

Digital Influence on Consumer Habits

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Digital Influence on Consumer Habits: Marketing Challenges and Opportunities

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Chapter 1

Disruptive Artificial Intelligence: Augmenting Consumer Experience Through Chatbot Banking

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Abstract

This research sought to examine the differential effect of chatbot banking artificial intelligence (AI) on consumer experience in the banking industry. A positivist paradigm was adopted to sample 389 consumers who were previously exposed to chatbot banking in Zimbabwe. A causal research design was employed whilst a quantitative approach was followed. In analysing data, the research study applied the structural equation modelling (SEM) technique. The authors found that chatbot banking significantly improves customer experience (CX) in the banking industry. Reliability and responsiveness of the chatbot need to be enhanced for effective improvements in CX. A need was also identified to enhance CX through the development of an ease-to-use chatbot which is embedded in everyday messaging applications of consumers. A significant association was also found between perceived benefits of chatbot banking and CX. This study informs the development of competitive advantage by banks and other related companies through AI-based CX management strategies. In times of pandemics and beyond, chatbot banking can be very instrumental in improving CX.

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Keywords: Customer experience; chatbot banking; artificial intelligence; SERVQUAL; competitive advantage; Zimbabwe

1. Introduction

On a global scale, fierce competition has always been a menace to the overall performance of the banking sector. To manoeuvre in a highly competitive environment, [Hong et al. \(2011\)](#) reiterated the need for companies to develop sustainable competitive advantages. Coupled with the competitive rivalry in the industry was the insurgence of the Covid-19 pandemic which eroded the competitiveness and financial service excellence of many companies. The business environment became very volatile and uncertain and survival was largely based on a company's ability to improve CX through investments in technovation strategies ([González et al., 2021](#)).

Amongst many technovation strategies which are implementable in the banking sector, this study affirms the role of AI systems. Although most emerging economies are yet to fully erect expansive AI robotic systems for banks, chatbot banking AI has transformed the way employees and customers interact ([Wicaksono & Zahra, 2022](#)). [Ho \(2021\)](#) observed that higher internet interactivity amongst consumers has facilitated the use of chatbots and customers get instant services without visiting conventional banking halls. Other studies relating to chatbot banking have focussed on the application of chatbots to improve technological satisfaction ([Lubbe & Ngoma, 2021](#)), and explain why customers are willing to use chatbots as e-banking ([Nyagadza et al., 2022](#)). Typically, a chatbot is an AI system which is designed to offer two-way chatting interaction with people on a computer or mobile phone using messaging applications ([Mulyono, 2022](#)). A chatbot chats with humans using instant messaging.

Despite the unique competitive advantages brought about by chatbot AI systems, they have been introduced and have been usable without systematic research to validate their efficacy ([Khan & Rabbani, 2021](#)). The absence of research presents a plethora of challenges to the differential effect of chatbots on consumer experience. During the Covid-19 pandemic where movement was restricted, chatbots inevitably were helpful; yet their effectiveness on CX has never been tested. [Nyagadza et al. \(2022\)](#) noted that chatbot banking brings a huge change in CX and facilitates banking institutions to keep up the pace with changing customer expectations. However, some claims of poor performance of chatbots were recorded as some users claimed that it lacked reliability and responsiveness as compared to human-to-human interaction ([Musariri, 2022](#)). There is also a need to substantiate the generational compatibility of chatbots because technology acceptance is premised on acceptance by different generations of humanity. Hence, the chapter examines the impact of chatbots on consumer experience in the banking industry.

Previous scholarly works have made efforts to substantiate the antecedents of chatbot banking ([Ndukwe et al., 2019](#); [Wicaksono & Zahra, 2022](#)) and to model

chatbot banking (Jindal et al., 2020; Khan & Rabbani, 2021; Mulyono, 2022; Ndukwe et al., 2019; Trivedi et al., 2019) and CX (De-Keyser, 2015; Kavitha & Haritha, 2018; Makudza, 2021; Ndukwe et al., 2019; Schmitt, 2013). Regardless of the previous scholarly efforts, the causality between chatbot banking and CX remains grey. This study, therefore, sought to go beyond previous studies by modelling chatbot banking and AI CX.

2. Literature Review

2.1. Artificial Intelligence

AI involves the application of advanced computational technologies that mimic human brains in problem-solving, performance of tasks, drawing conclusions and self-correction (Soni, 2019). A set of algorithms, principles and processes help computer applications to perform cognitive activities of humans that include knowledge presentation, processing and predictive analysis. Gwagwa et al. (2020) explained that AI is experience-driven and facilitates sequential decision-making based on a particular computer application's ability to recognise patterns, observe and procure learning processes. AI enhances CX through voice banking, biometric authentication, customer segmentation and chatbots (Wicaksono & Zahra, 2022). This research focusses on customers' experiences with chatbot banking.

