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Online Banking among Jamaicans during the 2020 COVID-19 Pandemic

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Abstract

Introduction: The information era began in the mid-20th century with the coming of the third industrial revolution, characterized by the emergence and usage of computer technology and peripheral devices and equipment in conducting business and personal transactions. This was amplified with the ushering in of the fourth industrial revolution: the emergence of the internet and digital networking of computers. The benefits and advantages of digital banking include the ease of use and access and explains greater volume of transactions unlike in other eras. However, people fear technology in banking because of the high prevalence of internet banking frauds.

Objectives: This study seeks to: 1) evaluate perceived usefulness of technology and ascertain whether this facilitates greater acceptance of online banking, 2) assess perceived ease of use of technology and whether this determines acceptance of online banking, 3) determine whether security and confidentiality of information facilitate acceptance of online banking, and 4) evaluate the quality of internet connectivity and whether this affects acceptance of online banking.

Methods and materials: A correlational research design was used for this study. The researchers examined how six variables (security and privacy, perceived enjoyment, perceived ease of use, perceived usefulness, internet connectivity, and amount of information) were likely to influence a single dependent variable (use of online banking). Using a population of 1,091,336, a 95% confidence interval, and a 3 % margin, the actual sample size for this research is 1,067 respondents.

Findings: The study found a positive statistical correlation ($r_{xy} > 0$) among perceived usefulness, perceived ease of use, perceived enjoyment, amount of information, and internet connectivity. Of the six variables examined in this study, online/internet banking is influenced

by three correlates (amount of information, perceived ease of use, and perceived usefulness). People's decision to use internet banking is positively influenced by perceived ease of use which has the most influence on using internet banking (Adjusted R^2 = 15.1%).

Conclusion: The issue of COVID-19 pandemic has reiterated the importance and value of internet/ online banking to transact economic/ financial businesses because of the promulgated social distancing which is to reduce the spread of the virus.

Keywords: Financial institutions, efficient, information technology, internet banking, TAM.

Introduction

The information era began in the 20th century and characterizes the usage of computer technology and peripheral equipment. This era of computer technology and other devices are widely used in conducting business and personal transactions comparing to previous eras (Bitner, 2001; Aron, Castaneda, & Koralik, 2006; Fleming & Artis, 2010; Hetling, Watson, & Horgan, 2014; Muhleisen, 2018). According to Hetling, Watson, & Horgan (2014), "A growing number of state welfare agencies are using the Internet to communicate with potential and current clients. Although public management benefits are clear, little is known about client perspectives" (p. 519).The usage of technology is not limited to state-own labour organizations for communication (Hetling, Watson, & Horgan, 2014); but it is also used in consumer shopping (Yasav, 2015) and banking (Aboelmaged, 2011; Cavus, &Chingoka, 2015; Ghaziri, 1998; Polatoglu, & Ekin,2001; Mills, Tennant, Mansingh, &Rao-Graham, 2013; Ndubisi, Chan, & Chukwunonso, 2004). Ghaziri (1998) opined that the usage of computers has changed the landscape in banking and offers more expectations to bank customers, which includes mobile banking (Zhou, Lu, & Wang, 2010; Aboelmaged and Gebba, 2013; Tan, 2014; Shaikh, and Karjaluoto, 2015).

The benefits and advantages of digital banking include theease of use and access and explains greater volume of transactions unlike in other eras (Safeena and Date, 2015). Mehrotra (2014) found that many Malaysians, Australians, Singaporeans, and Hong Kongese use this system for business transactions, which is exponentially more than in decades ago, and this supports a study on the economics of technology on banking (Berger, 2003). In fact, Mehrotra (2014) contended that:

We are now living in an era of digitisation, inhabited by the digital natives of Generations Y and Z. Generation Y is the first cohort to grow up with the constant presence of computers at home and with access to over 250 cable television channels. On the other hand, Generation Z enjoys high access to technology from birth and is even more accustomed to the lifelong use of communication and media technologies such as the Internet, instant messaging and mobile.

