How can Open Banking be Implemented in the Philippines that will be Beneficial for both the Banks and the Unbanked/Underserved?

Working Paper

Submitted by

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ABSTRACT

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The unbanked and underserved groups of our society usually are not formally employed. So they cannot produce a Certificate of Employment (CoE) or Income Tax Return (ITR) as proof of their capacity to pay when they are applying for a loan. Most are in the informal type of employment (e.g., market vendor, online selling, etc.). And this group usually have eWallets (e.g., GCash, Paymaya), pays their utility bills (i.e., Meralco, Nawasa), and shops in malls (using their point-earning cards). All of these channels are good sources of data that could be used as objective evidence of a person's capacity to pay. This is a working paper aimed at exploring the ways that the Philippine government, Bangko Sentral ng Pilipinas (BSP), Banks, and Fintechs could properly design the implementation guidelines of Open Banking so that it will be beneficial to the unbanked and the underserved groups of our society. Method to be used is a hybrid of qualitative and quantitative. Qualitative will use *descriptive coding* and *pattern coding*. While for quantitative, the Expectation-Confirmation Theory (ECT) shall be adopted. Survey questionnaires focusing on customer-centricity shall be employed for this purpose. The statistical tool SmartPLS v3 shall be used to verify the validity and reliability of the ECT constructs. Open Banking is still in the early stage of implementation globally, with 39 countries having already implemented. while 41 countries are in the planning stages (PricewaterhouseCoopers, 2017). The Philippines belongs to the 41 who are in the planning stage. The result of this study is that regulators and institutions should be able to assess how the Philippines will implement Open Banking compared with other countries that have already moved ahead. Always keeping in mind though the contextual, cultural, and technological readiness when doing such comparison because countries vary on several factors and dimensions. This study will also help ensure that implementing guidelines are designed with the unbanked and underserved as its priority. Helping this sector is beneficial for the banks (as growth opportunities), the underserved group (for financial inclusion and more opportunities towards financial sufficiency), and the country (for economic growth).

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1. Introduction

Being unbanked or underserved means not having the opportunity to improve one's financial capability because of being excluded in the financial ecosystem. Safe and secure savings, reasonable loans, and sound investments are the basic services that the financial industries are providing the people. A person who cannot avail of these are vulnerable to cash theft, and to predatory schemes such as loan sharks and investment scams. With this socio-economic issue comes Open Banking, a regime that holds substantive prospects. Open Banking is a mechanism where financial institutions (e.g., banks, insurance companies, etc.) are sharing consumer data with third parties (e.g., data aggregators, eWallet providers, utility companies, etc.) through the use of an application programming interface (API) (The Investopedia Team, 2022). This open banking concept began with the idea brought forth by Henry Chesbrough in his book Open Innovation (Chesbrough, 2003). He posited that open innovation is a must if a firm would want to thrive. This is in contrast with businesses that adopted the approach of closed innovation (e.g., Xerox, IBM). IBM has already transitioned though to open innovation. Thus, for this open banking innovation, financial institutions will be sharing customer account and transaction data so that data analytics could be applied, that will provide insights so that companies could provide tailored products and services. All consumer classes would benefit from this business model but more so the unbanked and underbanked. In a study conducted by Davies et al., it was established that the poor are the ones paying more for goods and services, which they termed as the 'poverty premium' (Bristol, 2016). With open banking, transparency will be achieved such that underbanked consumers who really have the capacity to pay will be identified and therefore will be charged less. Financial institutions are charging more for the lower-class consumers as part of their risk mitigant (of payment default). And rightly so because they do not have sufficient data and insight, to assess if the customer has indeed the capacity to pay. Open Banking will thus uncover the 'real' capacity to pay, accurately separating the 'good eggs' from the 'bad eggs'. This situation is a win-win for both the firms and the consumers.

The purpose of the study is to explore on the effective designs that will be beneficial in implementing Open Banking in the Philippine setting. Given the experience of several countries and central banks that have forged ahead, the Philippines should be able to glean on the applicable learnings. With the socio-economic and technological aspects of

the promises that Open Banking is offering, how could the Philippines, a developing country, be able to setup and establish the mechanisms and structures required for a successful Open Banking implementation? On top of providing assurance of data privacy and security, what could be the driving forces that could nudge both the Banks and the Underbanked/Underserved? These are the questions that are being brought in the fore, in order to layout the foundations and hopefully the beginnings of a new era of financial economy underpinned by transformations in technology.

