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Abstract

Index terms—

1 I. INTRODUCTION

Banks need to adopt feasible ways to optimize their distribution costs to attain cost-efficiency. This required transforming business processes or the delivery routes of financial services since process improvement or reengineering aimed at cutting costs can result in an ad hoc piecemeal change, which sometimes be can become counter-productive in the long run. Moreover, banking business over the centuries has been characterized by financial intermediation, which involves mobilizing excess funds from households and on-lending to firms to drive the production of goods and services in an economy. The growth in the productive economy does trickles down to significantly reshaped economic wealth in both developing and developed countries. As a result, financial sector deregulation policies that permitted entry by both international and local players into the banking landscape became very prominent across the world.

The entry of international players into the banking sector coupled with the growing number of indigenous banks reinforced competition into the banking business model. Consequently, the banking business models witnessed a sporadic shift from the traditional model of just providing an intermediary role to managing relationships. This underpinned a worldwide discussion by industry experts on crucial elements of relationship management such as customer retention, sovereignty, and satisfaction. Thus, patronizing a banking service became no longer just a purchase-sale functional fulfilment but rather a business model characterized by customer relationship management. The shift in the banking business model became prominent by a gradual migration from being predominantly product-centric to consumer-centric and to a value-driven symbiosis, a system intertwined with values, missions, and visions that deliver mutual benefit for both banks and their customers.

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Interestingly, in the customer-centric regime, relationship management featured prominently in the banking business model as a new capability of improving consumer experiences and the way consumers patronizing banking services are served. By so doing, banks build a long-term relationship as consumers feel associated with their values to drive the long-term objectives within a mutually beneficial system. Consequently, relationship management concept was adopted by banks with the purpose of providing a relationship-based offering to customers through a pro-active, highly responsive personal approach that meets the financial needs and service expectations of the customers.

Relationship management was extended to include connecting customers with specialist expertise as and when required to provide appropriate support to them through a high level of integrity, professionalism and ethical standards whilst building valuable long-term relationships (customer loyalty) to optimize the distribution of financial services. To this end, putting the so-called enterprising individuals at a central position within the banking business models to proactively promote a relationship-based offering through operating as a dedicated and primary point of contact for the customer and providing financial solutions which meet customers' expectations became ill-equipped and cost ineffective to meet personalized customer expectations. This is because, within the value-driven symbiotic system, banks co-exist with customers and must have to manage human beings with personalized expectations, which are composed of physical stature, a heart programmed to feel emotions, a mind that is proficient of independent thoughts and analysis, and a spirit which forms a human beings' philosophical centre.

Customers are now human beings with complex diversities and differences in order to maintain relevant long-term relationships. Consumer preferences that influence the behavioral pattern within the value-driven symbiotic ecosystem surfaced to challenge the banking business models in terms of cost optimization that makes relationship management an all-inclusive agenda of putting the customer at the centre of the business activities (Thakral & Arora, 2018).

Intriguingly, the advent of digitization with the ramification of disruptive technologies has reinforced a striking advancement in the digital world propelling banks to invest a colossal amount of money into the search of how customers consume content and what makes them interact within the value-driven symbiotic system. Advanced analytics deployed to consistently measure bank customer engagements and assess the customers' loyalty and/or content value that makes it more engaging and relevant than the traditional system of relationship management offered a formidable framework. The fast pace of growing disruptive technologies had driven the commercial banks to be at par with the changing trends in the digital space or undergo a costly disruptive revolution that comes with technological advancement. The changing trend has drawn interest from both industry and academia to research into relationship management and digitization dynamics.

3 II.

THE CONCEPTUAL FRAMEWORK

4 Shifting Trends in the Banking Business Model

The banking business has undergone a sporadic transition in line with changing realities considering societal change and technological advancement that shapes customer preferences. Banks in their role as financial intermediaries focused exclusively on product development that offers a diversified portfolio to the services provided. In this product-centric banking model, no relationship management exists or is required as banks develop products for customers to buy to satisfy their financial needs. This model was made possible because banks simply have to take the excess liquidity from households and on-lend to provide liquidity for firms to aid production. Financial deregulation policies reinforced competition into the banking business and concern shifted from just developing products to aid the money creation process to satisfying the customer.

