

Voluntary insurance for rapid growth digital banking: Seeking attentions for policy-design in Pakistan-economy

Rahman Akim M.^{1,2,3}, Lavina Maureen Zaman^{1,2,3}

1 Social and Economic Research Institute (SERI) (Bangladesh) **2** Sheikh Hasina University of Science and Technology (SHUST) (Bangladesh) **3** The Ohio State University (United States of America)

Corresponding author: Rahman Akim M. (akim_rahman@hotmail.com)

Academic editor: M. Sheresheva | Received 26 February 2024 | Accepted 1 March 2024 | Published 5 April 2024

Citation: Rahman, Akim M., & Lavina Maureen Zaman (2024). Voluntary insurance for rapid growth digital banking: Seeking attentions for policy-design in Pakistan-economy. In: Sheresheva M, Lissovolik YD (Eds) Changing the Global Monetary and Financial Architecture: The Role of BRICS-Plus. *BRICS Journal of Economics*, 5(1), 35–52. <https://doi.org/10.3897/brics-econ.5.e121606>

Abstract

In today's business-driven world, e-banking service is an important product in financial sectors of many countries and Pakistan is no exception. Many affect the delivery of these services, often unpredictable, factors and are fraught with serious pitfalls including those of psychological nature. The Voluntary Insurance scheme can help the country overcome existing difficulties and move closer to a cashless society, contributing to the growth of the banking sector and safety of the e-banking operations in Pakistan. The new e-banking legal products are expected to gratify consumers, make the banks stronger, and contribute to the overall social development; the proposed Voluntary Insurance is to guarantee their success. The Welfare Analyses have been used for setting the VI prices so that the customers' efficiency-cost balance could become appealing. Once the policymakers and policy practitioners of Pakistan recognize the importance of the proposed VI product and make the necessary arrangements for its use in the e-banking services market, it may spread from bankers to their customers and thus over the whole economy. The process of life cycle of the VI product will follow the "S-curve" in progression. These developments will become drivers of economic growth and e-services will eventually replace traditional banking.

Keywords

Bank-led e-banking Service-market, Perceived-risk factors, Voluntary Insurance, Cashless Society.

Аннотация

В сегодняшнем мире, ориентированном на бизнес, услуги электронного банкинга являются важным продуктом в финансовых секторах многих стран, и Пакистан не является исключением. На предоставление этих услуг влияет множество зачастую непредсказуемых факторов, и оно чревато серьезными проблемами, в том числе психологического характера. Схема добровольного страхования может помочь стране преодолеть существующие трудности и приблизиться к безналичному обществу, способствуя росту банковского сектора и безопасности операций электронного банкинга в Пакистане. Ожидается, что новые легальные продукты электронного банкинга удовлетворят потребителей, сделают банки сильнее и внесут вклад в общее социальное развитие; предлагаемое добровольное страхование призвано гарантировать их успех. Анализ благосостояния использовался для установления цен на добровольное страхование, чтобы баланс эффективности и затрат стал привлекательным для клиентов. Как только политики Пакистана признают важность предлагаемого продукта и примут необходимые меры для его использования на рынке услуг электронного банкинга, он может распространиться от банкиров к их клиентам и, таким образом, далее на всю экономику. Процесс жизненного цикла продукта ДС будет следовать «S-образной кривой». Его развитие станет драйвером экономического роста, и электронные услуги в конечном итоге заменят традиционные банковские услуги.

Ключевые слова

Рынок электронных банковских услуг, воспринимаемые факторы риска, добровольное страхование, общество без наличных денег.

JEL: Q23, F13, F15.

Introduction

In today's digitized world, services are provided in many ways. The markets are competitive and so players have to be rational, taking account of numerous factors that are often unpredictable. Digital banking is an important product in today's financial sector, but it is fraught with serious pitfalls including those of a psychological nature. Customers here compete for time-saving options, while banks seek to drastically reduce their operating costs and thus enhance their revenues. It has been noticed that in most cases, customers do not read the terms and conditions of their contracts with banks; they do not keep contract copies and seldom remember exactly the numbers of banking transactions or the amount of each particular transaction in their accounts. These weaknesses may cause abuses as customers face perceived risk factors such as hidden charges, *extra fees*, account hacking.

To tackle these issues, *Voluntary Insurance* as a new digital banking product was proposed by the author of this publication (Rahman, 2018a). It offers guidance to bank managers and policymakers of the Pakistan economy on designing effective policies for providing risk-free digital-banking services that will accelerate the transition to cashless society. It will fully reshape today's financial sector of the country, enabling people to use only digital-payment options for all kinds of monetary transactions in their daily activities.

Why is Pakistani economy?

The State Bank of Pakistan (SBP) has conclusively proved its commitment to advancing the digitalization of the national economy and finance: it has designed regulatory framework necessary for setting up digital banks and started issuing licenses to these banks as a separate and distinct category in the banking business. The SBP's ongoing effort aims to a) promote financial inclusion, b) provide access to credit for the unserved and underserved, c) offer affordable and cost efficient digital financial services, d) encourage the use of financial technology and innovation in banking, e) foster new types of customer experience, and f) develop a digital eco-system. These approaches have been actively pursued since the beginning of the COVID-19 global pandemic.

Pakistan has long been struggling to supply an affordable and user-friendly banking service to its huge population of 220 million (Cheng *et al.*, 2014; Robinson, 2020). From simply opening a bank account to conducting day-to-day financial transactions, dealing with the banking sector in Pakistan is as painstaking as it can be (Chen, 2013; Robinson, 2020).

