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COVID-19 Brings Blessing for Digital-Banking in World-Economy Country-Wise: An Analysis Under Demand-Supply Model of Market Economics

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Abstract: Lifestyles of today's civilizations are mostly dominated by technology usages no matter where they reside in the globe. As a result, human-services are mostly carried out in competitive manner where Banking-services are not different. It is carried-out with business mentality that has presented digital-banking, i.e. Bank-led and Mobile-led digitals in today's human society. However, COVID-19 has interrupted the *entire* human-system. It puts strains on markets, governments, businesses and individuals. But COVID-19 has escalated usages of digital-banking, a product in bank-sector, country-wise such as Bangladesh. This study undertakes interpreting the *episode* COVID-19 *vs*. Digital-banking-usages under Demand - Supply Model in market economics. In digital-services-market of world-economy country-wise, customers are identified in two categories and their efficiency-costs or prices are measured and utilized for analysis purposes in this study. The findings show that digital-banking customers where adverse-user faces lower efficiency-price than equilibrium-price and the advantageous-user faces *least* expected cost. Thus the progression of usages digital-banking is an outcome of market-economics, not something *else*. Despites the fact that the study uses a basic Microeconomics tools such as Consumer Choice Theory in completion the analysis, it is one of a kind in literature based on the approaches utilized interpreting customers behaviors in terms of economics. Findings of this study can be instrumental to digital-banking service-providers in market economy as well as to readers, *especially*, to classroom-students who are enthusiastic learning how to use tools of economics in application.

Keywords: Digital-Banking Usages, Corona-virus Consequences, Market Economics and Market Supply-demand

1. Introduction

Lifestyles of today's civilizations are mostly dominated by technology usages no matter where they reside. As a result, human-services are mostly carried out in competitive manner [9]. In this modern-world, time values are reckoned more than ever before. Thus, *by and large*, the expediency and cost-effectiveness as decision-factors have led individuals or businesses welcoming ICT-usages in multi-faucets. As a result, service sector like banking in world-economy has been reorganized meeting the 21st Century market-demands. Similarly, in aim to marginalize operating costs, today's customers compete for comparative time-saving-option (s). These are the common phenomenon of today's world-economy country-wise where Bangladesh is no different. Thus, this study has used Bangladesh-economy as a proxy of country-wise world-economy where besides traditional banking, Bank-led and Mobile-led digital-banking are playing significant roles in the economy. More specifically, ATM / Debit / Credit cards etc. and now Agent Banking etc. are in bank-led category whereas bKash, Rocket, Nagad, UCash, MyCash etc. are in Mobile-led category [1].

While this progression was going on, then suddenly came in the incident of COVID-19 more or less globally where in the sense of its consequences, Bangladesh was no exception. In Bangladesh, the first outbreak of the COVID-19 was from March 08 of 2020 and it went on to August of 2020 with significant number of confirmed cases on daily basis [12]. The

second outbreak of the COVID-19 started in the month of September of 2020 [11] and it has been going on but it is in faster phase compare to the first wave. It puts unprecedented strains on market systems and has twisted the decisions of governments, businesses and individuals in multi-faucets. However, as a result, the pandemic has facilitated higher trends of usages of digital-banking in world-economy where Bangladesh-economy is no exception. It raises question: was the upward trend or progression, *especially* during the COVID-19, of usages digital-banking country-wise an outcome of market economics or something else?

To answer the question posed, this study advances where Bangladesh's *scenario* on COVID-19 vs. Digital-banking is used as a proxy of country-wise world-economy. It interprets these progressions in-terms of the Demand and Supply Model. The expected findings of this study can be educational to readers, *especially*, to university level students for better understanding of this reality. It can be helpful to choose research topics and to complete their research-works for graduations or for publications or presentations.