Alternative Data

Using traditional data sources to assess a person's creditworthiness is not anymore enough, and in some situations is not reliable anymore. Thus, alternative data is being advocated, not only by fintechs but also by the Bangko Sentral ng Pilipinas (BSP) (Neil, 2022). Alternative data covers "consumer's utility, rental, insurance, and other bills payments history, social media usage, employment history, travel history, e-commerce, government transactions, and property records" (*Alternative Data Is Now Mainstream in Credit Risk Analysis - EarlySalary*, 2022). A person not being seen as creditworthy because of the firm's inability to harness alternative data, is therefore being withheld of opportunity to avail of needed financial services. And if by chance that customer was somehow approved of a loan, the interest rate and fees are oftentimes high (to cover for the 'perceived' risk) and not commensurate to the 'actual' risk of that person's capacity to pay. Historical behavior gleaned from these sources could help the bank in accurately assessing its customers. The pertinent information is hopefully then well understood, and on the other side, risks and options are properly explained as well to bank customers.

Assumptions, Scope, and Limitations

The study covers earlier implementations in various countries (i.e., United Kingdom, United States, Australia, Canada, Singapore, Japan, India, Nigeria, and Kenya). See Figure 1 – Open Banking Around the World, and we can see that there are various factors that are driving OB. Some are market and competition-driven, others are regulatory-driven, while others are hybrid (i.e., a combination of both market and regulation). A limitation that can be noted is the absence of a country with similar size and economic status that has already embarked on Open Banking. But the countries mentioned earlier are already good case studies because they represent different socio-economic levels, which are sufficient enough to perform qualitative coding. From there, an analysis of which aspects

are similar could be performed, or at least find aspects that could be used as a proxy in the absence of an exact characteristic.

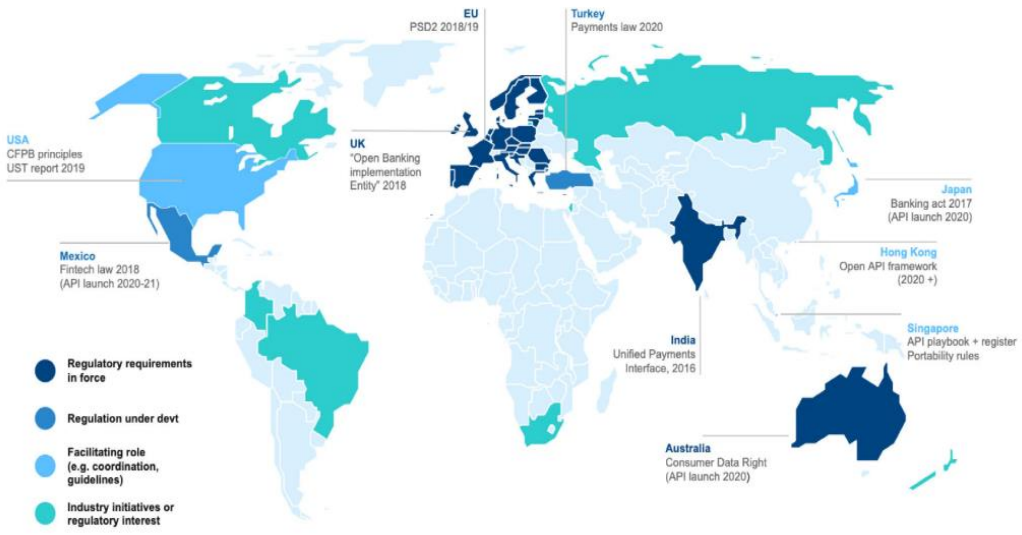

Figure 1 - Open Banking Around the World, (BBVA, 2020)

2. Theory, Literatures, and Gaps

Open Banking is now implemented in 49 countries, and is being discussed for implementation in 31 countries (Babina et al., 2022). Here in the Philippines, the Open Finance Framework (Circular 1122) was released by the Bangko Sentral ng Pilipinas (BSP) last June 2021 (*Bangko Sentral Ng Pilipinas Regulations - BSP Issuances*, 2021), which is part of a larger plan of BSP's payment digitalization roadmap, with the aim of financial inclusion. The study by Plaitakis and Stachen provided a robust framework where an emerging or developing country which is planning to implement OB will be thoroughly guided (Plaitakis & Staschen, 2020). **Table 1. Open Banking Regimes** is an organized information of Regimes and corresponding Types and Description from what the authors have proposed.