The Central bank, commercial banks, microfinance banks and growing Fintech companies are trying hard to ease the woes of the customers by improving the access to financial services, but they still have difficulty unlocking the untapped potential of digital transformation in the country: not a single traditional domestic bank has developed an end-to-end digital operation yet.

Pakistan is home to more than 50 per cent of the world's unbanked population, also reflected in the Global Findex 2021 – Pakistan's financial inclusion rate was still stagnating at 21% between 2017 and 2021, lagging far behind regionally and globally (FinTech Futures, 2023; Robinson, 2020; Kuisma *et al.*, 2007). The 2021-2022 fiscal year has seen a massive increase in the size of the digital payments ecosystem, according to the SBP Annual Payment Systems Review for 2021-22, which says that mobile phone banking increased by 100.4% to 387.5 million, while internet banking grew by 51.7% to 141.7 million during the year (Shahid & Hassan, 2022; Covergenius.com, 2022).

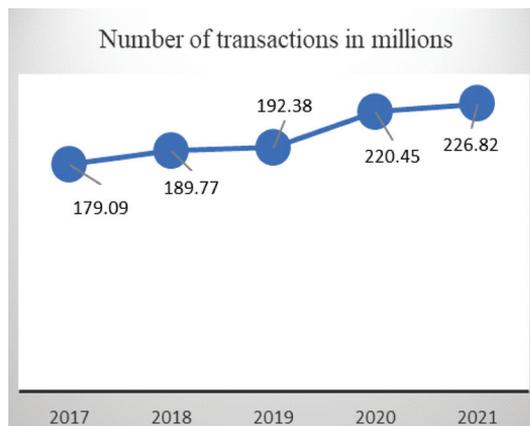


Figure I. Trends of digital transactions in Pakistan. Source: Author's creation

Because of slow innovation by banks & fintech companies in emerging markets, the use of e-banking services in Pakistan has been growing slowly. Most users are young and urbanized. But many people are yet to have access to banking services (Cook, 2023). We can expect greater rate of smartphone penetration in lifestyle of Pakistan. As reported by the International Finance (Cook, 2023), Pakistan is currently solving the issue of e-banking progression slowly but steadily and adding the VI as a new product of e-banking that can contribute to Pakistan's transition to cashless society and make its economy shinier.

Cash transactions are still prevalent and so the ATM network in Pakistan must be strong to cater for the needs of the population. The ATMs network in the country also grew by 4.8% during 2021 reaching 17,133 ATMs (Shahid, 2022; Cheng, 2014). A total of 692.3 million transactions were conducted through ATMs which amounted to Rs 9.6 trillion, 19.2% higher than FY21. Meanwhile, cash withdrawals from ATMs picked up from 577.3 million in volume and Rs7.29 trillion in value in 2020-21, to 670.6 million in volume and Rs8.6 trillion in value. That is a growth of 16.1% in volume and 18% in value over the previous year.

According to the SBP's annual report (State Bank of Pakistan, 2020) the four fully licensed EMIs (electronic money institution), namely Sadapay, Nayapay, Finja and CMPECC, together had 262,558 total active accounts and 514,961 payment cards issued to their customers. Last year's numbers on EMIs were not available for comparison. The SBP has in the past often emphasized that potential fintech can boost digital payments and financial inclusion.

The SBP recently pointed out that, while fintech had enhanced competition, it had also provided the sector with an opportunity to create synergies and mutually beneficial partnerships. Banks and Fintech can form partnerships to supply customers with innovative products that are not practical to produce for standalone entities. Such partnerships can help banks with penetration into the untapped segments like retail business and Micro, Small and Medium Enterprises, yielding beneficial outcomes for all stakeholders (Shahid & Hassan, 2022).

To encourage banks that are yet to undertake consistent and sustained moves toward technological transformation, the SBP asked them to make use of the digital bank frameworks and the instant payment system, RAAST, to position themselves for the future (Shahid & Hassan, 2022; Cruz *et al.* 2010).

What is *voluntary insurance*? How should it work in e-banking services?

Introduction of *Voluntary Insurance* (VI) as a product of digital banking can contribute significantly to dealing with the issues that undermine today's development of digital banking in Pakistan economy (Rahman, 2018b; Rahman, 2020a) as it will allow a bank or third-party to offer secure services and collect insurance premium.

Customers' participation is to be voluntary. Insurance will be attached to a customer's account if the customer wants it to make the digital-banking services

safer. Since the VI program is designed as a way of transferring the risk away from the premium-payers, it will give them a sense of certainty. At the same time, the premium-receivers will take *extra* measures for ensuring the safety of risk-free digital-banking services. For example, ATM Card or Credit Cards can be protected by setting up two identifications such as a password and a finger-scan. To use the ATM card when accessing his account, the customer will have to provide two identifications, namely a password of his own setup and previously chosen finger-scan of his thumb or the forefinger. Scans of the finger in addition to password when working with the ATM which will enhance the safety of digital banking operations. To overcome the risk of *heist* or hacker's access to bank accounts, similar customer-set identifications can be used. In global banking operations, e.g. remittances, the program also can ensure risk-free digital banking services. Since the psychological factor of perceived risks related to operations undermines digital-banking advancement in Pakistan's economy, adding the VI product can boost the development of digital banking by considerably mitigating such risks.

Theoretical justification of policy option: VI as a new product in e-banking services

It is clear now that the perceived risk factor plays a significant role in setting the stage for the proposed VI Option in digital-banking services. The assumption is that e-banking customers are risk-averse, i.e., they prefer certainty to uncertainty when it comes to banking. Figure 1 illustrates the risk preferences of a risk-averse banking-customer.