2. Literature Review

The outbreak of COVID-19 first came into view in Wuhan City of China in December of 2019. Since then, it spread to 216 countries and resulted confirmed cases over 8.3 million and over 450,000 deaths worldwide as reported by the WHO in December of 2020 [16]. Given widespread and continuous transmission of corona, the WHO declared it as a pandemic on March 11, 2020 [16].

Thus this pandemic has been around for about eleven months with little variation country-wise globally. It is still common more or less country-wise where, in its initial stage, lockdown was deemed to be the first and foremost step and was seriously followed by most countries around the world. However, it has interrupted social & educational system and human lives, which have affected labor-markets, global supply-chain, consumption patterns in global economy country-wise [13, 12]. *Particularly*, it has disrupted food supply and supplies of other essential goods & services that are mostly needed to humankinds for survival and advance their lives. With government's prompt efforts country-wise, the facilitations of ICT utilization, *especially*, digital-banking in the form of mobile-led or bank-led has helped in the process of humankind's survival. This development was helping the standard supply chain to move forward slowly but steadily, which has been helping the market system keep-running.

By so doing, COVID 19 has brought changes in shopping habits of customers [12]. It has been changing the ways in which humans in world-economy country-wise handle the money itself. On rare occasions when people have tried to visit shops in recent months, they've brought changes in their lifestyles and have avoided cash for fear of spreading virus. Instead of usual ways, they tapped in their card or phone at the checkout counter of the shop. Higher levels of groceries delivered door to door and Uber have further propelled the rise of digital payments. In

reality, at the initial stage of the COVID 19 country-wise, hundreds of bank branches were temporarily closed and ATM withdrawals were collapsed. As results, these constraints had further enhanced the usages of mobile-led or bank-led digital-banking services. So it would not be overstated claiming that the facilitation of digital-banking has kept the market economics lives [8].

Few studies, either in empirical or theoretical or in report format, have been conducted on COVID-19 *vs.* its impacts on global economy or country-wise economy [6]. Many studies have done on trends of usages digital financial-service or on banking influenced by COVID-19 [13]. It has triggered the level of usages of digital-banking in many countries [8, 14]. As reported, money lending rate cap in many countries like Bangladesh and the impacts of the COVID-19 have hit hard the business of banks [14]. The referred report further continued, as results, the most banks experienced a decline in its revenue earnings. However, ongoing digitization becomes a major tool helping the financial sector coping with the challenges. It has started improving operational efficiency and minimizing expenditures in aim to address the problem at a faster pace [14]. Financial sector particularly Banking-sector have seen this as helpful for generating further revenues country-wise such as Bangladesh [5]. As reported, the banking sector has seen it as a "blessing" for digitization country-wise as the pandemic has pushed banks to go for expanding its digital services [14].

However, no study until now has been conducted on interpreting the whole *episode*, COVID-19 *vs.* Digital-banking, in-terms of Demand and Supply Model in Market Economics.

The current study takes on the tasks to interpret the *episode*, COVID-19 *vs.* Digital-banking progression of world-economy country-wise in terms of market economics. The findings can fill the gap in literature. It can also be educational to readers. Particularly, it can be helpful to university-level students sharpening their skills on how to utilize tools of Microeconomics in their future endeavors. It can further attract them engaging in research works, which can be helpful fulfilling requirements for graduation, if thesis group is chosen.

3. Objectives of the Study

1. To answer the question whether the progression, *especially* during COVID-19, of usages digital-banking was an outcome of market economics or something else.
2. To interpret the *episode*, COVID-19 *vs.* Digital-banking progression, under Demand and Supply Model of market economics.
3. To spell-out the readers who can directly be benefited of the findings of this study.

4. Methodology

Firstly, this study uses Graphical Techniques based on data-statistics available to the Statistics Dept., Bangladesh Bank [1]. *Subsequently*, these graphs are used to capture the

direction of the trends of number of transactions separately led by Mobile-led and Bank-led digital-banking in Bangladesh. *Secondly*, it uses Demand and Supply Model of market economics in aim to understand individual's preferences during COVID-19 pandemic across the world country-wise.