As they come of age, these two demographic cohorts are likely to demand ubiquitous access to digital products and services. With Generation X becoming increasingly digitally-savvy as well, the majority of the population is expected to be technologically-adept by 2025 (Mehrotra, 2014, p. 2)

On examination of the findings and comments by Mehrotra (20014), it was revealed that technology usage is widespread among all generations including the elders in Asia and Australia (baby boomers, those people who were born before the 1960s). The widespread usage of technology in customer shopping and banking is not limited to the previously mentioned ethnicity (Daniel, 1999; Berger, 2003; Magotra, Sharma, & Sharma, 2018) and there are benefits as well as threats that must be taken into consideration in evaluating technology adaptation and usage in consumer and business transactions (Major Organized Crime & Anti-Corruption Agency, Jamaica Police Force, 2019; Robinson, 2000; Poon, 2008; Qureshi, Zafar, & Khan, 2017; Vox, 2017; Wilson-Harris, 2019). A study by Qureshi, Zafar, & Khan (2017) found that one in every two Pakistanis used internet banking, suggesting that there are some risk averse people in society, and this extends beyond Pakistan **(**Mostafa and Eneizan, 2018; Siyal, Donghong, Umrani, Siyal, & Bhand, 2019). The non-users of internet banking were as high as 80 per cent among a group of 400 South African shoppers in a cross-sectional descriptive research design (Govender, & Wu, 2013). Despite the factors accounting for adaptation and non-adaptation of technology in banking (Liao, & Cheung, 2002; Wang, Wang, Lin, & Tang, 2003), internet banking plays a critical role in financial transactions and increased prevalence of banking transactions (Yuen, Yeow, Lim, & Saylani, 2010; Khan, Hameed, & Khan, 2017; Perera, 2018).

Globally, during the past decade, online banking acceptance has rapidly increased (The Finnish Banker's Association, 2004; Hosein, 2009). Studies have empirically found that approximately 74% of the private banking customers in Finland are regular users of internet banking services (The Finnish Banker's Association, 2004; Hosein, 2009). From 1995 to 2005, the percentage of internet users in the USA had risen from 13% to 42 and 43% respectively (Fox and Beier, 2006). Owing to the importance and proliferation of internet banking across the globe, Banking journals, for example, the International Journal of Bank Marketing, the Journal of Finance and Bank Management, and the Journal of Banking and Finance to name a few, have devoted special issues on the topic (The Finnish Bankers Association, 2004). As such, this explains the exponential rise of studies in the area of online banking (Karjaluoto *et al*, 2002;Robinson, 2000; Liao, and Cheung, 2002; Mukherjee and Nath, 2003; IAMAI report on online banking 2006).

Although online banking provides customers and shoppers with the ease of transacting businesses as well as the reduced costs (Hosein, 2009), researchers have examined the attitude of consumers on the usefulness and willingness of this system (Liao, and Cheung, 2002). A rationale that explains evaluating consumers' and customers' attitude towards using online banking is because of fear of change and situations that have occurred in the past using

the online banking system (Jamaica Observer, 2018a; Marius, 2019). In 2019, National Commercial Bank undergo a period in which there were challenges in online banking system that people were unable successful transact online banking (Marius, 2019). Despite this reality, there is an increased number of Jamaicans utilizing online banking (Jamaica Observer, 2018a) as well as in the wider Caribbean (Robinson and Moore, 2010); but there is clear case of unwillingness among customers of various banks (Henry, 2019). Yet, no empirical study emerged that evaluates people's use of technology and how this influences their transaction behaviour in the banking sector in Jamaica. The gap in literature accounts for the rationale at this time for the current research. Hence, the purpose of the study is to evaluate to what extent peoples' acceptance and use of technology is being driven by the banking sector or if this use and acceptance is as a result of the demands placed on financial institutions by their customers to become more efficient that people are using technology to conduct business transactions. As such, we hope to gain additional insight into the factors that influence acceptance and use of technology by the Jamaican consumer and use these outcomes to gain a competitive edge in the marketplace during the Corona virus (COVID-19) pandemic. Therefore, some research hypotheses were examined that provided a framework for the current study. These are:

- H1: Perceived usefulness will have a positive effect on consumer acceptance of online banking.
- H2: Perceived ease of use will have a positive effect on consumer acceptance of online banking.

Perceived enjoyment

- H3: Perceived enjoyment has a positive effect on consumer acceptance of online banking.