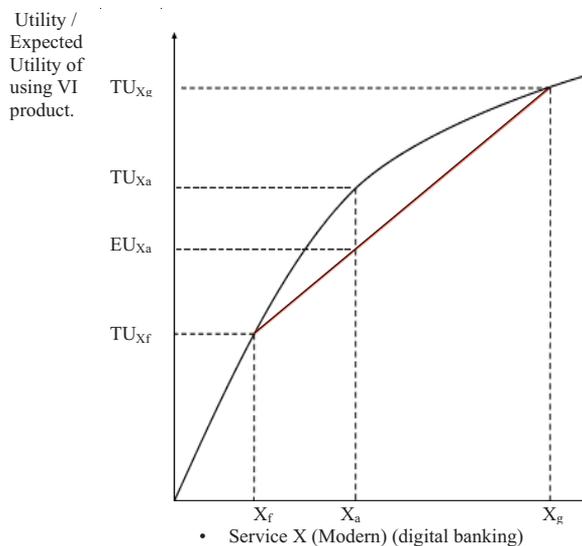


Figure 2. Risk aversion scenario in digital banking services in the economy of Pakistan. *Source:* created by the author.

In a world of uncertainty, a customer's actual utility that she or he receives from digital-banking services will never fall on the TU (X) but rather on the chord (the bold line). X_g stands for a service outcome in which customer may use a certain level of service X while X_f stands for a negative outcome in which customer may use less of service X . If it is not certain that the customer will not use X_g units of service X , the utility that this customer receives will lie somewhere on the chord (the bold line). The chord shows the expected utility (EU) of using service X , which lies in the concavity of the curve because it represents the average probability that the customer will use service X or not. As a result, an individual will never receive TU (X_a) but rather EU (X_a). This proposed model in the e-banking service market is also known as Akim's Model (Rahman, 2018c; Rahman, 2020b).

Application of Akim's model in bank-led e-banking services in Pakistan-economy: The outcome under welfare analysis

To examine the benefits of banks that adopt VI in Pakistan's economy, this section is designed as follows:

It is important for banks to get full information about the economic benefits of adopting VI in e-banking services and even more so for their customers as the insurance premium will go out of the customers' pockets. In return, they get secured digital transactions because VI eliminates all risks, including perceived risk factors, making customers risk-free. Since the money goes out of their pocket, the risk-averse individuals may not choose to buy the insurance. There still are people who do not use even traditional banking because of bank-account fees or charges, no matter where they live on the globe, but they do not constitute a majority and the research is not related to their choices.

The theoretical framework for calculating the effective cost or price of the VI in Pakistan's economy is as follows:

Model

Setup & notation

First, we consider a situation in which customers of digital banking are faced with two choices. They can either sign up for an insurance contract or not sign up for it if it involves high coverage (say contract H) that ensures risk-free digital banking. Not signing up for insurance means no coverage (contract L) but even so the contract facilitates e-banking services. The second option is currently more popular in Pakistan-economy.

The study assumes that contract L is no insurance, but customers get assistance in free access to e-banking. Contract H offers full insurance and makes the use of risk-

free e-banking services much easier. Both options allow customers to relax once the VI product is in place while the bank manages the insurance just like it manages customer accounts' supporting fees.

Another important assumption is that the characteristics of the contracts including the size of insurance premium are to be decided endogenously. It is a feature of insurance markets that have variation only in pricing of the contracts and not in the offered coverage. This analysis is therefore in the spirit of Akerlof (Akerlof, 1970; Mitchell, 1999; Florea, 2014) rather than Rothschild and Stiglitz (Rothschild & Stiglitz, 1976; Forest 2023) for whom it is the level of coverage that is decided endogenously.

Demand for insurance as a product

This study assumes that each customer of a digital bank makes a discrete choice of whether to buy insurance or not. Since we take as given that there are only two available contracts for e-banking services, the coverage-associated demand is a function of the relative price "p." We assume that banks cannot offer different prices to different customers to the extent in which prices depend on observed characteristics. We assume that if customers choose to buy insurance, they buy it at the lowest price at which it is available. So, it is sufficient to characterize demand for insurance as a function of the lowest premium i.e., price "p." Mathematically, $D = f(p)$ where D = demand for insurance and p = premium amount or price for insurance services. As with most digital services, the price or premium will be small in any economy.

Supply and equilibrium

Our next assumption is that there are $N \geq 2$ identical risk neutral insurance service-providers or banks in e-banking cases that set prices in a Nash Equilibrium. There might be both imperfect and perfect competition in VI-product market. But we choose to focus on the case of perfect competition as it stands for a natural benchmark for welfare analysis of the efficiency cost of selection.

We further assume that when multiple banks set the same price, individuals who decide to buy insurance at this price make a random choice of a bank. We assume that the only costs of supplying contract H to individuals "I" are insurable total cost is TC. Here average cost (AC) curve is decided by the costs of the sample of individuals choosing contract H. Symbolically, $AC = TC / I$ where AC decreases as I increases, I signify the number of customers).

To characterize the equilibrium, we make two further assumptions. First, we assume that there exists a price \bar{p} such that $D(\bar{p}) > 0$ and $MC(p) < p$ for every $p > \bar{p}$. In other words, we assume that it is profitable and efficient to provide insurance to those with the highest willingness to pay for it. Secondly, we assume that if there exists \bar{p} such that $MC(\bar{p}) > \bar{p}$ then $MC(p) > p$ for all $p < \bar{p}$, i.e., $MC(p)$ crosses the demand curve not more than once. It is easy to see that these assumptions guarantee the existence

and uniqueness of equilibrium. In particular, the equilibrium is characterized by the lowest break-even price $P^* = AC(P)$.