2.2. Chatbot and Chatbot Banking AI

Chatbot banking refers to a banking platform which is driven by robotic systems and AI and interacts with the transacting public offering practical banking assistance (Khan & Rabbani, 2021). Chatbot banking is a banking technovation which gives consumers banking-related solutions using messaging applications and systems (Alt et al., 2021). A chatbot can have a two-way conversation with customers, in the same manner, humans chat with each other seamlessly (Mulyono, 2022). The AI in chatbots allows the system to artificially replicate the patterns of human interactions in machine learning, thereby allowing the chatbot system to learn and adapt without the need for natural language programming and processing (Wicaksono & Zahra, 2022). Chatbots simulate conversation agencies that augment sustainable competitiveness and open new avenues of communication between the service provider and the consumers (Trivedi et al., 2019).

The utility of chatbot usage lies in its ability to offer continuous interaction between the company and its stakeholders, even after hours or during public holidays. The history of chatbot development dates back to the early 1960s when MIT Professor Joseph Weizenbaum introduced a chatbot-like system which used the name 'ELIZA' (Ndukwe et al., 2019). There are two main categories of chatbots. The first one used predefined questions and preloaded responses. This type of chatbot is irresponsive and offers limited solutions to customers. The second and more ideal type of chatbot uses an algorithm and can adapt itself so that it proffers solutions to cumbersome situations. This type of chatbot also can offer a customised CX through human-like interaction (Mogaji et al., 2021).

Most chatbots in the banking industry are used to offer responses to frequently asked questions (Kaczorowska-Spychalska, 2019). Chatbots also can enhance CX by offering customers real-time solutions and feedback regardless of geographical dispersion or time of the day (Khan & Rabbani, 2021). In Zimbabwe, Steward Bank's Batsi and First Capital Bank's Alisa use AI to respond to customer queries in real-time. The chatbots provide services to numerous clients simultaneously and beyond conventional business hours, which works well in this globalisation era where e-commerce is taking centre stage. In cases where chatbots cannot offer conclusive solutions to the customer, they are developed such that the customer is referred to the bank's human employee for further help.

Like any technovation system, chatbot banking has its notable limitations. The chatbot's dialogue functionality has adaptable limitations as its use relies on the question format or communication criterion of the developer (Wicaksono & Zahra, 2022). However, since chatbots ride on the wings of AI, the more chatbots are exposed to different dialoguing situations, the more they become adaptable and versatile (Ndukwe et al., 2019). The inability of some chatbots to respond to different language inputs presented a challenge when the chatbot system is set to operate in a multilingual region. Chatbots cannot hold a discussion, so they lack multi-response mechanisms when faced with a manifold of enquiries all at once (Ndukwe et al., 2019). As a result of their limitations and inability to understand different codes of languages, some customers found chatbots to be inauspicious and dissenting (Rahman et al., 2017).

2.3. Customer Experience

CX is based on the customer's perception of the service rendered by the company (Kavitha & Haritha, 2018). If customers perceive that the service rendered surpassed their expectations, it is considered an exquisite CX (Makudza, 2021). Buttle (2009) further indicated that CX is the cognitive and affective outcome of the customers' exposure to the company's offerings at all touch points. CX is typically managed throughout the customer value journey and at all points where the customer interacts with either the company or the company's product offering (Schmitt, 2013). De-Keyser (2015) highlighted that CX embraces all physical and psychological elements that a customer reflects on after being exposed to a service.

Makudza (2021) thus noted that CX is a product of human-service provider interaction whose efficacy is measured from the customer's perception base. Consequently, CX drives the need to surpass the needs and expectations of the customer through strategies that improve customer service delivery. Another key attribute of augmenting CX is its ability to act as a competitive differentiator thereby making one company more competitive than others (Hong et al., 2011). In addition, CX management is an antecedent of enhanced customer loyalty, enhanced patronage and reduced customer churning behaviour (Kavitha & Haritha, 2018).

To improve the experiences of customers, well-to-do companies seek to develop and offer a holistic product offering which is considered valuable by the

customers (Makudza et al., 2021; Teixeira et al., 2012). The need for an experience of customers drives banking from being transactional to an experience, where it becomes a banking experience (Buttle, 2009).

2.4. The Influence of Chatbot Banking on Customer Experience

There is a high utility score of chatbots especially on individualised experience, ability to resolve customer queries and epitomising customer feeling of personal worth (Hari et al., 2022). Kaczorowska-Spychalska (2019) articulated that the promptness of chatbots enhances customers' intrinsic experience and allows customers to get more information.