5. Background of Digital-banking in Bangladesh

In 2006, the Office of the Certified Government Auditing Professional (CGAP) categorized digital-financial-services (DFS) into two groups [14]. The one group is led by banks and the other group is led by nonbanks. It was immediately realized, despite the fact banks remained the legal providers of services, that the nonbanks were taking the lead over the bank-led, in implementing DFS. Akim Rahman has referred them as "bank-based or bank-led" *vs.* "nonbank-based or Mobile-led" digital-banking models in Bangladesh [8]. This denotation or title may vary from country to country. However, the purposes or goals of these creations are mostly same country-wise.

With this clarity and position, this study elaborates and compares the performances of both categories during the COVID-19 pandemic period in Bangladesh economy as follows.

5.1. Bank-led Digital Services

Despites the fact that internet came in Bangladesh in 1996, its usage in banking sector started sometime early in year 2000. Since then, the Internet Banking has been gaining popularity in Bangladesh where the recent addition is Agent Banking or Agent-based digital-banking system. A number of private and state owned commercial banks have become Online-banking now based on the demand and requirement of fast-service banking [11].

Internet based Bank-service is one of the few web-based service-products that benefits the users or customers and the banks in world-economy country-wise. It is technology-based system that facilitates bank-customers to access their accounts and to general information on bank products and other services through a desktop or laptop or mobile phone or other intelligent devices.

Bangladesh has done tremendous job in bank-products innovation and banking-process innovation in recent days. But in model innovation category and information category, Bangladesh is behind the international standard [13]. Here financial sectors are more concerned about Core Banking System (CBS), mobile app development, alternative delivery channel, cards operation etc. As of year 2020, Bangladesh had around 600,000 credit card users even though there were 110.76 million internet users [13, 2]. As of the 1st quarter of year 2018, total number of plastic cards in circulation was 13,023,769 [13]. As of January of 2018, there were approximately 17.61 lakh users of internet banking. Most of the users had adopted internet banking for fund-transfer operation [11]. About 7.18 lakh transactions including 2,175 crore Taka were performed through internet-banking platform in January of year 2018, reported by the BB [11]. Figure 2 shows that bank-led is behind mobile-led by 9.20 percent in one year period when it comes the number of transactions in digital-banking services in Bangladesh. Figure 1 shows that bank-led was significantly falling behind of mobile-led during COVID-19 in case of total number of transactions of digital-banking in Bangladesh where total number of transaction in month of July 2020 was the highest.
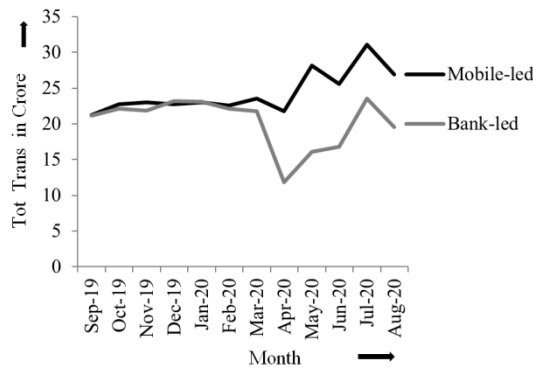
5.2. Mobile-led Digital-banking or Mobile Financial Services (MFS)

The MFS Guidelines in 2011 indicated that the journey of MFS platforms in Bangladesh started under a bank-led structure. As World Bank reported, the financial inclusion in Bangladesh had increased from 3 to 21 percent and the DFS and MFS have played a huge role behind this [15]. Besides others, bKash is the one leading MFS platform with the highest number of users. Figure 1 shows that mobile-led banking significantly leads the trends of number of transactions of digital-banking during the COVID-19 pandemic in Bangladesh where number of transactions in month of July 2020 was the highest. Figure 2 shows that mobile-led banking leads by 9.20 percent of total digital transactions in one year period.