Measuring welfare

We measure consumer surplus (CS) by the certainty equivalent. The certainty equivalent of an uncertain outcome is the amount at which it does not make any difference for the individual whether he obtains this amount for sure or obtains the uncertain amount. An outcome with a higher certainty equivalent thus supplies higher utility to the individual. This welfare measure is attractive as it can use monetary units. Total surplus (TS) in the market is the sum of certainty equivalents for consumers and profits of the firm or bank that supplied insurance. Throughout this analysis, we ignore any income effects associated with price changes.

Graphical representation

With the framework described above, it is possible to make a graphical representation of adverse choice or adverse selection and advantageous selection:

This representation can be helpful for understanding the efficiency costs or prices of each type of selection of the insurance for promoting risk-free digital banking in the economy of Pakistan.

Adverse-selection cases

In Fig 5, y-axis stands for price or cost of contract H and x-axis stands for quantity i.e., share of individuals in the market with contracts H where maximum quantity is Q_{max} . The demand curve denotes demand for contract H. Similarly, the average cost (AC) curve and marginal cost (MC) curve denote average and marginal incremental costs to the insurer from coverage with contract H compared to contract L.

The key feature of adverse selection is that individuals who have the highest willingness to pay for insurance are those who, on average, have the highest expected costs. It is shown in Fig 3 by drawing a downward sloping MC curve that says MC is increasing in price and decreasing in quantity i.e., in the number of individuals. As the price falls, the marginal individuals who select contract H have lower expected cost than infra-marginal individuals and this leads to lower average costs.

The essence of the confidential information problem is that the bank cannot charge individuals based on its privately known MC. Banks are instead restricted in their ability to charge a uniform price, which in equilibrium implies average cost pricing. Since average costs are always higher than marginal costs, adverse selection creates underinsurance, a familiar result first pointed out by Akerlof in 1970 (Featherman, 2003; Hsiao & Chang, 2014). This underinsurance is shown in Fig 3. The equilibrium percentages of individuals who buy contract H is Q_{eqm} (AC curve intersects DD curve

at point C). So, the efficient number is ($Q_{eff} > Q_{eqm}$); this is because the MC curve intersects DD curve.

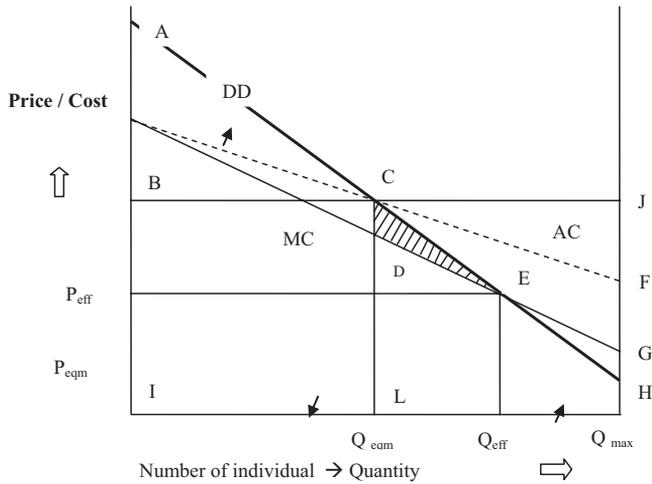


Figure 3. Efficiency cost of adverse choice under VI Policy. *Source:* Author’s creation.

In Fig 3, the shaded area ΔCDE shows the welfare loss caused by adverse choice. This is a loss of consumer surplus by individuals who are not insured in equilibrium because their willingness to pay is less than the average cost of the insured population. But it would be efficient for them to insure because their willingness to pay exceeds their marginal cost.

To evaluate and compare welfare under a different scenario, we suppose that customers are required to sign up for contract H. It would generate welfare equaling $\Delta ABE - \Delta EGH$. This can be compared to welfare at competitive equilibrium $\Delta ABCD$. In this scenario, welfare at efficient allocation is ΔABE or welfare from mandating everyone to sign up to contract L (normalized to zero), using subsidies or taxing the equilibrium price.

Advantageous selection cases

The first theory of selection in insurance markets emphasized the possibility of adverse selection, and the resulting efficiency loss from underinsurance (Akerlof, 1970; Murray & Schlacter, 1990; Rothschild & Stiglitz, 1976; Knaack & Gruin, 2017). Consistent with this theory, several empirical analyses suggest that in some insurance markets, such as the health market, the insured have higher average costs than uninsured (de Meza et al, 2001). However, in the live insurance market, there exists “advantageous selection” (Rahman, 2020b).

Those with more insurance have lower average costs than those with less or no insurance. Cutler, Finkelstein, and McGarry in 2008 reviewed the evidence of adverse-

choice and advantageous selection in different insurance markets (Lin, 2011; Robinson, 2020).

In this study, the graphical presentation in Fig 3, makes it easy to describe the nature and consequences of advantageous selection. Here in contrast to adverse choice with advantageous selection, individuals who value insurance the most are those who have, on average, the least expected costs. This translates into upward sloping MC and AC curves (Fig 3). Here market inefficiency is observed because i) consumers may have different marginal costs, ii) banks are restricted in charging uniform prices, and iii) equilibrium price is based on average cost.