Chatbot banking also increases customer satisfaction through extrinsic CX (Ramesh & Chawla, 2022). The chatbot becomes a virtual bank teller which engages customers in conversation which is dyadic and solves challenges and complaints encountered by customers. This increases customers' positive viral marketing as they convince others to try the service (Arsenijevic & Jović, 2019). Customers get such service with minimum effort. Previous studies indicated a positive correlation between chatbot's promptness to respond and customer satisfaction utility (Khan & Rabbani, 2021). Arsenijevic and Jović (2019) noted that the social personality of customers in terms of being excited about innovative technologies has a bearing on customers' extrinsic experience.

Consequently, research has noted that chatbot's effectiveness is benchmarked on its ability to provide expected service (Cancel & Gerhardt, 2019; Khan & Rabbani, 2021; Moriuchi et al., 2021). The main features of chatbot's effectiveness as identified in the literature are: reliability, responsiveness, perceived benefits and perceived ease of use.

2.5. Chatbot Banking and CX Related Theories

The theories which relate to chatbot usage and CX are the service quality (SERVQUAL) theory, the unified theory of acceptance and use of technology (UTAUT) as well as the technology acceptance model (TAM).

Parasuraman et al. (2001) propounded the SERVQUAL framework. The theory posits that there are differences between what consumers expect before getting a service and their perception of the same service after consumption. SERVQUAL is made up of various dimensions. The earlier studies had identified ten dimensions (Asogwa et al., 2014) but these were eventually culled into five dimensions (Nga & Trang, 2016). The five dimensions of the SERVQUAL model are tangible, assurance, reliability, responsiveness and empathy.

The second theory which relates to chatbots and CX is the TAM. Customers choose technology if they view it as having high utility in solving their problems (perceived usefulness) and also the simplicity of the technology to the consumer in terms of efficacy (perceived ease of use) (Marandu et al., 2019). The most important loop is the end point, where consumers address their needs through using technology. (Alsharida et al., 2021).

The next theory, UTAUT, was developed by Venkatesh et al. (2003). The UTAUT indicates that expectancies (achievement expectancy and performance expectancy), social power and an enabling environment influence customers’ usage intention and use behaviour (Venkatesh et al., 2003).

2.6. Conceptual Framework

Having discussed fundamental aspects of AI, chatbot banking and machine learning, coupled with relevant SERVQUAL and technology theories, a springboard has been laid for this study. The theorising already done provide the basis for the use of a deductive approach to the direct effects of chatbot banking on CX in the emerging market context. Reliability and responsiveness were adapted from SERVQUAL and then the other two constructs, perceived benefits of chatbot and perceived ease of use of chatbot were extracted from TAM and UTAUT theories. The four variables were the independent variables of the study whilst customer service was the dependent variable. These relations produced the four hypotheses which were tested in this study as illustrated in Fig. 1.1.

The conceptual model posits that CX is directly predicted by chatbot banking’s reliability, responsiveness, benefits and easiness of use.

2.6.1. Chatbot Banking’s Reliability and Its Link to CX

In chatbot banking, reliability is pivotal to the provision of expected and promised service to enhance CX (Asogwa et al., 2014). The service must be dependable and customers need maximum security when transacting (Suhel et al., 2020). Chatbots must consistently render the expected service for them to be adjudged as reliable (Marković et al., 2015).

The reliability of chatbot banking is very crucial to business (Makudza, 2021). Reliability cascades to optimum customer satisfaction, enhanced customer trust, total customer loyalty and evangelism as well as heightened purchase intention. There are two underlying constructs of reliability: namely, assurance and the ability to empathise (Khan & Rabbani, 2021). Chatbots are there to provide customer

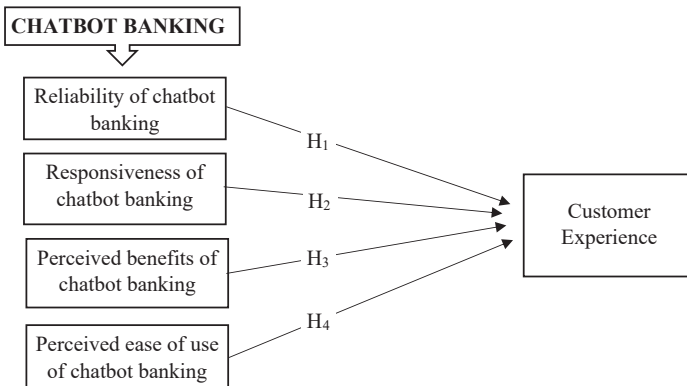


Fig. 1.1. The Conceptual Framework.

solutions to the satisfaction of the customer (Cancel & Gerhardt, 2019). Suffice it to say, the success of chatbots hinges on being trustworthy, system availability and adaptability to changing circumstances (Chung et al., 2020). Moreover, Chung et al. (2020) elucidated that the reliability of chatbot banking entails the provision of accurate and precise information to customers at the right time.