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Relationship issues became a prominent feature in this business model since banks must ensure they retain customer's loyalty so as to drive and sustain their profitability. The unprecedented wave of disruptive technologies further redefined the banking business model. Fintech has revolutionized the traditional banking business models to the extent that, the banking business now belongs to banks that are innovative and can harness their potential within a value-driven symbiotic system. The propelling factor being digitalization makes this banking business model require no relationship management but rather a banking business model characterized by co-creation of mutual benefits. The three different junctions of time within the evolution of the banking business models is represented diagrammatically as follows:

6 Digitalization and Relationship Management in Distribution of Financial Services

The last chapter of every phenomenon forms the concluding chapter. As such, digitalization in the financial service industry is concluding the era of relationship management in the banking sector to usher the "world of money" onto a new millennium where relationship management would not be required. The digital dispensation has created an unparallel disruption to the traditional retail banking modalities. The Fintech disruption is not going to be a one-time event, but rather a continuous phenomenon that will continue to reshape customer behaviour, banking business models, and long-term restructuring of financial services. This phenomenon is further supported by the dynamics in the third state of the shift in the banking business models that emphasizes a value-creation symbiosis.

The symbiotic system naturally develops a relationship between the bank and the customer as they both need each other to thrive and succeed together. The digital era has enabled the creation of platforms with innovative solutions that offer the value-added functionalities required in the value-driven symbiotic system. These platforms enable banks to interact more closely with customers to deliver additional value. Recent payment for innovations driven by digitalization allows customers to effect payment transactions automatically by leveraging connectivity without a physical presence in any bank. Customer needs and behaviour are constantly changing in an increasingly cashless economy and banks would have to reposition their perspective about relationship management.

The digital era is indeed writing the last chapter of relationship management in the financial service industry by replacing personal identity with digital identity within the value-driven symbiotic system. Within the value-driven

7 Distribution Cost Optimization

Distribution Cost Optimization in an Increasing Banking Business Model Digitization system, digital identity has become increasingly a pressing need due to the increasing number of identities-dependent transactions on account of the growing use of the digital transaction channels and the increasing interconnectivity between entities. Fraudsters in the financial landscape have become increasingly sophisticated in the use of technology and the tools they use to carry out illicit transactions thereby increasing their ability to cause financial damage by exploiting weak identity systems, common with human beings. Banks carry out cross-border business transactions with diverse entities they have no historical experience and relationship with, making such transactions increasingly complex, and as such digital identity is required.

Digital identity offers the opportunity to streamline operational processes, improve automation and reduce human error and intervention thereby necessitating the annihilation of relationship management within the banking business model. Digital identity further offers the opportunities to transcend the borders of core banking business and capabilities in order to create new banking business models to reach new customers thereby negating the role of relationship management that is traditionally meant for such task. Another prominent domain where the digital landscape is relegating the role of relationship management to the ground is the creation of new revenue streams out of new financial products and services. Digital identity systems increasingly support the positive recognition of the product brands to drive the required profitability.

8 The Tale of Two Cost Centres

Relationship management has been the predominant distribution channel or cost Centre that gain momentum in the second junction of time within the advent of the banking business model revolution. Its sustainability is deemed by think tanks as cost ineffective on account of the evolutional pressure of business process reengineering in the banking business model within the third junction of time (Oracle, 2017). Adopting different distribution channels of financial services could impact about 80% of banking revenue thereby calling banks to identify and jettison processes that are outdated and adopt an innovative process that offers incremental value to the customer (Accenture, 2020).

The obvious alternative is for banks to migrate from their legacy core banking system of customer relationship management, and leverage additional solutions brought by digitalization. This could result in modernized customer relationship management applications operating on pre-integrated engineered systems that support improved customer experience, optimize costs, and simplify processes, resulting in improved profitability. However, adopting business process reengineering (BPR) to align with the digitalization of distribution routes comes with high costs and complexities. Consequently, management accountants are faced with the tale of two cost centres; the relationship management Cost Centre and digital Cost Centre, to determine which results in the optimization of the distribution cost.