However, with advantageous selection, the resulting market failure is one of over insurance rather than underinsurance (i.e., $Q_{eff} < Q_{eqm}$ in Fig 4), as pointed out by many authors in their study (Littler & Melanthiou, 2006; Lee, 2009).

Generally, insurance providers have an added incentive to reduce price, as the infra-marginal customers whom they get as a result are good risks. The resulting welfare loss is represented by the shaded area ΔCDE . It occurs because of the excessive MC willingness to pay for individuals whose willingness to pay exceeds the average costs of the insured population. In Fig 4, welfare can also be evaluated in other situations, i.e. i) mandating contract H ($\Delta ABE - \Delta EGH$) ii) mandating contract L (normalized to zero) and iii) competitive equilibrium ($\Delta ABE - \Delta CDE$) and efficient allocation (ΔABE).

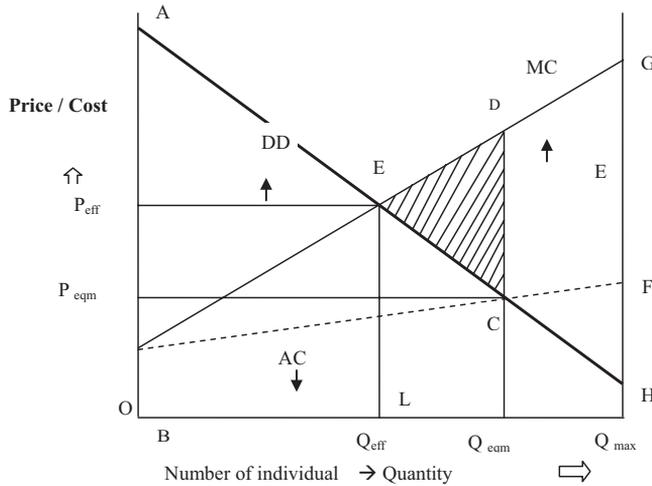


Figure 4. Efficiency cost of advantageous choice under VI Policy. *Source:* created by the author.

Graphical presentation summary and future study direction:

Analyses related to Fig 3 & Fig 4 illustrate that the demand and cost curves give sufficient information for welfare analysis of equilibrium and non-equilibrium pricing of existing contracts. In other words, cases of different preferences and confidential information can have the same welfare implications if they generate similar demand and cost curves.

Estimating welfare

Once again, in the bank-service Contract Form, a customer has options to choose the insurance (H) or not to choose the insurance (L). In the second case, the bank itself is an insurance service provider to its customers who make the choice. The bank deducts the amount from the customer's account. If a customer does not have an account with the bank but chooses insurance, the customer will bear the insurance cost of the transaction.

Within the preferred arrangements and our framework, the estimation of welfare in an insurance market requires data about the demand curve $D(p)$ and the average cost curve $AC(p)$. The marginal cost curve can be directly backed out from these two curves and does not require further estimation.

To see this, note that $MC(p) = (dTC(p))/(dD(p)) = (d(AC(p) \cdot D(p)))/(dD(p)) = ((dD(p))/d(p)) - 1 * (dAC(p) * D(p))/(d(p))$.

With these three curves— $D(p)$, $AC(p)$, and $MC(p)$ —in hand, we can easily compute welfare under various allocations, as shown in Fig 3 and Fig 4.

We know that estimating demand curve requires data on prices and quantities (i.e., coverage choices) as well as identification of price variation that can be used tracing out the demand curve. This price variation must be exogenous to unobservable demand characteristics. To estimate the $AC(p)$ curve, we need, in addition, data on the expected costs of those with contract H, such as data on next risk realization and how it translates to insurer costs. With such data we can then use the same variation in prices to trace out the $AC(p)$ curve. Because expected cost is likely to affect demand, any price variation that is exogenous to demand is also exogenous to the insurable cost, so we do not need a separate source of variation.

With sufficient price variation, no functional form assumptions are needed for the prices to trace out the demand and average cost curves. For example, if the main objective is to estimate the efficiency cost of inefficient pricing arising from selection, then price variation that spans the range between the market equilibrium price (point C in Fig 3 and Fig 4) and the efficient price (point E) allows us to estimate the welfare cost of the inefficient pricing associated with selection (area ΔCDE) without making any restrictions on the shape of the demand or average cost curves. With pricing variation that does not span these points, the area ΔCDE can still be estimated, but it will require some extrapolations based on functional form assumptions.

Prospects of the VI in Pakistan-economy

Once policy practitioners of Pakistan's economy recognize the importance of the proposed VI product and introduce legislative provisions authorizing the VI as a new product it may become popular with bankers and their customers. The process of life cycle of the VI product can be described using the "S-curve."

Lifecycle of the VI product in Pakistan-economy

As is shown in Fig 5, at the early stage of VI use, the rate of its growth will be slow as the new product is establishing its position. At some point, however, customers will begin to embrace the VI product and we will see a rapidly growing trend towards its use. The product will certainly undergo incremental changes, and these will contribute to the continued growth in its popularity. Toward the end of its life cycle, the growth will slow down and may even begin to decline. In the later stages, no amount of new investment in the product will yield a normal rate of return (Knanck, 2017; Akerlof, 1970). By that time, however, Pakistan will have a well-developed and safe e-banking sector owing to the activity of its bankers who will introduce this new product. It will facilitate and accelerate the transition to a Cashless Pakistani society.

The new type of banking can be expected to replace traditional banking and continue to drive industry growth. The VI is likely to have its product life cycle consisting of i) initial phase, ii) rapid increase in revenue and iii) eventual decline. Although it will never get off the bottom of the curve and will never produce normal returns, it will play a vital role in building a secure system of bank-led e-banking services in Pakistan-economy.

