product availability:

When clients choose a bank, they will not read the regulations or guidelines. Just simply consider how many branches, ranges of products and services scope. Virtual banks are clearly lagging in this with an added issue of cybersecurity. They are not comparable to conventional banks. Who will choose a bank without a proper tangible credit card, no branch, and no ATM? It is not about how well the regulators govern the virtual bank, but it is about why the HKMA would allow them to exist, but regulation seems to create difficulty for them to survive in the market.³²

This imbalance could be made equalized if the regulators encourage usage of virtual banks. Participant 52, a banker, related the promotion of a Faster Payment System (FPS) to the promotion of virtual banks. FPS enables bank customers to make cross-bank/e-wallet payments by entering the mobile phone number or email address of the recipient, allowing for the immediate transfer of funds.³³ Participant 52 stated that if the HKMA could promote the use of FPS, they could also promote the use of virtual banks without creating an unfair advantage. Nevertheless, FPS is a function that is applicable to all banks and is implemented by the HKMA, whilst virtual banks are operated by individual corporations. Promoting virtual banks could equate to promoting private businesses.

Focus group participants discussed the difference between promotion and education. Some said the regulators should educate the public on the operations and functions of virtual banks and highlight their trustworthiness and competency, and discuss them as the future of mainstream banking. To these participants, education means offering more information for the public, whilst promotion involves offering incentives for the public to engage with virtual banks:

I think the regulator doesn't need to promote the virtual banks. In fact, they should not. The licenses obtained is the best promotion already. The regulator is convinced that virtual banks know how to survive under the regulatory framework and supervision. Such credential is the best strategy to promote. As the regulator is from the government, it should be fair to all banks. It is unnecessary for them to promote how good virtual banks are and it should be the job of the virtual banks to demonstrate their competences and trustworthiness.³⁴

I think the regulator should educate the public and offer an unbiased view of at least the following: virtual banks fulfil the requirements of the regulator prior to launch; why virtual banks are safe to use; how to engage with a virtual bank; what are the common pitfalls with virtual banking operations; who can we talk to when a digital response fails to address the clients' need. This information boosts our confidence, and it is definitely not promotion.³⁵

³² Participant 52, Focus Group (March 2022)

³³ HKMA (2023), Faster Payment System, <https://www.hkma.gov.hk/eng/key-functions/international-financial-centre/financial-market-infrastructure/faster-payment-system-fps/>

³⁴ Participant 58, Focus group (March 2022)

³⁵ Participant 57, Focus Group (March 2022)

It was argued that regulators should educate the public about technological advancements, changes to the regulatory landscape, and key functions of virtual banks. Comparison should be made between virtual and conventional banking to raise the public's awareness. The regulators should also make transparent the following: (a) how regulation related to virtual banks is implemented; (b) the technology embedded in virtual banks, its governance and related measures against cybersecurity concerns; and (c) how the regulators observe and track the short- and long-term impacts of how virtual or digital banking influence financial stability. All these efforts play a crucial role in creating psychological readiness for the public to adopt virtual-only banking platform.

IV.A.3. Factor 3: Social Acceptance of Technology

When banking services are everywhere, measuring financial inclusion becomes a question of whether those services are acceptable to clients, easy to use and user friendly. This is like the concept of the Perceived Ease of Use and Perceived User-Friendliness adopted in the TAM. However, these factors may not fully reflect digital financial inclusion from the users' perspective. In the focus groups, participants who did not want to use a virtual banking service seemed to be more receptive to knowing more about technology only after an interaction with participants who uses virtual banking. Participant 45 convinced another to open a virtual bank account, saying:

(Have you used the banking service more frequently through the virtual bank?)
Absolutely more frequently. To me, convenience matters. I need to eat every day and it is convenient to go to a restaurant that is nearby. A virtual bank is nearby due to technology.³⁶

Peer influence is a crucial factor reflected in the level of social acceptance of technology, which is related to the convenience technology brings to customers. Clients prefer simplicity over complications. Currently, the user interface of online platforms developed by the conventional banks can be complicated, but simplicity can also imply a limited scope of banking services available. Participant 62, a banker, validated this point by stating that since all banking products and services are supported by technology, customers' level of acceptance of the technology determines the usage of the product or service. Participant 55 said:

It is like buying a bottle of water through a vending machine, you need to trust the machine in the first place, and in case the machine fails and 'eats up' your money, you only lose 10 dollars, which I can accept.³⁷

The dynamics between technology development and clients' acceptance are in play here. From a client's perspective, clients want to protect themselves from potential loss caused by changing banking habits. Currently in Hong Kong, virtual services are acceptable by participants only if the potential loss is small, they are generally not motivated by the convenience or benefits of virtual banking:

I agree that the interface of conventional banks is too complicated, but then they have more products so I don't need to shop around for different needs.... I understand virtual banks are easy to use, but there are many questions: how do they validate my identity without human interaction? What if my facial image is