Against this background, this study aims at examining the relative impact of the two cost centres on banks' cost and efficiency structure to determine which one results in the optimization of distribution cost. Specifically, this study is taking a historical view to ascertain whether digitalization of the distribution process of financial products is writing the last chapter of relationship management by quantitatively examining the relative impact of digitization and relationship management on bank's cost and efficiency. The remainder of the paper is structured as follows; section four reviews some key related literature. Section five highlight the methodology of assessing the impact of digital identity and relationship management on banks' cost and profitability. Section six reports the model estimation and result. Section seven highlights the discussion of results and section eight highlights the conclusion of this study. The literature that explored the dimensional aspect of digitalization also provided a theoretical insight without explicitly investigating the impact of business performance. The other strand of studies examined how technology is applied to ensure effective CRM. This study, unlike the other studies, hypothesizes that digitalization would sporadically phase out the concept of relationship management in the banking system, a hypothesis that has not been explored by any literature to the best of the researcher's knowledge.

Ziliani & Ieva (2016) examined the current pattern of customer relationship management (CRM) framework in selected companies and ascertain how customer relationship management impacts on firm's economic performance. The study hypotheses that, CRM implementation depends on certain company characteristics. Using a cross-industry survey conducted online on 127 Indian companies examined using cluster analysis, the study finds that the companies with higher commitment to customer relationship management dibbed as "best in class companies" have higher economic performance than their counterparts with a lower commitment to CRM. The study concluded that profitability and economic performance are the hallmarks for companies that integrate CRM into their business models.

Fierro et al (2016) examined factors that influence the success of CRM in an organisational setting. The study side-tracking the role of technology in relationship management analysed the simultaneous impact of knowledge management and being market oriented of the successful implementation of CRM. The study finds that market orientation and knowledge management significantly influenced the successful implementation of CRM. The study concluded that, instead of companies using technology to improve their CRM, the focus must not be much on technology but rather on the effective selection, training, and motivation of employees.

Boutsouki & Giannakis-Bobolis, (2014) examined CRM in the context of the era of social web and social customer by investigating customer engagement in the Greek retail banking sector. The study hypothesized that

the traditional CRM is undergoing a gradual process of change into social CRM which forms the basis of customer engagement in the business environment. The study estimated the extent to which the traditional CRM practices integrated into the customer performance measures and its impact on customer engagement in the retail banking sector. The study finds that, a customer's satisfaction and commitment or loyalty to a bank is a key determinant of a customer's willingness to be in a relationship with the bank.

Kotarba (2016) examined new factors influencing retail banking CRM and how they are being explored by Fintech. The study hypothesized that banks face a puerperal pressure emanating from accelerated technology and social changes and this induces a classic change to the traditional CRM in the retail banking model. The study finds that, the evolution of Fintech has affected the traditional banking business model raking of a significant proportion of market share to the tech-savvy companies.

9 IV. EMPIRICAL METHODOLOGY

10 Data

Longitudinal data from 2010 to 2018 on ten commercial banks in Ghana was extracted from the annual financial statements of the respective banks. The variables used in this study were Distribution Cost Optimization in an Increasing Banking Business Model Digitization selected in consistency with previous literatures that examined bank efficiency. However, since the aim of this study is to examine the impact of digitalization relative to relationship management on production and cost efficiencies of commercial banks, input and output variables enters the models were redefined to suit the context. Total loans and advances and total deposits of commercial banks were used as output variables consistent with previous studies (Rezitis, 2006 The level of digitalization is proxied by taking the ratio of commercial banks' investment in fixed assets to investment in human resources (Kotarba, 2017). Staff cost was used in this study as a proxy for investment in human resources.

11 The Empirical Model and Justification

The study uses the stochastic frontier analysis model based on panel data set approach. The estimation of this model is by maximum likelihood in consistency with the identification of inefficiencies component and as such, it is carried out under two sequential stages. In the first stage, the model is estimated using the maximum likelihood and in the second stage, the inefficiency estimates are derived from the mean of the conditional distribution. The inefficiency analysis carried out in the stochastic frontier modeling by this study consists of three steps. First, the estimates of the structural parameters were obtained to ascertain the potency of the selected input and output variables in the production function.

This conventional estimation step produces estimates of the parameters of the error term of distributions in the model. In the second step, the study estimated and analyzed the inefficiency component of the model. Finally, the study integrated the level of digitization and human resource as proxies for measuring the intensity to which the distribution of inefficiency is affected by exogenous variables. At this stage, importance is not attached to the structural parameters since they may or may not hold any intrinsic interest. The baseline stochastic frontier model is represented as:yit (1)

where is the dependent variable, is the production function, is the time specific idiosyncratic and stochastic component of the frontier and it could be either positive or negative Uit and is the technical inefficiency or cost inefficiency, and must conventionally be positive.