How can the VI product appeal to actual and potential consumers of the e-banking services?

The rate of using e-banking-services along with VI product depends on many factors. The efforts of the providers of the VI product in the e-banking service market can be multifaceted, as shown below:

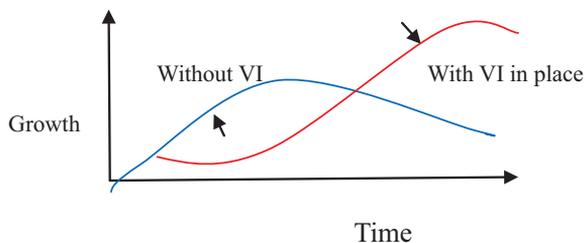


Figure 5. S-curve of the growth of revenue over time. *Source:* created by the author.

- a) perceived benefits of signing up for an e-banking account with VI product.
- b) efforts to promote the VI product benefits.
- c) price or cost of the VI product in the market for e-banking services.
- d) offering rebates on a certain number of transactions of e-banking in a week or month.
- e) efforts of the bank or VI providers to promote risk-free e-banking services.

f) promotional messages to actual and potential customers in the e-banking service market.

Goal of the current effort: how can it be instrumental in today's e-banking market?

This paper aims to bring the issue under consideration to the attention of bank-management, policymakers, and policy practitioners so that the proposed new product could find its place among the digital banking services in Pakistan-economy. This raises the following questions: in what way or ways can this VI product benefit the banking sector and human society? Why is it important? Why now?

Answering these questions, it is reasonable to assert that transferring risk away from customers will directly help both private commercial banks (PCBs) and their clients. It could further attract new customers who were about to use digital banking but still felt it was risky. The model can make the decision easier as customers will be provided with incentives to increase their use of digital banking services while securing the best utility.

Any new product, *certainly* a legal one, is the lifeblood of business, companies, and societies as it can generate new value for customers, improve society, and secure the existence of the company in a competitive market.

How can the VI policy contribute to e-banking further development in Pakistan?

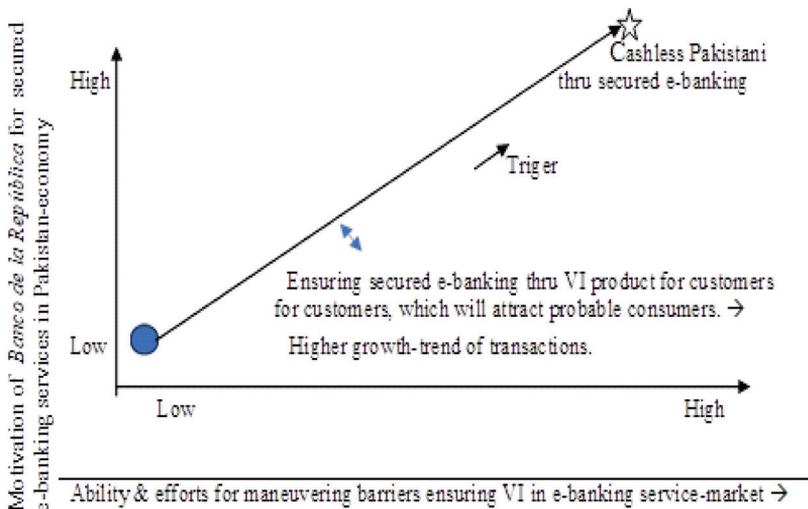


Figure 6. Motivational ability / efforts in VI policy adoption for the benefit of Pakistani society.
Source: Created by the author.

With the win-win prospect for producers and users of the VI product in the bank-led market for e-banking services and for the economy, the VI product can provide significant support for today's slowing economy. To sail through tough competition and to sustain revenues, the State Bank of Pakistan can engage more than earlier in encouraging banks to adopt the VI product as it can help provide risk-free digital-banking services. Yet, it has so far failed to reach out to the bulk of prospective customers in Pakistan.

Under the VI policy, since digital banking can be operated effectively with a smaller workforce, reducing yearly bank account fees will be reasonable. Alternatively, digital banks may offer rebate for increased number of transactions. There should be a note attached to customer's account indicating where banks will be able to recover the cost incurred while running the proposed incentive program. The psychological engagement arising while using risk-free digital banking can contribute to the increase in user numbers by improving customer satisfaction, customer-based banks' benefits including the reduction of operational costs. It can ensure that Pakistanis will soon have Cashless society, which may inspire other countries to follow in Pakistan's footsteps on this journey.

Since the State Bank of Pakistan is a Constitutionally privileged institution, its motivation and efforts are vital in adopting the VI policy in e-banking service-market of the country. As it enjoys administrative and technical autonomy, the State Bank of Pakistan can stand by its commitment made during the COVID-19 crisis to accelerate the digitalization of the national economy and its financial sector by expanding the banking services market of Pakistan's economy and its participant numbers thus contributing significantly to the growth of the e-banking sector.

Figure 6 clearly shows that the State Bank of Pakistan's motivation and supportive efforts are to speed up the transition to Cashless Pakistan society.

The final question is: how soon can it be achieved?

The answer to the question posed is closely related to motivation and supportive efforts that are essential in getting things done.