Amount of information on online banking

- H4: The amount of information regarding online banking has a positive effect on consumer acceptance of online banking.
- H5: Security and privacy have a positive impact on online banking acceptance.
- H6: The quality of internet connection has a positive effect on consumer acceptance of online banking.

Review of Literature

Crotty (2005) used a schema or schematic diagram in explaining a theoretical framework, which accounts for usage by scholars and researchers to explain a research problem. It is in keeping with the literature that this study employed a theoretical framework as it would succinctly capture the problem to be studied.

There are many theories that have been used in information system research. On reviewing the literature, generally, a single theory is normally used as the foundation of a study.

However, it is clear from examining theories on online banking that a hybrid approach is the popular approach. A hybrid approach is where more than one theoryis employed to evaluate an issue. The rationale for a hybrid approach in research is because no single theory comprehensively explains the issue to be studied. In this case, The Technology Acceptance Model (TAM) will be used along with other theories such as Diffusion of Information theory, Technology, Organization, and Environment, Theory of Reasoned Action, Theory of Planned Behavior, and Decomposed Theory of Planned Behavior. In fact, many contemporary studies have employed the hybrid approach to research online banking including Siyal, Donghong, Umrani, Siyal, & Bhand, 2019; Hosein, 2009; and, Cavus and Chingoka, 2015. However, the TAM is a hybrid model as it encapsulates perceived ease of use and perceived usefulness (Abbas and Hamdy, 2015), which are also included in aspects of the previously mentioned theories. Hence, this study employed TAM but, because of wanting to include other critical factors, other theories were discussed as they provided items for the current research.

At the individual level, the most used theories are the Technology Acceptance Model (TAM) (Davis 1989, Davis, Bagozzi, & Warshaw, 1989; Mathieson 1991, Davis and Venkatesh 1996; Vijayan, Perumal, & Shanmugam, 2005; Hosein, 2009; Cavus, & Chingoka, 2015; Siyal, Donghong, Umrani, Siyal, & Bhand, 2019), the Theory of Reasoned Action (TRA) (Fishbein and Ajzen 1975, Ajzen and Fishbein 1980; Hosein, 2009; Cavus, & Chingoka, 2015), the Theory of Planned Behaviour (TPB) (Ajzen, 1975, 1991; Vijayan, Perumal, & Shanmugam, 2005;Cavus and Chingoka, 2015; Siyal, Donghong, Umrani, Siyal, & Bhand, 2019), and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al 2002; Vijayan, Perumal, & Shanmugam, 2005; Cavus and Chingoka, 2015; Van Winkle, Bueddefeld, Halpenny, & MacKay, 2019; Liu, Maimaitijiang, Gu, et al., 2019).

At the firm level, the Diffusion of Information theory (DOI)(Rogers 1995; Zhang, Yu, Yan, & Spil, 2015) and the Technology, Organization, and Environment (TOE) theory (Tornatzky and Fleischer, 1990; Angeles, R. 2013; Awa, Ukoha, &Igwe, 2017) framework most readily come to mind. Most studies on information technology adoption at the firm level are derived primarily from these two theories. At the individual level, individuals are possessing different degrees of willingness to adopt innovations, and thus it is generally observed that the portion of the population adopting an innovation is approximately normally distributed over time (Rogers 1995). Breaking this normal distribution into segments leads to the segregation of individuals into the following five categories of individual innovativeness (from earliest to latest adopters): innovators, early adopters, early majority, late majority, laggards (Rogers 1995). The innovation process in organizations (firm level) is much more complex. It generally involves several individuals, perhaps including both supporters and opponents of the new idea, each of whom plays a role in the innovation-decision. Based on DOI theory at firm level (Rogers 1995), innovativeness is related to such independent variables as individual (leader) characteristics, internal organizational structural characteristics, and external characteristics of the organization.

Of the above-mentioned theories, at the individual level, the literature shows that the most widely utilized model for the studying of information system acceptance is the TAM. This theory is about people's behaviour to including online banking, which is a matter for developing nations (Mostafa and Eneizan, 2018).

Online banking

Online (or internet) banking is a critical element of this study, one which provides some context for understanding the subject matter for the paper and explains its importance before examining technological theories in determining human behaviour. Hosein (2009) postulated that "Online banking, in this study, is defined as an internet portal through which customers can use different kinds of banking services, ranging from bill payment to making investments. Therefore, banks' websites that offer only information on their pages-without the option to make transactions-are not qualified as online banking services" (Hosein, 2009, p.52).