## 5.3. Discussion and Summary on Digital-banking-usages Progression

Based on availability of data statistics in Bangladesh, the graphical presentation above is based on data period ranging from month of September of year 2019 to August of year 2020. These data-statistics periods are divided into two sub periods so that it reflects the impact of COVID-19 in Bangladesh. In this study, it is used as the proxy of the impacts of COVID-19 country-wise. In the month of March, total transaction of mobile-led digital-banking in Bangladesh was 21.7 crore, which was the lowest and 31.05 crore was highest in the month of July of 2020. In *contrast*, in the month of April, total transaction of bank-led digital in Bangladesh was 11.80 crore and 23.56 crore was the highest in the month of July of 2020. During COVID-19 crisis, the utility of these platforms was maximized by paying salaries of readymade garments (RMG) workers along with disbursing stimulus packages and safety net fund to remote areas [13]. In RMG sector, MFS platforms are being profoundly used to pay the wages of workers. Introducing interoperable digital payment systems in RMG would facilitate making payments both for the industry as well as for the workers.

Since the month of March 2020, the COVID-19 has steered the nationwide social and economic lockdowns and pushed the economy on the verge of collapsing. However, this has led to a sharp rise in the use of digital payments during the pandemic.

Figure 1. Mobile-led vs. Bank-led trends of transaction numbers in Bangladesh.
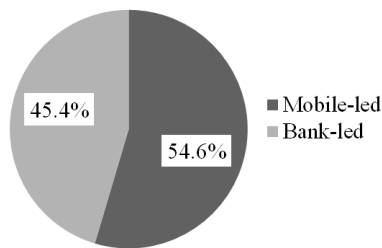
Figure 2. Mobile-led vs. Bank-led digital-banking transactions in Bangladesh.

Here total number of users are the combination of two groups population a) those who did not use the digital-banking before and now their preferences are for it because of COVID-19 and b) those who used the digital-banking before and now their preferences for it have been expanded further as much as possible because of the COVID-19.

Because of the pandemic, mobile financial services have witnessed its overwhelming demands. The trends of these demands have been influenced by service-users' inabilities to make physical payments and its needs for ensuring safe and secure transactions. On top of this, with government's efforts, the digital payment methods have facilitated mitigating the economic impact to the sufferers of COVID-19. It has further influenced the transactions no matter whether the "help" recipients were located in rural or in city areas.

6. Application of Demand-Supply Model in Market Economics

In Market Economics, most often economists use the terms supply and demand. The concept of a market is a way in which an economic activity is organized between buyers and sellers through their choices, behaviors and interactions with another. It is not always necessary to have a media of exchange or currency in any market system as long as both buyer and seller or parties involved agreeing to exchange their products or services without reservation. Thus exchange of goods or services, with or without money, is a transaction [7]. It can also be said that demand in market is determined by many factors [10]. Thus when there is a change in demand due to one or more than one factors, other than price, the result leads the shift of demand curve. The demand curve shifts outward from the original demand curve indicating that consumers face at higher price and purchase more units of the commodity where a factor other than price-factor has influenced increasing the demand. *Conversely*, demand curve shifts inward from original demand curve indicating that consumers face lower price but purchase less. In this scenario, consumer face lower price and purchase less units of commodity where a factor other than price-factor has influenced decreasing the demand.

For example – demand for leather jacket during winter leads higher demand and consumer face higher: demand curve shift outward. *Conversely*, demand for ice-cream during winder leads lesser demand and consumers face lower price: demand curve shift inward.

Because of economic lockdown, measures for physical distancing, systems in place for patchy social protection and the *scenario* of countries that mostly dominated by areas of rural, the high level of informality complicates human activities. In these circumstances, governments in many countries are leveraging mobile technology to help their citizens. Governments are helping its citizens through their phones quickly and efficiently distribute emergency financial supports such as government of Bangladesh [13].