³⁶ Participant 45, Focus Group (March 2022)

³⁷ Participant 55, Focus Group (March 2022)

stolen to conduct crime? Who can I talk to under dispute? Do they have proper procedures?³⁸

One notable observation is that Ease of Use may not drive more usage. In fact, the virtual banks might be too easy for participants to trust them. Are virtual banks too casual about their operations? This dilemma has two sides: if there are complex procedures clients can feel annoyed about the long waiting times; but when there is no need to wait people can be cautious about whether banks have carried out proper due diligence. This conflicting view is likely caused by the fact that clients do not know about the structures behind the wheel. There might be very thorough control measures behind the scenes which can be conducted quickly due to technology, but customers are not aware of how technology can make this possible and therefore simplicity can create resistance. The focus group participants reflected on various needs which could be useful if performed online, but also recognised that their own preferences may not be generalised to fit others:

I would learn how to place a deposit or exchange foreign currency through an online platform myself. I am accustomed to buying insurance through an online platform. But I would not apply for a mortgage nor a complex investment product without anyone explaining the product to me in person. Service is important, some people prefer to talk to bank staff to interact.³⁹

Social acceptance to technology refers to whether technology brings convenience weighed against the efforts needed to adopt. In the focus groups, virtual banks were perceived to be less convenient due to their limited service offer and hence there was a belief that there is no point in learning how to use virtual banking.

IV.A.4. Transparency and History of Operation

To engage with a virtual banking service, participants said they need to understand how virtual banks operate and be able to easily find the information to evaluate the soundness and effectiveness of the operation. Traditionally, trust and confidence come from the fact that conventional banks have a long history of operation and have survived through different market cycles. For virtual banks this is a “chicken and egg” situation. Virtual banks do not have a long history of operation, which means they do not have a chance to show to their clients how resilient they can be. This is a self-prophesising cycle and the way to break it as proposed by the participants is total transparency. Transparency helps clients receive the right signals that they can operate in a proper and sustainable manner. The following factors were identified by the focus group participants:

Business model. This refers to how they can maintain a profitable business despite lower fees charged and higher deposits rate offered when compared with other conventional banks. It does not seem to be a wise way to make a profit but perhaps the only way to differentiate themselves in the eyes of the public:

The only difference is the price and it is done at loss-making manner. It sends a few unhealthy signals... At the end of the day, if the offer is only temporary,

³⁸ Participant 37, Focus Group (March 2022)

³⁹ Participant 36, Focus Group (March 2022)

why would I open a virtual bank account and then close the account later when the offer is gone?⁴⁰

Although some clients thought it was inevitable for businesses to invest and grab clients first, it is difficult to predict how virtual banks grow loyal customers and make a profit.⁴¹ This implies that the launch of a virtual bank does not excite bank customers as there is nothing new to offer. Every bank has been developing its own online platform. There is no significant reason, except for the discounts and offers, for customers to change to the virtual banks:

I think it may work in the short term, but in the long term too much time and money is spent to attract customers, which is costly and doesn't help to make profit. It will only work if the virtual banks can establish their own brand and find a unique service or operation that is only found in the virtual banks but not conventional banks.⁴²

Marketing strategy. Even if virtual banks are currently expanding and gaining attention, it perplexed the participants as to whether offering discounts is the only way for them to market themselves in Hong Kong. Could discounts attract long-term customers and generate sustainable profits? Almost all participants were not able to distinguish the differences between a virtual bank and a banking app developed by a conventional bank. For those who could, such as Participant 23, who works in a FinTech company, they supported the notion that technological advancement is supposed to distinguish them. However, the participant argued that conventional banks would one day be “woken up by the virtual bank” and start to “catch up”. In fact, some virtual banks are owned by conventional banks to test the latest technological advancements. Those factors do not seem to benefit customers directly.

Product. This relates to whether the virtual banks can develop the products specific to their target customers. Participants needed to know the differences between the products offered by virtual banks versus conventional banks. Participant 53 said virtual banks only offer a small-scale version of what the larger banks offer:

If virtual banks are backed by conventional banks, maybe they can offer different types of products – but the only difference would be the scale of the same product otherwise available in the conventional bank, not really the product itself. The product may be available online without a member of staff to explain or provide advice. Beside the competition among virtual banks themselves, the conventional banks also have more product to select so I don't need to shop around for different needs.⁴³

Compliance: Compliance could be an issue – currently all virtual banks can only provide services to residents. Participants perceived that the compliance requirements of the banking industry are complex and ever-changing. However, the idea of a virtual bank is to become geographically mobile so clients can open and operate an account either overseas or in Hong Kong. The expected ongoing change of regulatory focus is likely to concern customers:

I think that we must know whether the virtual banks do comply with the regulation. Can they really open an account without seeing my face? Can I open an account when I am not living in Hong Kong? How do they know if I am