Regimes	Types/Description
Components on Scope	
Types of Service	Broad Scope (including Credit, Insurance, etc.) Targeted Scope (Banking, Payments)
Participants	Data Holders (Institutions, Use Entity, Financial Sector) Data Users (Third-Party Providers)
Types of Data	Generic Customer Transaction
Payment Initiation	Most beneficial for financial inclusion.
Components for Implementation	
Participation	Mandatory Voluntary
Technical Specifications for Data Sharing (APIs)	Standardized APIs Industry will set standards
Staged Implementation	Criteria for staged implementation: 1. Data sensitivity 2. Types of services 3. Type of entity that will release the data
Lead Regulator/Policy Mandate	Usually the Central Bank. In the Philippines, it's the Bangko Sentral ng Pilipinas (BSP).
Governance	Assigned entity or group to handle governance.
Cost Distribution	Which party will shoulder or share the cost. This is a significant factor for the low-income groups.
Data Privacy and Portability	The presence or absence of a national data protection regulation or, is the regulation sectoral only.
Liability and Consumer Protection	Covers implementing rules and dispute management.

Table 1. Open Banking Regimes, (Plaitakis & Staschen, 2020)

The circular released by the BSP last June 2021 (Circ 1122 – Open Finance Framework) is largely based on this framework (*Bangko Sentral Ng Pilipinas Regulations - BSP Issuances*, 2021). Further, **Figure 2 - Strategic Positioning for Open Banking, (PricewaterhouseCoopers, 2017)** shows the categorization in terms of approach that Banks could adopt or have adopted. The strategic positioning was illustrated in two-dimensional array of "Added Value" and "Data Openness". The percentages shown are the chosen preferences of the banks that was surveyed. Clearly, most banks prefer to be a "Platform-Aggregator". Value add is high in this part of the matrix but the openness of data is also

high which needs greater assessment and scrutiny on how this could be implemented effectively.

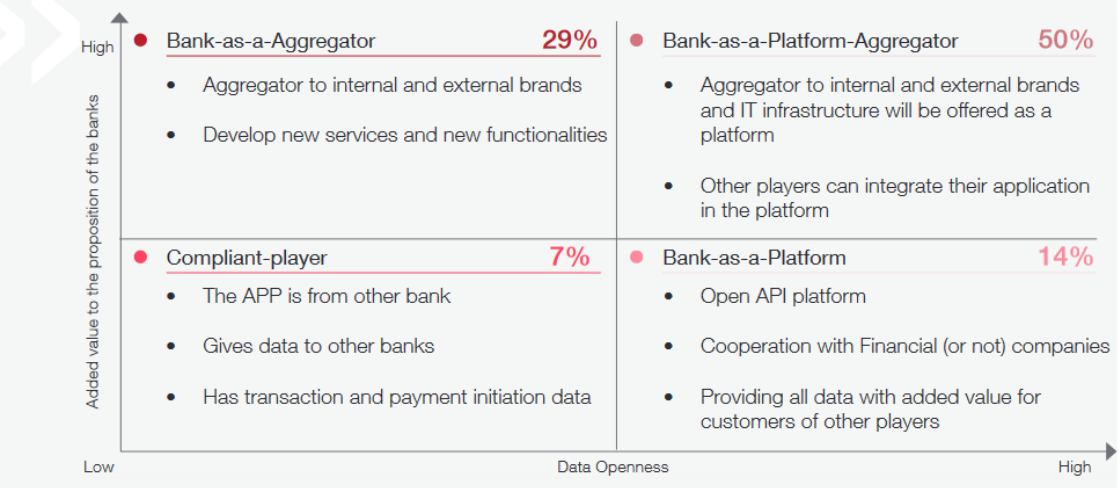

Figure 2 - Strategic Positioning for Open Banking, (PricewaterhouseCoopers, 2017)

With opportunities comes threats. These forces always come together and it's up to the implementers to balance these opposing factors and make the most out of it. One of the cited threats is on the side of the bank wherein their treasured customers (and their data) will not be within their sole control anymore (Omarini, 2018). Customers are now free to choose the best provider there is thus, the need to be always on top of their game. And this is where *customer centricity* will be a major deciding factor. Same is true with financial institutions. I.e., they can easily identify the customers that they need to focus their marketing efforts on. The advantage of Open Banking being put forth in the study of Babina, et al. is the reduction in adverse selection. Having thus attained greater data transparency, risky individuals could then be properly screened (Babina et al., 2022). Treating this on a higher plane perspective, this now concerns the data privacy rights of each individual. Although there are regulations already in place, much is still needed to be done in order to properly implement the guidelines.