On COVID-19 *vs.* Digital-banking perspective, planning strategically to be on safe-side from the danger of the pandemic, an individual like most humans prefers to use mask, sanitizer etc. as protectors. On the same token individual prefers to use digital-banking when s/he faces choices of monetary transactions. Besides other factors, to be on safe-side during COVID-19, individual, either new one to digital-banking or the one who was using it before has preferred to use digital transactions in its preferences for making survival needs available to individual or to family. This was the common *scenario* of world-economy country-wise.

With this reality of world-economy country-wise, demand of usages-digital-banking increases during COVID-19 despite the fact that it incurs higher costs or prices for using services of digital-banking. It is like, in summer season, market price or cost for buying a leather-jacket is very low because the demand of leader-jacket in jack-market tends to *zero*. But because of winter, despites price or cost of leader-jacket increases, demand for leader-jacket increases too. On digital-banking service cases, new users face *extra* cost for internet services, bank accounts fees (ex. yearly fees) or charges for using agent (s) for completion of mobile-led banking. Similarly, the ongoing users face higher costs or prices because of higher demand of internet and higher demand for digital-banking services than that before. In this *scenario*, consumer who is now protected from the COVID-19 or the bank or the product such as services of digital-banking or the technology gains further advantage that has resulted increased returns to parties involved.

6.1. Looking thru Microeconomics Lens

In Microeconomics, Consumer Choice Theory captures the reality on how people decide to spend their money based on their individual preferences and budget constraints. It shows how individuals make choices, *subject to* how much income they have available to spend, with given prices of the good / services, given price of the substitute good and the necessity of the good. Also, the understanding "how consumers operate" makes it is easier for vendors to predict which of their products will sell more. This understanding further enables economists to get a better grasp of the shape of the overall economy.

6.1.1. Theoretical framework: Equilibrium Price vs. Equilibrium Number of Digital-transactions

A theoretical framework is a single formal theory, in this case it is: Consumer Choice Theory. Since this subsection of the study is designed around the Consumer Choice Theory in Microeconomics, the primary means in which this research problem will be understood and investigated. In this approach, under Consumer Choice Theory, the equilibrium price and equilibrium quantity i.e. number of transactions of digital-banking will occur where the supply and demand curves cross or intersect. The equilibrium will occur where the number of transactions demanded will be equal to the number of transaction-services provided by banks. If the price is below the equilibrium level, then the number of transaction will exceed the number of transactions provided. This framework is elaborated as follows.

i. *Setup & notation:* First this study considers the COVID-19 situation where individual have choice or preference to use digital-banking or other option (s) for completing a monetary transaction. In other words, here a consumer has absolute freedom in choices or preferences underpinning individual's budget constraint or constraint of COVID-19 exposures. In this setup individual can come from either avenue – "new to digital-banking" or the "one who is not new but have been with digital-banking choices". Banks and MFS – the service providers of digital-banking, are producers or sellers in the market where digital-services are products. Here service-providers charge fees or prices for the services underpinning government regulation. On the same token, users of digital-banking are the consumers or buyers of digital-services in world-economy country-wise. Accessing to digital-banking services, customers are required to have access to internet, computer or mobile phone etc., which incur *extra* costs for the customers, which are together the market price of the product, the digital-banking services.