This system is a technological one that is rejected by some banking-users, and the Jamaica Observer (2018b) indicated that Jamaicans are becoming more receptive to internet banking. Hosein (2009) continued that "The success of internet banking is determined not only by banks or government support, but also by customers' acceptance of it" (Hosein, 2009), which is critical to the usage of this technology-the users' needs (Pikkarainen, Pikkarainen, Karijaluoto, and Pahnila, 2004).

Internet banking is a phenomenon that dates back to the mid-1990s (Hosein, 2009; The Finnish Banker's Association, 2004; Shaikh and Karjaluoto, 2015) and in 2007 mobile banking (U.S. News, 2007) was introduced in an effort to have self-served banking as well as ease of use (Nagaraju, 2015). Many people were born decades prior to the 1990s and so they would not have been socialized to this banking approach. The Finnish Banker's Association (2004) 74 out of every 100 Finnish frequently use internet banking, and 65 out of every 100 Jamaicans have a debit card (Jamaica Observer, 2018b). An associational survey of some 325 internet banking users in the Midwest region of the USA found that 66 out of every 100 of them indicated that they frequently utilize online banking. A study from 1995-to-2005 in the USA found that 43% of Americans utilized internet banking in 2005, which is an increased from between 13-42% in 1995 (Fox and Beier, 2006). From a probability national survey of over 3000 Caribbean nationals from Antigua & Barbuda, Barbados, Dominica, Grenada, Jamaica, Montserrat, St. Kitts & Nevis, St. Lucia, St. Vincent & the Grenadines, and Trinidad & Tobago, Robinson & Moore (2010) found that online banking usage is relatively low in many nations in the Caribbean (**Table 1**), which is not the case in the USA. One of the deductions of Fox and Beier's work was resistance of many Americans in using internet banking despite that the fact that they are in a highly technological milieu. This reality explained internet banking usage as well as the many studies that have emerged since 2003 (Mukherjee and Nath, 2003).

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Table 1.Utilization of Internet Banking Services by Country

Details	**Yes**		**No**		**Total**
Country	Frequency	Percent	Frequency	Percent	Frequency
Antigua and Barbuda	53	39.3	82	60.7	135
Barbados	153	31.0	341	69.0	494
Dominica	28	26.4	78	73.6	106
Grenada	8	14.5	47	85.5	55
Jamaica	342	35.2	629	64.8	971
Montserrat	7	17.5	33	82.5	40
St. Kitts and Nevis	47	35.1	87	64.9	134
St. Lucia	59	27.1	159	72.9	218
St. Vincent and Grenadines	29	20.3	114	79.7	143
Trinidad and Tobago	262	28.1	672	71.9	934

Source: Robinson and Moore(2010, p. 12)

Internet banking is a technological system that is framed by consumer adoption of customers (Hosein, 2009). He continued that there are four factors of consumer adoption of online banking. The four factors are 1) convenience, 2) usability, 3) self-efficacy, and 4) accessibility. People's choice to use online banking is not merely influenced by convenience, and this must be taken into consideration when examining online banking usage. The fact of awareness or knowledge is not solely responsible for consumers' adaptation to engage in online banking transactions (Akinci, Aksoy, & Atilgan, 2004; Clemes, Gan, & Du, 2012; Eriksson, Kerem, & Nilsson, 2005; Gerrard, & Cunningham, 2003;Gerrard, Cunningham, & Devlin, 2006;Liao, & Cheung, 2002; Padachi, Rojid, & Seetanah, 2007;Polasik, and Wisniewski, 2009; Suki, 2010; Wang, Wang, Lin, & Tang, 2003) as other factors must coalesce in determining customer online banking adaptation. The reality is that online banking is made possible through technology and so theories on technology will offer critical insights to the technological phenomenon called internet banking.