The study by Wang et al. proposed a framework based on blockchain technology in order to preserve the customer's data rights (Wang et al., 2020). The paper also used Nudge Theory (Thaler & Sunstein, 2009) and algorithms in analyzing the way customers will disclose information. We can see here that technology is also being used for the

proper implementation of innovations based on new technologies. Even with all these measures (implemented or still being planned), there is a study that forecasts the disadvantages that will be placed upon the consumers (He et al., 2020). This is where phased implementation would be most helpful, i.e., revising on lessons learned for each iteration. The unintended harmful effects (should there be) brough by each phase of the implementation, could be immediately identified and isolated thus, having the impact or scope arrested or controlled.

In terms of the driving forces for this Open Banking initiative, Figure 3 shows that implementation approach varies per country and region, depending on culture and the different business environmental factors that has driven Open Banking. As mentioned in the previous figure, some are market or competition-driven, others are regulatory- driven, while others are hybrid. Here in the Philippines, the Bangko Sentral ng Pilipinas (BSP) has adopted a regulatory driven approach through its release of the Open Finance Framework (*Bangko Sentral Ng Pilipinas Regulations - BSP Issuances*, 2021). We have yet to see if the early adopters of Open Banking will prove to be successful. If it will, then a combination of regulatory and market-driven approach would ensue.

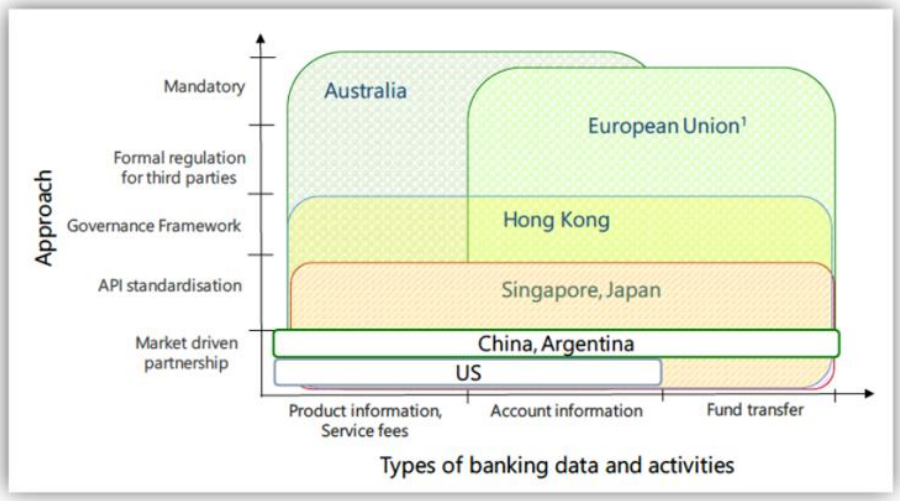

Figure 3 - Approach Across Countries, (*Report on Open Banking and Application Programming Interfaces (APIs)*, 2019)

Figure 4 below is a list of Frameworks, Standards, and Regulations that were implemented across the globe since 2013. We can see that the United Kingdom is the country that pioneered Open Banking, starting with PSD2 (Payment Services Directive 2),

followed by the GDPR (General Data Protection Regulation). And then its Open Banking Standards 3.0 was released last 2018. Other countries followed suit.