These are merely normalizations to relax where vendors, the bank (s) can handle customer's access to digital-banking services just like it handles its customer account fees. Similarly, MFS can handle customer's access to mobile-led banking services based on fees in percentage of total amount in each transaction. These are the common practices in digital banking system in Bangladesh, which is a proxy of world-economy country-wise.

ii. *Demand for digital-banking services:* It is assumed that demand curve for digital-banking services is DD and this DD curve shifts outward due to COVID-19, which is shown by dashed line DD´ in Figure 3. It is further assumed that each customer makes a discrete choice whether to buy or not to buy services of digital-banking where customer's demand is a function of relative price p or cost c for the services of digital-banking. Also, it is assumed that banks or MFS cannot offer different prices for each service to different customers. In other word, there will be same price for same service for each customer. To the extent that banks or MFS or Internet Service provider can offer price depend on observed characteristics but same price for same service. It is assumed that if customers choose to buy the service they buy it at the lowest price at which it is available. So, it is sufficient to characterize demand for digital-banking services as a function of the lowest price p. *Mathematically*, D=f (p) or D=f (c) where D=demand for digital-services and p or c=price or cost for having digital services [7].

iii. *Supply and equilibrium:* It is assumed that there are N $\geq$ 2 service-providers or banks or MFS in digital-banking cases that set prices in a Nash Equilibrium. There might have both imperfect and perfect competitions in market. But this study chooses to focus on the case of perfect competition as it represents a natural benchmark for the purposes of further economic analysis.

It is further assumed that when multiple banks or MFS set the same price, individuals or number of transactions that is decided to purchase digital-services at this price choose a bank or an MFS randomly. It can also be assumed that the only costs of providing services to individuals or number of transaction "i". Here X-axis represents number of transaction-services provided by banks or MFS. Y-axis represents prices or costs for the digital-services along with costs for Internet.

Figure 3 shows that the market of digital-banking services where supply curve intersects with initial demand curve (D) at point E_1 which shows corresponding equilibrium digital-transactions number Q_{eq} corresponding to equilibrium price P_{eq}. In other words, in this digital-banking service market, advantageous users of digital-services buy the services and bank or MFS sell or supply the services to the buyers or users of the services.

Now because of COVID-19, demand curve for digital-banking services shifts outward just like demand curve for leather-jacket during winter shifts outward. It results higher demand for services in digital-banking service-market, which leads higher prices or costs for accessing digital-banking services. This is because beside advantageous users (who have already been using services of digital-banking and participating in the market) the new users are in market because of COVID-19. It has resulted higher demand for services of digital-banking, which leads higher price or cost for the service in the competitive market where many banks or MFS along with Internet service providers are participating. In this competitive digital-banking service market, Q^*_{eq} represents equilibrium number of transaction or individuals who use digital-banking service corresponding to

equilibrium prince or cost P^*_{eq}.

In this setup, it is clear that $P^*_{eq} > P_{eq}$ and $Q^*_{eq} > Q_{eq}$, which suggests because of COVID-19, the demand for services of digital-banking increases, which leads higher prices or costs for the services.

6.1.2. Graphical Representation Capturing Adverse and Advantageous Users of Digital-banking

With the above framework, graphical representations of users of services of digital-banking are shown below.

This presentation can be helpful understanding the efficiency in case of costs or prices of different types of preferences for digital-banking services in world-economy country-wise.

Supply and equilibrium: It is further assumed that when multiple banks or MFS set the same price, individuals who decide to purchase digital-services at this price choose a bank or an MFS randomly. It can also be assumed that the only costs of providing services to individuals i are total costs are say TC. Here average cost (AC) curve is determined by the costs of the sample of individuals choose digital-services. *Symbolically*, AC=TC / i where AC reduces as i increases.

In order to simply characterize equilibrium, this study makes two further assumptions. *First*, it assumes, there exists a price $\bar{p}$ such that $D (\bar{p} > 0$ and $MC (p) < p$ for every $p > \bar{p}$. In other words, it is assumed that it is profitable and efficient to provide services to those with the highest willingness to pay for it. *Secondly*, it is assumed that if there exists $\underline{p}$ such that $MC (p) > \underline{p}$ then $MC (p) > p$ for all $p < \underline{p}$. That means, it is assumed $MC (p)$ crosses the demand curve at most once. It is easy to verify that these assumptions guarantee the existence & uniqueness of equilibrium. Here equilibrium is characterized by the lowest break-even price $P^* = AC (P)$.