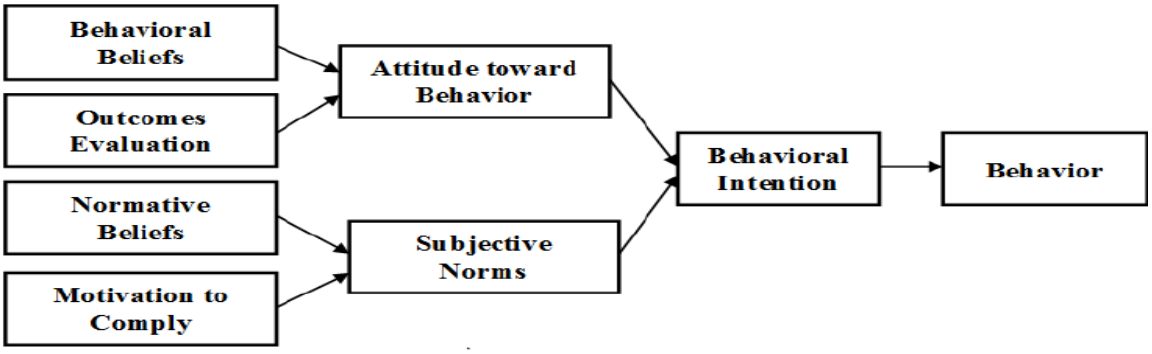
Technology theories

Technology acceptance theories are designed to measure the degree of acceptance and satisfaction to the individuals against any technology or information system but from different points of view, depending on the constructs or determinants which represent their structure. Many models and theories have been developed over the years with many being extensions of others. Models such as the TRA (Ajzen and Fishbein, 1980;Siyal, Donghong, Umrani, Siyal, & Bhand, 2019) which was extended to the Theory of Planned Behavior (TPB) (Ajzen, 1980; Siyal, Donghong, Umrani, Siyal, & Bhand, 2019) which also had an extension to the Decomposed Theory of Planned Behavior (DTPB) (Taylor and Todd, 1995; Siyal, Donghong, Umrani, Siyal, & Bhand, 2019), the Theory of Diffusion of Innovations (DIT) (Rogers, 1995), and the Unified Theory of Acceptance and Use of Technology

(UTAUT) (Davis and Venkatesh, 1996; Davis, 1989) have all played important roles in helping researchers understand consumer behaviour and acceptance of technology.

The Theory of Reasoned Action

The Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975; Siyal, Donghong, Umrani, Siyal, & Bhand, 2019) is one of the most popular theories used and is about one factor that determines behavioural intention of the person's attitudes toward that behaviour (Figure 1). Fishbien and Ajzen (1975) defined "attitude" as the individual's evaluation of an object and defined "belief" as a link between an object and some attribute and defined "behaviour" as a result or intention. Attitudes are affective and based upon a set of beliefs about the object of behaviour (Credit card is convenient). A second factor is the person's subjective norms of what they perceive their immediate community's attitude to certain behaviour (my peers are using credit card and it is a status to have one).It is important to understand that the technology acceptance model (TAM) provides a conceptual framework based on theories in social psychology, namely TRA and TPB, and it is from these two theories that TAM proposed a causal model to explain and predict the acceptance of a given information technology by potential users (Amornkitpinyo and Wannapiroon, 2015).