Country	Entity	Standards	Date Released
UK	Open Banking Implementation Entity (OBIE)	Open Banking Standards 3.0	2018
		PSD2 (Payment Services Directive 2)	Jul. 24, 2013
		Publication of the FW, EU	Dec. 23, 2015
		GDPR (General Data Protection Regulation)	Apr. 27, 2016
US	Consumer Financial Protection Bureau	Released a set of principles outlining protection measures	Oct. 18, 2017
	Dept of the US Treasury	Report on Nonbank Financials, Fintech, and Innovation	
		Data Protection - depends per state	
Canada	Federal Government	Undergoing a review of Open Banking...	
	Competition Bureau Canada	Expressed support for OB	2017
	Dept of Finance Canada	A New Retail Payments Oversight Framework	2017
		Advisory Committee on Open Banking	Sept. 26, 2018
	Canada 2020 Policy Lab	Open Banking Report on Findings and Resolutions	Jul. 5, 2018
Australia	Federal Treasury	Consumer Data Right	Nov. 26, 2017
	Data Standards Body	Consumer Data Standards v. 1.17.0	2021
Hong Kong	Hongkong Monetary Authority (HMA)	Consultation Paper on Open API FW for the HK Banking Sector	Jan. 11, 2018
Japan	Government	Banking Act - Legislation on Open Banking	2015, 2017
	Federal Services Agency (FSA)	Strategic Development and Management Bureau	2018
Singapore	Monetary Authority of Singapore (MAS)	Encouraging FIs to develop APIs openly	
		Plans to issue guidelines on the ethical use of data	
		Financial Planning Digital Services (FPDS) FW - OB Env	
		API Playbook; APIX - API guidance and collab platform	
India	Reserve Bank of India (RBI)	United Payments Interface (UPI)	2016

Figure 4 – Frameworks, Standards and Regulations

3. Common Methodological Approach, Hypotheses to be Tested

In the area of methodology used so far, the study by Gozman, et al. used a qualitative approach, specifically the coding mechanism (Gozman et al., 2018). With this methodology, they used both "Descriptive Coding" and "Pattern Coding" which resulted in their establishing the categorization of roles in banking. This paper studied organizations involved in the financial value chain (Mastercard, Visa, SWIFT), a bank, and a credit institution. Moreover, the study made by Zachariadis and Ozcan dwelt on 'Transaction Costs Theory' and 'Network Effects' (Zachariadis & Ozcan, 2017). Transaction Costs Theory underpins the decisions of firms whether to 'make or buy' or 'develop or outsource' (Ketokivi & Mahoney, 2017). The Network Effects was appropriately described by Katz and Shapiro, saying "Many products have little or no value in isolation, but generate value when combined with others" (Katz & Shapiro, 1994). And this term is now being broadly applied when pertaining to getting a wider coverage (and therefore value) in terms of usage (*Understanding the Network Effect*, 2021). The authors urged the banks

to not focus on near-term returns but rather, on building first and stabilizing the platform. This approach will yield profits in the long-term and will provide sustainable growth.

On the other hand, the study by O'Leary, advised that for future research aiming at increasing the value of Open Banking, the following theories could be applied: "Affordance Theory, Resource-based View Theory, and Actor-Network Theory" (O'Leary et al., 2021). Lastly, the work by Chan, et al. used the Unified Theory of Adoption and Use of Technology (UTAUT) (Venkatesh et al., 2003) to analyze the factors that results to consumer adoption of Open Banking (Chan et al., 2022). Aside from the usual constructs used in UTAUT studies, the authors added the 'financial literacy' construct. Using this additional construct, it was found out that financial literacy reduces initial trust. It is thus necessary that financial institutions provide sufficient proof that their infrastructure is robust enough to be trusted. The Summary of Literature Review follows.

	Author/s	Title of the Paper	Theme/s	Scope, Theory/Framework	Organization	Key Message
1	Plaitakis, A., & Staschen, S. (2020, October)	Open Banking: How to Design for Financial Inclusion	Financial Inclusion, Open Banking	"1. Broad scope, covering many types of financial services, including credit and insurance (e.g., Australia, Brazil, India, Japan, Malaysia, Mexico, and Singapore). 2. Targeted scope, focused on banking and/or payments (e.g., Bahrain, Hong Kong, the European Union, and the United Kingdom)."	World Bank/Consultative Group to Assist the Poor (CGAP)	The study covered 11 countries along with components relating to scope and implementation. It is thus urging regulatory bodies planning to implement open banking in their jurisdiction to consider and use the 12 components in their planning approach.
2	Omarini, A. E. (2018)	Banks and Fintechs: How to Develop a Digital Open Banking Approach for the Bank's Future	Open Innovation, Banking as a Platform, PSD2, BBVA, Open Banking as threat and opportunity			"Value is created in platforms through economies of scope in production and innovation.This paper has explored the evolution of Fintech and Techfin in the market and the emergence of platform models in banking. It has investigated the evolution of that concept, also introducing an interesting banking case (BBVA), which gives several insights on the choices made toward a Banking-as-a-Platform model within the context of Fintech and Open Banking."