6.2. Analysis Underpinning Above Setup

In Figure 4, AC curve intersects with new demand curve DD′ that shows equilibrium price P_{eq} corresponding to equilibrium number of transaction of digital-banking Q_{eq} in case of adverse users who did not use it before COVID-19. Now their preferences are for using services of digital-banking in their choices. Here MC intersects with DD′ that shows the efficient P_{eff} corresponding to efficient number of digital-banking Q_{eff}.

6.2.1. Adverse Users of Digital-banking Services

y-axis of Figure 4 represents price or cost of digital-banking services and x-axis represents quantity i.e. number of transactions in digital-banking-service market where maximum possible quantity is denoted by Q_{max}. The demand curve denotes demand for digital-banking services. Similarly, average cost (*AC*) curve and marginal cost (*MC*) curve denote average and marginal incremental costs to the users.
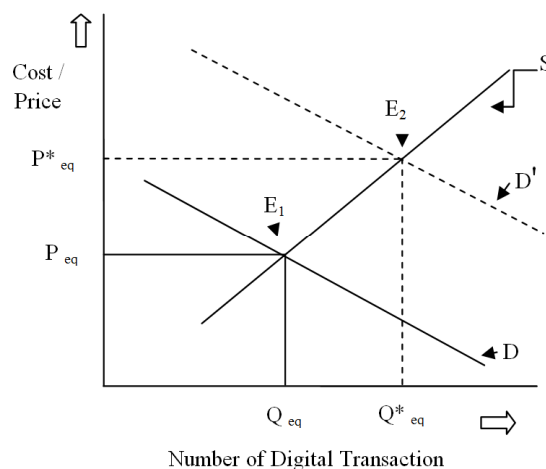
D = Demand for digital-banking services including internet
D′ = New demand line for digital-banking services in presence of COVID-19. (Note: here demand line shifts outward because of COVID-19, which raises higher demand that raises prices or cost for the services.

P = Price of digital-banking services including internet price
C = Cost for the services including charges for Internet

Q = Number of transactions or individuals who use digital-banking services
Q_{eq} = equilibrium of number of trans

Q*_{eq} = number of trans relates to new **D′** due to COVID-19
E₁ & E₂ →Intersection of D-S & D′- S

Figure 3. Digital-banking Services Market.

The key feature of adverse users is that individuals who have the highest willingness to pay for digital-services are those who, on average, have the highest expected costs or damages from the COVID-19. This is shown in Figure 4 by drawing a downward sloping MC curve, which indicates MC is increasing in price and decreasing in quantity. As price falls, the marginal individuals who choose to use digital-banking have lower expected cost than infra-marginal individuals, leading to lower average costs. The essence of the private information problem is that the bank cannot charge individuals based on its privately known MC, but are instead restricted charging a uniform price, which in equilibrium implies average cost pricing. Since average costs are always higher than marginal costs, adverse users create underuse of digital-banking services.

This under-user phenomenon is shown in Figure 4. The equilibrium share of individuals who buy services is Q_{eqm} (AC curve intersects DD′ curve at point C). And accordingly, efficient number is ($Q_{eff} > Q_{eqm}$), this is because MC curve intersects DD′ curve.

6.2.2. Advantageous Users

The framework in this study, Figure 5 makes it easy to describe the nature and consequences of advantageous users of digital-banking services. Here in *contrast* to adverse users, with advantageous users who value or have been using digital-banking since before COVID-19, the most are those who have, on an average, the *least* expected costs.