Motivation and supportive efforts in getting things done: Theory of achievement

In general, people who get things done typically have the motivation, initiative, and perseverance to achieve their goals; policymakers' approaches are not different. Here motivation means the internal or external factors that start, sustain, and direct our actions, thoughts, and behaviors. It drives human behavior, guiding individuals toward their goals, aspirations, and desires. It makes the individual self-disciplined to stay focused on his or her tasks, develop strategies for success, and complete them in a prompt and functional manner (Skinner, 1938). Concerning the theory of achievement, McClelland *et al.* (McClelland *et al.* 1953) emphasized the following two types of motivation: first, motivation to succeed in effective policy design

or implementation and, second, motivation to avoid failure when designing or implementing policies for the benefit of the society.

From an economic point of view, the drive or motivation for efforts can be a multiplicative function of three factors: a) the motive (succeed or avoid failure) of designing effective policies; b) the probability of success implementing policies; c) the worthiness or value of having successful policies (Skinner, 1938; Rahman, 2023).

Together, this shows that motivation depends on the frequency of successful outcomes. It is also reasonable to say that the concept of intermediate challenge as the best incentive can be quantified into an inverted-U relationship between motivation and success frequency where it first decreases and then increases, or vice versa.

Underpinning the theme of today's business-driven world, the theory of achievement through approaches can be formulated as follows:

Achievement of effective policy design or implementation = f (motivation, ability, and efforts in getting things done) and

The value of achievement is inversely related to the probability of achievement i.e. (value of achievement) $\propto 1 /$ (probability of achievement).

In other words, the value of success decreases with a higher probability of achievement. Here

motivation = f (motive to succeed and probability of success) where

(motive to be) = f (motive to succeed, motive to avoid cost of failure, e.g. losing reelection) and

(probability of success) = f (value of success and ability for efforts) and

(ability for efforts) = f (having multifaceted skill including use of psychological behaviors, offering incentives etc.).

This model of Success or Achievement is named after Akim's theory of success or achievement.

In today's business-oriented world, achieving any goal requires the ability to persist through obstacles and endurance to keep going despite difficulties; the political arena is no exception. Hence the goal of having Cashless Pakistani society requires policymakers' motivation and supportive efforts aimed at implementing effective policies such as the VI product in the e-banking services market. The VI can ensure risk-free e-banking, which can lead to the expansion of self-service banking activities in any economy, beneficial for customers as it saves them costs and time. We can expect customers to flock to it when they use banking services. By *extra* advancement of ICT usage, the banking sector can be further improved as it will cut down its operating costs, meet customers' needs and keep up with global technological changes.

This *win-win* setting for producer and user of the product in *digital-banking*, will certainly work for any country, Pakistan being no exception. To sail through tough competition and sustain revenues, its financial sector needs effective engagement of policymakers' motivation and supportive efforts.

Direction for future study

The future study can go in at least three directions:

- The welfare ranking of the alternatives (L or H) is an open empirical question. There is a need to measure welfare under alternative policy intervention or no intervention conditions.
- It is important to find out whether different preferences (L or H) and confidential information can have the same welfare implications if they generate similar demand and cost curves.
- For practical purposes, we need to know whether insurance premium has any impact on the probability of VI policy adoption that influences e-banking adoption in Pakistan's economy.

Conclusion

Having VI as a new product in e-banking can meet today's banking challenges. Its new and increasing value is that it will keep banks or firms growing, which can contribute to the flourishing of Pakistan's economy. If there is no new value to offer the customer, a bank or firm wilts and eventually dies. New products and services are the lifeblood of any bank or firm. Without them, firm, or bank withers on the vine and either disappears completely or gets absorbed by another firm. Society is therefore well-served by the continuance of its businesses because of the employment of individuals who work there and are consumers. They support society at large by paying taxes and donating to charity. Companies and civilizations have little choice but to grow and improve if they want to move from survival to thriving. The new products and services created and provided by companies of all sizes supply the mechanism for this growth and improvement.

The question asked in this paper is this: can the bank managers and policy practitioners of Pakistan play a role in improving their society when it comes to the digital banking services?

The answer is YES: the motivation and supportive efforts of policymakers and bank managers in Pakistan can indeed contribute to the development of its economy and speed up the country's transition to cashless society.

Acknowledgements

There was no grant in completion of this research work.