	Author/s	Title of the Paper	Theme/s	Scope, Theory/Framework	Organization	Key Message
3	Wang, H., Ma, S., Dai, H.-N., Imran, M., & Wang, T. (2020)	Blockchain-based data privacy management with Nudge theory in open banking	Open Banking, Data Privacy, Blockchain, Nudge Theory	Nudge Theory, Data Privacy Management Framework		"A data privacy management framework was designed according to the characteristics of banking data. A customer-strategy model of collaborative filtering algorithm and the confirmation of default data disclosure schemes based on the Nudge Theory was proposed. Finally, they implmented a blockchainbased financial data privacy management prototype. The experiments show that the proposed framework meets the reality in banking data privacy management."
4	Babina, T., Buchak, G., & Gornall, W. (2022)	Customer Data Access and Fintech Entry: Early Evidence from Open Banking	OB Policies, OB Strength Index, VC Investment into Fintech startups, Financial Inclusion and Competition	"...49 countries have implemented open banking policies and 31 more are in active discussions. Following adoption, fintech venture capital investment increases by 50%, with more comprehensive policies showing larger effects. We examine the policy tradeoffs with a quantitative model of consumer data production and usage. Our calibrations show that customer-directed data sharing increases entry by improving entrant screening ability and product offerings, but harms some customers and can reduce ex-ante information production."	Social Science Research Network	"The adoption of OB government policies leads incumbent banks to invest in technology to share customer data and spurs VC investment in fintechs. Weaker OB implementations are measurably less effective. The potential implications of OB for academics, policymakers, and industry are large. By giving the customers the ability to share their financial data, OB promises to upend the organization of the financial sector while increasing competition and financial innovation. The welfare effect of this, however, is far from obvious, as our model highlights, which calls for additional research on specific use cases and OB implementations."

5	He, Z., Huang, J., & Zhou, J. (2020)	Open Banking: Credit Market Competition When Borrowers Own the Data	OB, Information Assymetry, Equilibrium	"We study lending market competition when sharing banks' customer data enables better borrower screening or targeting by fintech lenders."	National Bureau of Economic Research	"Open banking could make the entire financial industry better off yet leave all borrowers worse off, even if borrowers could choose whether to share their data. We highlight the importance of equilibrium credit quality inference from borrowers' endogenous sign-up decisions. When data sharing triggers privacy concerns by facilitating exploitative targeted loans, the equilibrium sign-up population can grow with the degree of privacy concerns."
6	Gozman, D., Hedman, J., & Sylvest, K. (2018)	Open Banking: Emergent Roles, Risks & Opportunities	OB, Financializatior	1. "Integrator, Producer, Distributor, Platform" 2. Organizations studied - Credit Agricole, BBVA, Visa, Mastercard, SWIFT 3. Qualitative Research, Coding		"From these interviews, we develop a taxonomy and identify four open banking roles: integrator, producer, distributor, and platform. A further contribution is made by identifying related challenges and opportunities faced by fintechs and incumbents in the shifting landscape of retail banking. The challenges identified include risk of disintermediation, loss of reputation and transformational failure while the opportunities identified include enhanced service innovation and risk mitigation."
7	Zachariadis, M., & Ozcan, P. (2017)	The API Economy and Digital Transformation in Financial Services: The Case of Open Banking	OB, Banking as a Platform	Transaction Costs Theory, Network Effects	SWIFT Institute	"...exposes some of our findings around the key challenges and opportunities that open APIs pose for the banking sector in the UK and the EU following the introduction of the Open Banking Working Group (OBWG) and Second Payments Services Directive (PSD2) regulatory frameworks. Our insights were produced from extensive field research and interviews with key industry experts between July 2016 and February 2017. Our use of theory helps us translate these findings and provide recommendations for financial institutions, FinTech startups, technology companies, and regulators."
8	O'Leary, K., O'Reilly, P., Nagle, T., Filelis-Papadopoulos, C., & Dehghani, M. (2021)	The Sustainable Value of Open Banking: Insights from an Open Data Lens	Open Data lens	1. For future research - Affordance Theory, Actualization, Resource-based View Theory, Actor-Network Theory 2. 17 Regions		"Open Banking is not entirely 'open' compared to other open initiatives, and we discuss how Open Banking may provide sustainable value for consumers, Fintech's, and traditional banks."