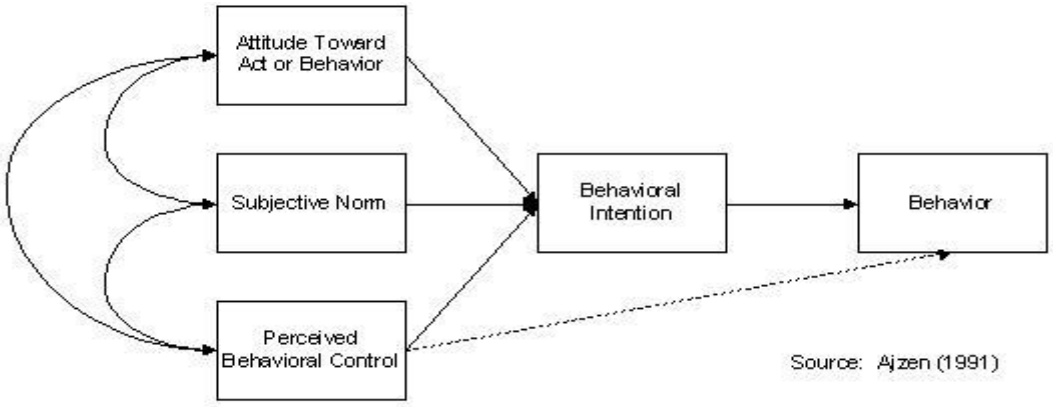


Sources: Ajzen, 1991 and Hackman and Knowlden, 2014

Figure 1.Theory of Reasoned Action

Theory of Planned Behaviour

Ajzen (1991) developed the Theory of Planned Behaviour (TPB) which is about one factor that determines the behavioural intention of the person's attitudes toward that behaviour, which is widely used by current scholars (Neal, Wood, Labrecque, & Lally, 2012; Fazio, & Olson, 2014; Wood, Labrecque, Lin, & Rünger, 2014; Andrew, Mullan, de, et al., 2016; Kan, & Fabrigar, 2017; DeMaria, Sundstrom, Faria, Saxon, et al., 2019). The first two factors are the same as those in the Theory of Reasonable Action (TRA) (accredited to Fishbein and Ajzen, 1975 and is still being used by academicians Trafimow, 2009; Hackman, & Knowlden, 2014), while the third factor, known as the perceived control behaviour, is the control which users perceive may limit their behaviour (Can I apply for the credit card and what are the requirements?).

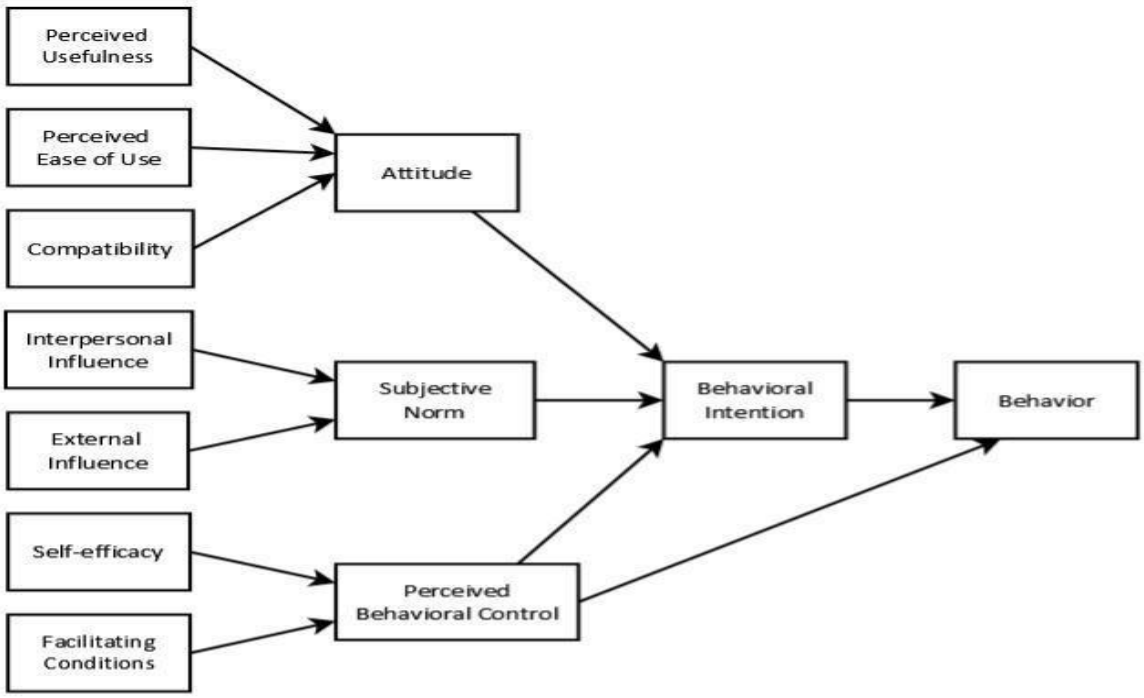


Sources: Ajzen, 1991 & Holmkvist, Karlsson, & Kuossari, 2016

Figure 2.Theory of Planned Behaviour

Decomposed Theory of Planned Behaviour

The Decomposed Theory of Planned Behaviour (DTPB) was introduced in 1995 by Taylor and Todd. The DTPB consists of three main factors influencing behaviour intention and actual behaviour adoption. This model is still being used to examine issues in contemporary context (Moona, & de Pelsmacker, 2015; Tao, & Fan, 2017; Garay, Font, & Corrons, 2019). The factors identified are attitude, subjective norms, and perceived behaviour control. Shih and Fang (2004) examined the adoption of internet banking by means of the TPB as well as the DTPB.