The baseline sochastic frontier model proposed by Aigner et. al, (1977) provided an additional distributional assumption for an empirical model as in the case of this study. This comprises the idiosyncratic term, which is the addition of a normally distributed and symmetric variable, and the inefficiency term which is a normally distributed absolute variable. The model was extended by Pitt and Lee (1981) to make it consistent with panel data analysis. To this end, equation one (1) can be rewritten as follows:

(3) (4) (5) Incorporating the exogenous variables to measure the intensity levels of digitization and relationship management, the study used the two-step process proposed by Greene (2008) that involves the estimation of the inefficiency without controlling for the level of digitization and relationship management and the second step which includes the exogenous variables. Due to the bias ascertained by Wang & Schmidt (2002) in the result produced by such estimation method, the model is extended into the simultaneous estimation proposed by Kumbhakar et al (1991), which proposes the parameterization of the mean of the pre-truncated inefficiency distribution. The extension of the inefficiency component in the baseline stochastic frontier model is expressed mathematically as follows:

(6) (7) Where ui is the outcome of the truncated normal distribution of the random variable. ?i is the vector of exogenous variables with their constant terms and ? is the unknown parameters to be estimated which represents the inefficiency effect.

The selection of the stochastic frontier analysis models for this study is motivated by the model's theoretical underpinning which posits that no economic agent can surpass the threshold frontier and as such the deviation from the ideal frontier is on account of the agent's inefficiencies. The model has the strength of capturing the impact of exogenous variables affecting the distribution of inefficiencies. Its application in this study is ideal to determine how technical inefficiency can be reduced in the banking business model either by the intensity of digitization or relationship management.

Furthermore, in order to prove that, digitization is writing the last chapter of relationship management, it is required to ascertain the extent to which inefficiencies and cost in the banking business models is influenced by digitization relative to relationship management that would warrant commercial banks to rather intensify or expand their investments in digitization to do away with relationship management. The estimated baseline model is expressed mathematically as follows:

Ln (totalloans/totaldeposits) = Ln ? (Nonintexp, equitycap, staffcost,fasset) + (vit -uit) uit = ? (Lndigitallevel, Lnrmgt) Where; Ln (totalloans/totaldeposits) = natural log of total loans and total deposits used dependent or output variables lnnonintexp = natural log of non-interest expenses used as independent or input variable lnequitycap = natural log of equity capital used as independent or input variable Lnstaff cost = natural log of staff cost used as independent or input variable lnfasset = natural log of investment in fixed asset Lndigital level = natural log of the level of digitization entering the model as exogenous variable lnrmgt = natural log of the level of relationship management used as exogenous variable

12 V. ESTIMATION RESULT

To validate the model's application to the hypothesis of this study that, digitization is writing the last chapter of relationship management through cost reduction and increase in efficiency within the value-driven symbiotic system, both the production function and the cost function have been estimated.ui ? N + (?i , ? 2 u ?i = ?i

Distribution Cost Optimization in an Increasing Banking Business Model Digitization phenomenon. Given the assumption of the model that, banks deploy digitalization or relationship management to source for accounts from customers geared towards either deposits or loans, this study investigated the extent to which digitization or relationship management could result on cost reduction and improve efficiency and the result is showed in table 2 above. A negative coefficient which is statically significant indicated that the intensity variable could reduce technical inefficiencies within the cost and production function. Interestingly, it can be ascertained from Table **??** that, under scenarios where both digitalization and relationship management are adding to inefficacies, relationship managing impacts more than digitization.

The results, however, defy this expectation and even with the low level of investment in digitization, the data tend to support the fact that more investment in digitization would reduce cost and improve efficiency than investing in relationship management. Minimum investment in fixed assets by banks is GHS876m and a maximum of GHS171,117m as against investment into personnel with a minimum of GHS 3681m and a maximum of GHS 425962m over the period of 2010 to 2018 as shown in table 3 below; Strikingly, the measure of digitization level in the banking system shows a relatively lower investment in the digitization of the banking business model. However, this does not come as a surprise given that banks predominantly centre all account onboarding activities at the branch even on the international banking architecture as shown in figure **??** below. Given that, the level of digitization of commercial banks is relatively low by international standard, it is expected that relationship management must be more prominent in influencing inefficiencies than digitization.