This translates to upward sloping *MC* and *AC* curves (Figure 5). Here source of market inefficiency arises because here i) Consumers vary in their marginal cost ii) Banks are restricted to uniform pricing and iii) Equilibrium price is based on average cost. However, with advantageous users of digital-banking services, the resultant market failure is one of advantageous users than adverse users of digital-banking services i.e. $Q_{eff} < Q_{eqm}$ in Figure 5. In general, the service providers here have an additional incentive to reduce price, as the infra-marginal customers whom they acquire as a result are relatively good risks.
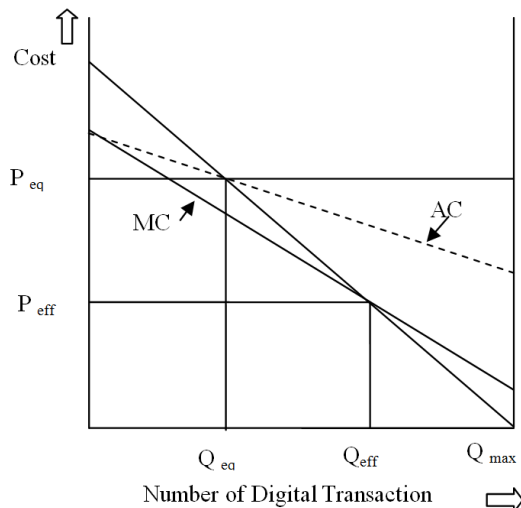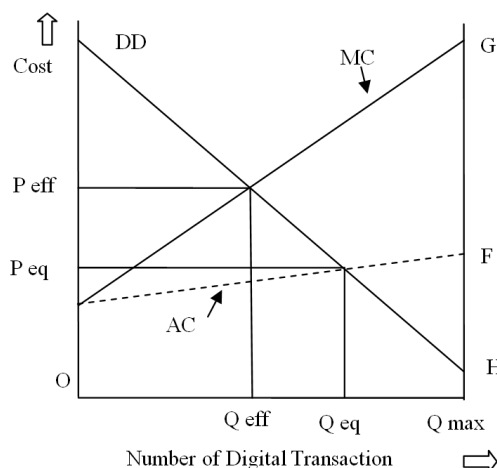

Figure 4. Efficiency cost, adverse users.

Figure 5. Efficiency cost, advantageous users.

7. Conclusion

Humankind in the 21st Century lives in world of *business-*

mentality with technology-driven lifestyles where services are carried out in multi-faceted, competitive and rationality manner. Banking services are no different in world-economy country-wise. While this economic development was going on, the appearance and spread of the COVID-19 across the world has shacked up progression-trends in most sectors country-wise. Bank sector have seen this as an opportunity for generating further revenues country-wise. As reported, bank sector sees it as "blessing" for digitization country-wise as the pandemic has pushed banks to go for expanding their digital-banking services. This study takes the tasks to interpret the *episode* COVID-19 *vs*. digital-banking usages progression in terms of Demand-Supply Model in market economics. Because of COVID-19, both adverse and advantageous users of digital-banking are in market for the services. It results higher level of demand and higher price of services of digital-banking that leads demand curve shits outward. Thus progression of usage of digital-banking during the period COVID-19 is a *phenomenon* of market economics not something else.

On efficiency costs or prices of different types of preferences of users of digital-banking (adverse users and advantageous users) in world-economy, it is clear that market equilibrium price is higher than market efficiency price. The key feature of adverse users is that individuals who have the highest willingness to pay for digital-services are those who have the highest expected costs or damages from the COVID-19. In advantageous users cases, efficiency price or cost is higher than market equilibrium price or cost. In *contrast* to adverse users, the advantageous users who have been using digital-banking since before COVID-19, the most are those who have the *least* expected costs. Thus progression of usages of digital-banking in world-economy country-wise is an outcome of market-economics, not something else. These findings will be educational to the readers, *especially*, to university level students for better understanding of this reality. It will facilitate opening up doors for future research in the subject area where graduate & undergraduate level students will be benefited in completion their research-works for graduations and in their endeavors.

Declaration of Conflict of Interests

There is no conflict of interest in completion of this study

Authorization

We, the authors of this article, authorize the Editorial Team for making changes as needed for publication purposes.

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