⁴⁰ Participant 37, Focus Group (March 2022)

⁴¹ Participant 52, Focus Group (March 2022)

⁴² Participant 36, Focus Group (March 2022)

⁴³ Participant 53, Focus Group (March 2022)

living in Hong Kong? What mistakes will virtual banks make to make them lose their license? Are there other legal and regulatory breaches?”⁴⁴

Education: In Hong Kong, Principle 5 of the Treat the Customer Fairly Charter requires banks to “join force with government, regulatory bodies, and other stakeholders in financial education to promote financial literacy”. For virtual banks, both financial literacy and technical literacy are crucial. It is likely to be another cost that may not fully help them generate extra revenue:

It is exciting to see this new banking model. But how does it work? It looks like an online marketing tactic. How much technology do I need to know?⁴⁵

System maintenance: Given the consistent change of clients’ preferences on how to read the information, regulatory requirements, and the need for data analytics, a recurring cost for virtual banks to maintain client communications using technology is likely to mount. This involves hardware and software updates, user interfaces of the platforms, and the ecosystem developed between banks, clients, and other merchants. Particularly in terms of building an ecosystem, it involves connecting different systems and IT configurations. Participants could not see sufficient synergy to make this happen, not to speak of creating a culture:

I think of course virtual banks will be more prevalent. It is true because every business is going virtual – for example you can view a flat online. But with virtual banks offering the same service, I do not see what makes virtual banks stand out from others. The key is how the technology can facilitate such virtual-only platforms like search engines such as Google.⁴⁶

V. RECOMMENDATION: REAL-TIME MEASUREMENT OF CUSTOMERS’ LEVEL OF TECHNOLOGY ACCEPTANCE

People have their own reasons to use virtual banks.⁴⁷

Financial inclusion has long been regarded as an important agenda to the sustainable development of a region. Over the years, there have been enormous efforts to expand the reach of banking products and services to the public. However, the impact is difficult to evaluate as existing measurement of financial inclusion is time-lagged, with little granularity. There is a need to measure digital financial inclusion to facilitate its prompt reflection and measurement. This article proposes four factors to measure the user perspective. This is increasingly an important concept as it may obstruct the growth of technological innovation if policies and regulations are only imposed a long time after the technologies they are regulating have been deployed. The only way to “catch up” is to look at the reactions of users alongside the products and services offered in the digital space. The point brought by Participant 43 is of value:

In the past, distance to branch discourages financial inclusion, but is closing all the branches the right solution to it? Similarly, even if virtual access can promote financial inclusion, does it mean that society will drive to virtual-only access? This

⁴⁴ Participant 63, Focus Group (March 2022)

⁴⁵ Participant 56, Focus Group (March 2022)

⁴⁶ Participant 42, Focus Group (March 2022)

⁴⁷ Participant 57, Focus Group (March 2022)

question is an important demand-side question as only customers would be able to tell through their actions.

Financial technology can bridge the gap of financial inclusion by making provision of these services faster and more seamless. Nevertheless, even if access to banking products and services is secured through technology, financial inclusion might not be promoted if users do not have any trust on the channel. This research involved interviews with bank users who discussed the launch of virtual banking in Hong Kong to study what will encourage digital financial inclusion. The findings shed light for bank regulators that users might not include themselves automatically by the mere existence of technology, but further efforts should be put in place to ensure users will receive a better experience. These efforts could be categorised into four thematic factors: users' sense of security, engagement of regulator, social acceptance of technology and transparency and history of operation; and these factors provide theoretical basis of the index to reflect the user's digital adaptiveness.

The theoretical foundation lying behind these factors has the following three implications: First, the stability of the banking and financial system might not be solely based on the strength of banks and financial institutions. User acceptance is critical as banks can now reach out to an infinite number of clients in a matter of minutes. Clients' reactions could be extremely quick, but they are hugely subject to the factors of a sense of security and social acceptance of technology. Second, the strength of financial institutions might now be dependent on other third-party owned devices – most notably the platforms used to provide banking services through smartphones or over the Internet. This is largely reflected by the factors of transparency and history of operation. Third, the changes in the bank-client relationship are not physical. This is largely reflected through the factor of engagement of the regulator, such that clients would know that such changes are under proper scrutiny and supervision and monitoring should constantly be reviewed and monitored.⁴⁸

The debate around financial inclusion is also a debate on to how banks might attract customers to adopt technology, and to evaluate whether technology is inclusive in nature. A real-time monitoring system of clients' acceptance of virtual banking should be conducted. A financial inclusion index should be constructed through measuring the four factors of digital financial inclusion from the users' perspective. A periodic and region-wide scale of data collection processes would serve as a useful global indicator when introducing technology and innovation into banking systems.

⁴⁸ See also, Law, S. W. (2023). *Banking and Finance Dispute Resolution in Hong Kong: The Suitability of Arbitration in Private Disputes*. Routledge. Ch. 6.