However, digitalisation complicates issues relating to the security of such individualised information (Zumstein & Hundertmark, 2017). Decision trees have improved chatbot's customer management to be much better than human tellers (Trivedi et al., 2019). At the same time, CX can be influenced by the promptness of service, the accuracy of the information, and SERVQUAL. Hence, reliable chatbots help to exceed customer expectations (Hildebrand & Bergner, 2019).

It is therefore hypothesised that:

H_1 . There is a positive relationship between reliability of chatbot banking and banking CX.

2.6.2. Responsiveness of Chatbots and CX

Asogwa et al. (2014) revealed that the responsiveness of chatbot banking influences CXs. Makudza (2021) defined positive CXs as when a customer gets a response when it is needed. For example, HSBC Bank's chatbot offers prompt customer responses which results in good CXs (Suhel et al., 2020). Chatbot banking also ensures that customers are offered personalised services speedily, efficiently and in a secure environment (Alt et al., 2021).

Responsiveness is regarded as the speed of delivering a service (Trivedi et al., 2019). A business is viewed as responsive when it is willing and able to attend to customer needs at the minimum possible time and or inconveniencing the customer (Khan & Rabbani, 2021). Roy and Naidoo (2021) concluded that customers assess the chatbot's responsiveness based on their ability to respond quickly. All the same, CXs are enhanced when the chatbot offers instant feedback (Chung et al., 2020). Thus, customers perceive a business to be more responsive when its chatbot offers fast and secure responses. Automated chatbot response systems that are offered by some banks are an attempt to improve responsiveness.

Steward Bank (2022) explained that their chatbot (Batsi) is readily available to assist customers. Lin et al. (2022) alluded that the use of chatbots in collaboration with human call centres improves business responsiveness which leads to positive CXs. Thus, the study presents the following hypothesis:

H_2 . Responsiveness of chatbot banking positively and significantly impacts CX.

2.6.3. Perceived Benefits of Chatbots and CX

Moriuchi et al. (2021) appreciated the perceived benefits of using chatbots in the banking industry. Ramesh and Chawla (2022) defined perceived benefits as one's

perception of the efficacy of chatbots in improving the bank's responsiveness and ultimate CXs. The perceived benefits influence the customers' attitudes towards the use of chatbots. [Khan and Rabbani \(2021\)](#) concluded that the customers' perception of the benefits that they derive from the use of chatbots influences their attitude towards using them in their banking activities. Consequently, the perceived benefits influence the customers' attitude towards the use of chatbots.

[Jindal et al. \(2020\)](#) noted that the perceived benefits include personalised interaction and the provision of plausible services that meet the customers' needs. Such perceived benefits also determine the customers' intention to use chatbots and subsequent experiences ([Ramesh & Chawla, 2022](#)). [Eren \(2021\)](#) concluded that organisations should emphasise the benefits derived from the application of chatbots in banking activities.

Through chatbots, banks can conveniently offer their services 24/7 ([Lin et al., 2022](#)). It also enables banks to reach customers that are geographically dispersed ([Khan & Rabbani, 2021](#)) through the use of the Internet. [Ramesh and Chawla \(2022\)](#) also explained that chatbots facilitate digital interaction between banks and customers which facilitates prompt tailor-made responses. [Lin et al. \(2022\)](#) also concluded that chatbots enable banks to handle customer complaints and queries quickly and efficiently which enhances CXs. The chatbots border on AI and this helps banks to notify customers with updated financial data. This helps customers to make financial decisions using real-time data, thus improving CXs ([Moriuchi et al., 2021](#)).

The study thus suggests that the perceived benefits of chatbots directly impact CX. Thus, the following hypothesis is presented:

H_3 . Perceived benefits of chatbot banking positively and significantly impact CX.

2.6.4. Perceived Ease of Use of Chatbots and CX

One of the characteristic features of chatbots is usability. [Cancel and Gerhardt \(2019\)](#) defined usability as the simplicity of conducting banking activities effectively and adequately through the use of chatbots. The simplicity derived from using chatbots when conducting banking activities improves customers' banking experiences. Chatbots enable banks to avail their products and services on e-commerce ([Trivedi et al., 2019](#)). This enables customers to access and use banking services easily at any given time and location ([Jindabet et al., 2020](#)).

[Marandu et al. \(2019\)](#) also explained that usability relates to the ease of use of a particular system, that is, the extent to which the system is friendly to users. [Makudza \(2021\)](#) reinforced this assertion by concluding that users view a system as usable when minimum physical and cognitive skills are applied when transacting using the system. In situations when the chatbot is viewed as intricate, the customers' experiences will be distorted. Empirical evidence supports the notion that the perceived easiness of use of AI drives the behavioural intention to adopt