	Author/s	Title of the Paper	Theme/s	Scope, Theory/Framework	Organization	Key Message
9	Chan, R., Troshani, I., Rao Hill, S., & Hoffmann, A. (2022)	Towards an understanding of consumers' FinTech adoption: The case of Open Banking	OB, Financial Literacy, Innovation Adoption, Trust, Perceived Risk	"This study aims to identify key factors driving consumers' adoption of Open Banking. It extends the Unified Theory of Acceptance and Use of Technology (UTAUT) by integrating perceived risk, initial trust and financial literacy into an overarching conceptual model."		"The model has strong explanatory power with an R2 of 69.5%. Performance expectancy, effort expectancy, social influence and perceived risk are direct antecedents of consumers' usage intention of Open Banking. Social influence has a strong mediating effect on usage intention through performance expectancy. The effect of perceived risk is alleviated by effort expectancy and initial trust, while initial trust positively affects the effects of performance expectancy and effort expectancy on consumers' usage intention of Open Banking. Finally, financial literacy lowers initial trust towards Open Banking, possibly inducing consumer skepticism."

Below is **Table 2. Synthesis of Extant Literature**, which summarizes the themes (issues) and their corresponding theories/frameworks (solutions).

Themes (Issues)	Framework/Theory (Solution)
Data Privacy	Blockchain Technology
Disclosure Preferences of Consumers	Nudge Theory
Adverse Selection Information Asymmetry	Transparency
Return on Investment (ROI)	Transaction Costs Theory Network Effects
Consumer Adoption	Unified Theory of Adoption and Use of Technology (UTAUT)

Table 2. Synthesis of Extant Literature

4. Theoretical Framework

The Expectations-Confirmation Theory (ECT) by Richard Oliver shall be used for this study (Oliver, 1980). An additional construct, Customer-Centric Design, shall be added as an extension. Banks usually do not have the process and structures in place to listen to their customers, so this still remains a challenge (Guibaud, 2016). The Open Banking Standard of the United Kingdom have included "Customer Experience Guidelines" as one of its major requirements, recognizing the criticality of this component (*Open Banking Documentation | API Specifications, Guidelines and Documentation*, 2022).

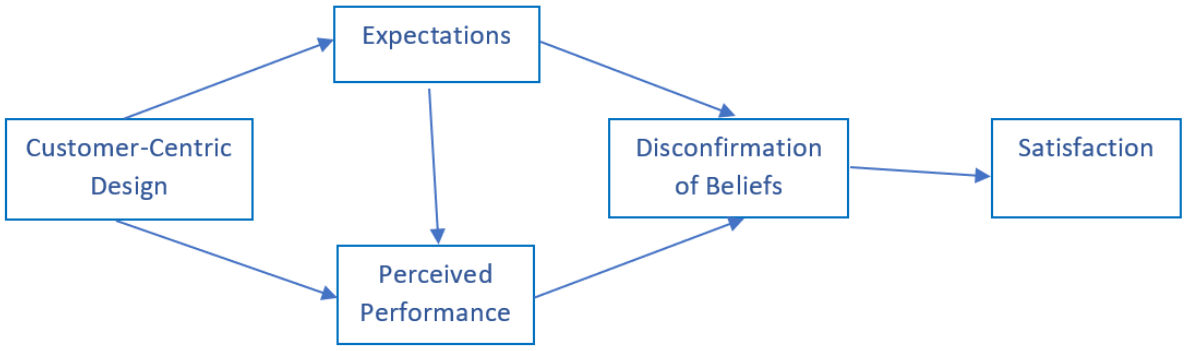

Figure 5. Expectation-Confirmation Theory (ECT), (Oliver, 1980)

In ECT, Nudge Theory shall be incorporated. Nudge Theory is a "concept that proposes positive reinforcement and indirect suggestions as ways to influence the behavior and decision-making of groups or individuals" ("Nudge Theory," 2022). Prospective customers should be positively nudged towards the adoption of Open Banking. ECT "…posits that satisfaction is determined by the interplay of prior expectations and perception of delivery." (Hossain & Quaddus, 2012). The success of the implementation of Open Banking in the Philippines will largely depend on how consumers will adopt to this new technology and process. Customer-centricity is already being advocated by the BSP (Villanueva, 2021). Customer expectation though vary by country but still, general expectations such as ease of use, tailored products, and empathy are the same across the globe (*Accelerating Digital Transformation in Banking*, 2018). Experiences of Early Adopters have already shown weak consumer adoption that's why it's just proper for the institutions to adopt a phased implementation approach, i.e., if the Philippines would want to reap the goals of financial inclusion and economic growth.