Fig

13 Source: Authors' own computation

Another interesting revelation further underpinning the fact that digitization is obviously writing the last chapter of relationship management is in relation to the impact differentials as shown in figure **??** below. From the result, the impact differentials under the four simulated scenarios indicated in table four above show that, digitization is impacting the cost and production functions of the banking business model than relationship management. When both intensity variables were simulated to either reduce cost or improve efficiency, digitization tends to outperform relationship management by a higher magnitude under all the four scenarios as shown in figure **??**

14 VII. CONCLUSION

In an era of prominent digitization, traditional banking models seem to be ill-equipped making it more erratic to the changing dynamics of Fintech. Commercial banks seem not to be in the position to keep pace with changing trends from a banking business model that was once product-centric to a customer-centric regime. Interestingly, the banking business dynamics forcefully plunged into an era characterized by a value-driven symbiotic system. The value-driven symbiotic system has ignited consumer expectation of the personalization of banking products and services on account of growing digitalization.

Interestingly, commercial banks still have a long way to go to keep pace with the personalization expectation of consumers. The 21 st -century type-customers have become sophisticated with the expectation that cannot be addressed by relationship management within the banking business model and the only remedy is the digitization of banking processes and operations. A gap of 22% exist between customers expect from their banks to what the banks are actually providing them (Digital Banking Report, 2019). While a whopping 73% expect banks to meet their expectation, only 53% indicated that the banks are actually meeting their expectation. An interesting revelation provided by the 2019 banking report which transcends the scope of relationship management is that, while 62% of customers expect banks to adapt based on their actions and behaviour, only 47% affirmed that banks are actually adapting to their actions and behaviour.

To this end, this study hypothesizes that, digitisation is obviously writing the last chapter of relationship management in the banking business model. The study considered the shifting trends in the banking business model from being product-centric to customer-centric and finally to a table-driven symbiosis, which continue to change customer expectation to the extend that relationship management is likely to be archaic. The study examined inefficiencies in the cost and production functions of the banking business model using the stochastic frontier analysis model to prove that cost reduction and efficiency improvement can be associated with digitisation of banking processes and operations rather than relationship management. The study finds that in the overall case, digitization improves the banking business than relationship management.

15 Relationship

Management in financial institutions and for that matter commercial banks, especially in the retail banking domain is under significant pressure on account of changing customer behaviors. The ”first move” of the banking business was predominantly product-centric. The ”second move” was customer-centric but accompanied by relationship management, a prerequisite for successful business operation. Relationship management wrote the last chapter of a product-centric regime to the extent that banks that must remain completive had had to adopt to Distribution Cost Optimization in an Increasing Banking Business Model Digitization Fig. **??**: Impact differentials of digitization and Relationship Management the new trends or be kicked out of the banking business. This is the ”third move” to a value-driven symbiosis, which is reinforcing the personalization of banking process and operations, this study reached a valid conclusion that, digitization being the forcing variable within the ”third move” of the banking business model would also write the last chapter of relationship management in order to close the book of the ”second move”. [1]

1

Figure 1: Fig. 1 :

Figure 2:

[1] Volume 23 | Issue 1 | Compilation 1.0 © 2023 London Journals Press Distribution Cost Optimization in an Increasing Banking Business Model Digitization

Figure 3: i= 1 ,

Figure 4:

3

Variable	Observation	Mean	Std Dev	Min	Max
Investment in Fixed Asset	90	28595.89	31710.04	876	171117
Investment in Personnel	90	102746.7	88861.64	3681	425962
Measure of digitization	90	0.342	0.305	0.048	1.386

Source: Authors' own computation

Figure 5: Table 3 :

4

120%
100%
80%
60%
40%
20%
0%
In Branch Website online
Source: Digital Banking Report July 2019
Distribution Cost Optimization in an Increasing Banking Business Model Digitization

Figure 6: Table 4 :

[London Journal of Research in Management and Business] , *London Journal of Research in Management and Business*

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