References

- Akerlof, G. A. (1970). The Market for “Lemons”: Quality Uncertainty and the Market Mechanism. *Quarterly Journal of Economics*, 84(3), 488–500. <https://doi.org/10.2307/1879431>
- Chen, C. (2013). Perceived Risk, Usage Frequency of Mobile Banking Services. *Managing Service Quality: An International Journal*, 23(5), 410–436. <https://doi.org/10.1108/MSQ-10-2012-0137>
- Cheng, S., Lee, S.J., & Lee, K.R. (2014). User Resistance of Mobile Banking in China: Focus on perceived risk. *International Journal of Security and Its Applications*, 8(2), 167–172.
- Covergenius.com (2022). *Insurance made for FinTech*. <https://covergenius.com/fintech/>
- Cook, D. (2023). *Top 5 forces that will shape international finance in 2023*. World Finance. <https://www.worldfinance.com/markets/top-5-forces-that-will-shape-international-finance-in-2023>
- Cruz, P., Neto, L.B.F., Muñoz-Gallego, P., & Laukkanen, T. (2010). Mobile banking rollout in emerging markets: evidence from Brazil. *International Journal of Bank Marketing*, 28(5), 342–371.
- de Meza, D. & Webb, D.C. (2001). Advantageous selection in insurance markets. *RAND Journal of Economics*, 32(2), 249–262. <https://doi.org/10.2307/2696408>
- Featherman, M.S., & Pavlou, P.A. (2003). Predicting e-services adoption: a perceived risk facets perspective. *International journal of human-computer studies*, 59(4), 451–474. [https://doi.org/10.1016/S1071-5819\(03\)00111-3](https://doi.org/10.1016/S1071-5819(03)00111-3)
- FinTech Futures. (2023). *State Bank of Pakistan names five successful digital bank applicants*. <https://www.fintechfutures.com/2023/01/state-bank-of-pakistan-names-five-successful-digital-bank-applicants/>
- Florea D. L. (2014). The formation of consumer’s perceived risk and risk aversion in the context of innovation adoption: qualitative research. *Network Intelligence Studies*, 2(4), 223–231.
- Forest, L. (2023), *Pakistan has been trying to improve financial inclusion for the last 20 years with little success: Are New Digital Licenses the Answer?* Euromoney. <https://www.euromoney.com/article/2bglzsmnywgbgeh58wlc0/banking/pakistan-tackles-financial-inclusion-through-digital-banking>
- Hsiao, W.H. & Chang, T.S. (2014). Understanding consumers’ continuance intention towards mobile advertising: a theoretical framework and empirical study. *Behavior & Information Technology*, 33(7), 730–742. <https://doi.org/10.1080/0144929X.2013.789081>
- Knaack, P., & Gruin, J. (2017). *From shadow banking to digital financial inclusion: Regulatory framework contestation between China and the FSB*. GEG Working Paper, No. 134.
- Kuisma, T., Laukkanen, T., & Hiltunen, M. (2007). Mapping the reasons for resistance to Internet banking: A means-end approach. *International journal of information management*, 27(2), 75–85. <https://doi.org/10.1016/j.ijinfomgt.2006.08.006>
- Lee, M. C. (2009). Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit. *Electronic commerce research and applications*, 8(3), 130–141. <https://doi.org/10.1016/j.elerap.2008.11.006>
- Lin, H. F. (2011). An empirical investigation of mobile banking adoption: The effect of innovation attributes and knowledge-based trust. *International Journal of Information Management*, 31(3), 252–260. <https://doi.org/10.1016/j.ijinfomgt.2010.07.006>

- Littler, D., & Melanthiou, D. (2006). Consumer perceptions of risk and uncertainty and the implications for behavior towards innovative retail services: the case of internet banking. *Journal of retailing and consumer services*, 13(6), 431–443. <https://doi.org/10.1016/j.jretconser.2006.02.006>
- McClelland, D. C., Atkinson, J. W., Clark, R. A., & Lowell, E. L. (1953). Toward a theory of motivation. In D. C. McClelland, J. W. Atkinson, R. A. Clark, & E. L. Lowell, *The achievement motive* (pp. 6–96). Appleton-Century-Crofts. <https://doi.org/10.1037/11144-002>
- Mitchell, V. W. (1999). Consumer perceived risk: conceptualizations and models. *European Journal of marketing*, 33(1/2), 163–195
- Murray K. B. & Schlacter J. L. (1990). The impact of services versus goods on consumers' assessment of perceived risk and variability, *Journal of the Academy of Marketing Science*, 18 (1), 51–65. <https://doi.org/10.1007/BF02729762>
- Rahman, A. (2018a). *Voluntary Insurance in Banking Services – New Product for Ensuring Risk-free Digital-banking of World-economy*. Lambert Academic Publishing.
- Rahman, A. (2018b). Voluntary Insurance for Ensuring Risk-free On-the-Go Banking Services in Market Competition for Bangladesh. *The Journal of Asian Finance, Economics and Business*, 5(1), 17–28. <https://doi.org/10.13106/jafeb.2018.vol5.no1.17>
- Rahman, A. (2018c), *Microeconomics Basics, New Way Learning Microeconomics in the 21st Century era*. Dhaka: Print Your Books Academic Publishing Company.
- Rahman, A. M. (2020a). Voluntary Insurance for Rapid Growth of On-The-Go Banking Services in World Economy: Seeking Attention. *AIUB Journal of Business and Economics*, 17(1), 27–40. <https://dx.doi.org/10.2139/ssrn.3732583>
- Rahman, A. M. (2020b). bKash vs. Bank-led Option: Factors Influencing Customer's Preferences–Does it Warrant Voluntary-Insurance-Policy for Rapid-growth Digital-banking in Bangladesh-economy? *Journal of Banking and Financial Economics*, 1(13), 44–62.
- Rahman, A. (2023). Name is Sheikh Hasina (HPM): The Power of Motivation & Ability for Political Maneuvering Thru Psychological Behaviors as Foundations, *International Journal of Accounting and Finance Studies*, 6(2), 56–73.
- Robinson, J. (2020). *Pakistan: Progressing towards a fully-fledged digital economy*. GMSA Association.
- Rothschild, M., & Stiglitz, J. (1976). Equilibrium in Competitive Insurance Markets: An essay on the economics of imperfect information. *Quarterly Journal of Economics*, 90, 630–649. <https://doi.org/10.2307/1885326>
- Shahid, A., & Hassan, T. (2022), *Mobile banking doubles, internet banking grows by 51.7%*. PT Profit. <https://profit.pakistantoday.com.pk/2022/12/23/mobile-banking-doubles-internet-banking-grows-by-51-7-in-fy2021-22/>
- Skinner, B. F. (1938). *The behavior of organisms: an experimental analysis*. Appleton-Century
- State Bank of Pakistan (2020), *Annual Report 2019-2020 (State of the Economy)*. Government of Pakistan. <https://www.sbp.org.pk/reports/annual/arFY20/Anul-index-eng-20.htm>