On the regulatory side, the release of the BSP of the Open Finance Framework last June 2021 signals that the Philippines belongs to the 'Early Majority' group. This pertains only to planning though, as we have yet to see how this will be implemented in the coming years. Being in the Early Majority group, financial institutions in the Philippines should already learn from the experiences of the Early Adopters. Being at this stage of the innovation cycle still poses risks since not much have been done so far by the Early Adopters in terms of execution, as well as in the area of consumer adoption. Being at the early stage, while fraught with risks, promises benefits that would have otherwise been forsaken if a bank will adopt later. Table 3. Status of Open Banking in the Philippines, shows the current status of Open Banking in the Philippines.

Regulation	**Institution**	**Date**
Digital Payments Transformation Roadmap 2020-23	Bangko Sentral ng Pilipinas (BSP)	Oct 2020
Open Finance Framework	BSP, Circular 1122	June 2021
Data Privacy Act	Republic Act 10173	2012
Bank	**Partnership**	**Date**
Union Bank of the Philippines	Brankas	May 2020
Eastwest Bank thru Komo	Brankas	May 2021

Table 3. Status of Open Banking in the Philippines

Below is the tiered-implementation approach of the Open Finance Framework proposed by the BSP.

Tier 1 – Product and Service Information
Tier 2 – Subscription and New Account Applications
Tier 3 – Account Information
Tier 4 – Transactions
Tier 5 – Others (e.g. Investments)

5. Methodology

A mix of both quantitative and qualitative research methodologies have shown up in the conducted literature review. This research will be tackling both the measurable aspects as well as the intangible aspects of the use of Open Banking. Thus, the decision to use a hybrid methodology was arrived at.

Qualitative Approach

Descriptive Coding shall be used. This "is a first cycle method of coding that involves reading through qualitative data, and coding passages according to topic" (*How To Do Descriptive Coding*, 2022). Another sub-approach used is Pattern Coding. It "is a way of grouping summaries into a smaller number of sets, themes, or constructs" (*A Guide to Coding Qualitative Data – Dr Salma Patel*, 2014).

Quantitative Approach

Tool and Metrics

A set of survey questionnaires based on ECT (Expectation Confirmation Theory), with the identified extension, Customer-centric Design, shall be logged in Google Forms and then distributed to target participants. These participants are Consumers, as well as Bank Management. And in compliance with the Data Privacy Act of 2012, the participants' personally identifiable information shall be anonymized. Statistical measures shall be gathered and validated according to standard thresholds, using the SmartPLS v3 statistical tool. Data reliability shall be tested using *Cronbach's Alpha (α)* and *Composite Reliability (CR)*, while validity shall be confirmed using the *Average Variance Extracted (AVE)*. And to further test the discriminant validity, the *Function Cross Loadings* shall be used.

The functionality of Bootstrapping in SmartPLS v3 shall be used to compute for *path coefficients.* The P Value and T Stat of the resulting path coefficients shall determine if a construct significantly affects another.

Participants

The participants in this study are the Underbanked and Underserved expected users of Open Banking (e.g., Micro, Small, and Medium Enterprise owners), and those employed in the banking industry. They are based in Metro Manila, Philippines.

Research Instruments

A 5-Point Likert Scale Survey to gather the participants' degree of agreement or disagreement in relation to the questions being asked shall be used. I.e., from 'Strongly Disagree' to 'Strongly Agree'. Some use statements will be added in order to gather information on the frequency of usage of each open banking use case that will be indicated in the survey. This shall provide more detail regarding customers' preferences and habits.

Data Analysis

This study aimed at analyzing the correlation of additional construct *Customer Centric Design* in influencing the customers in their Expectations and Perceived Performance in the use of Open Banking. This additional construct was also referenced from the various studies gathered from the literature review.

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