Source: Tao and Fan, 2017

Figure 3.Decomposed Theory of Planned Behaviour

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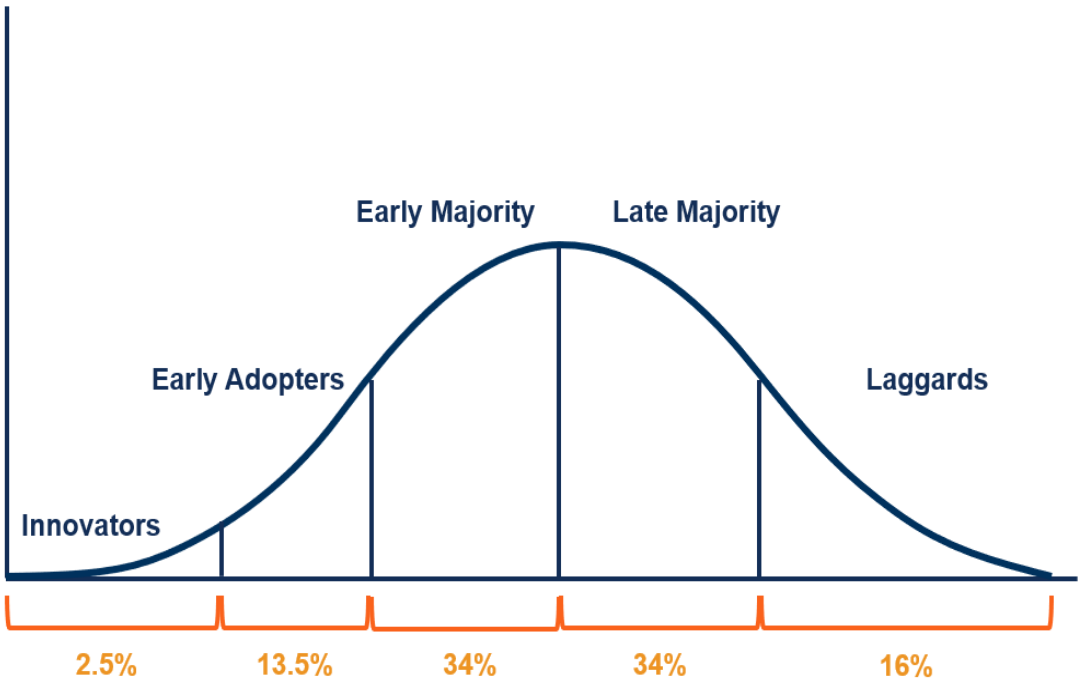
Diffusion of Innovation theory

It is worth noting that Rogers (1995), proposed that the theory of 'diffusion of innovation' was to establish the foundation for conducting research on innovation acceptance and adoption, and this theory continues to hold currency in research (Dearing, 2009; Zhang, Yu, Yan, & Spil, 2015; Dearing, & Cox, 2018). Rogers combined research from over 508 diffusion studies and came out with the 'diffusion of innovation' (DOI) theory for the adoption of innovations among individuals and organizations. The theory explicates "the process by which an innovation is communicated through certain channels over time among the members of a social system" (Rogers, 1995) as shown in figure 3.



Source: Roger, 2003

Figure 3.Diffusion of Innovation theory

Unified Theory of Acceptance and Use of Technology

Venkatesh, Morris, Davis and Davis (2003) studied from the previous models/theories and formed Unified Theory of Acceptance and Use of Technology (UTAUT). The UTAUT has four predictors of users' behavioural intention and these are performance expectancy, effort expectancy, social influence and facilitating conditions. The five similar constructs including perceived usefulness, extrinsic motivation, job-fit, relative advantage and outcome expectations form the performance expectancy in the UTAUT model while effort expectancy captures the notions of perceived ease of use and complexity (Lai, 2017; Dwivedi, Rana, Jeyaraj, et al., 2019). These are important as they help to determine whether customers' intent to use results in the use of the technology.

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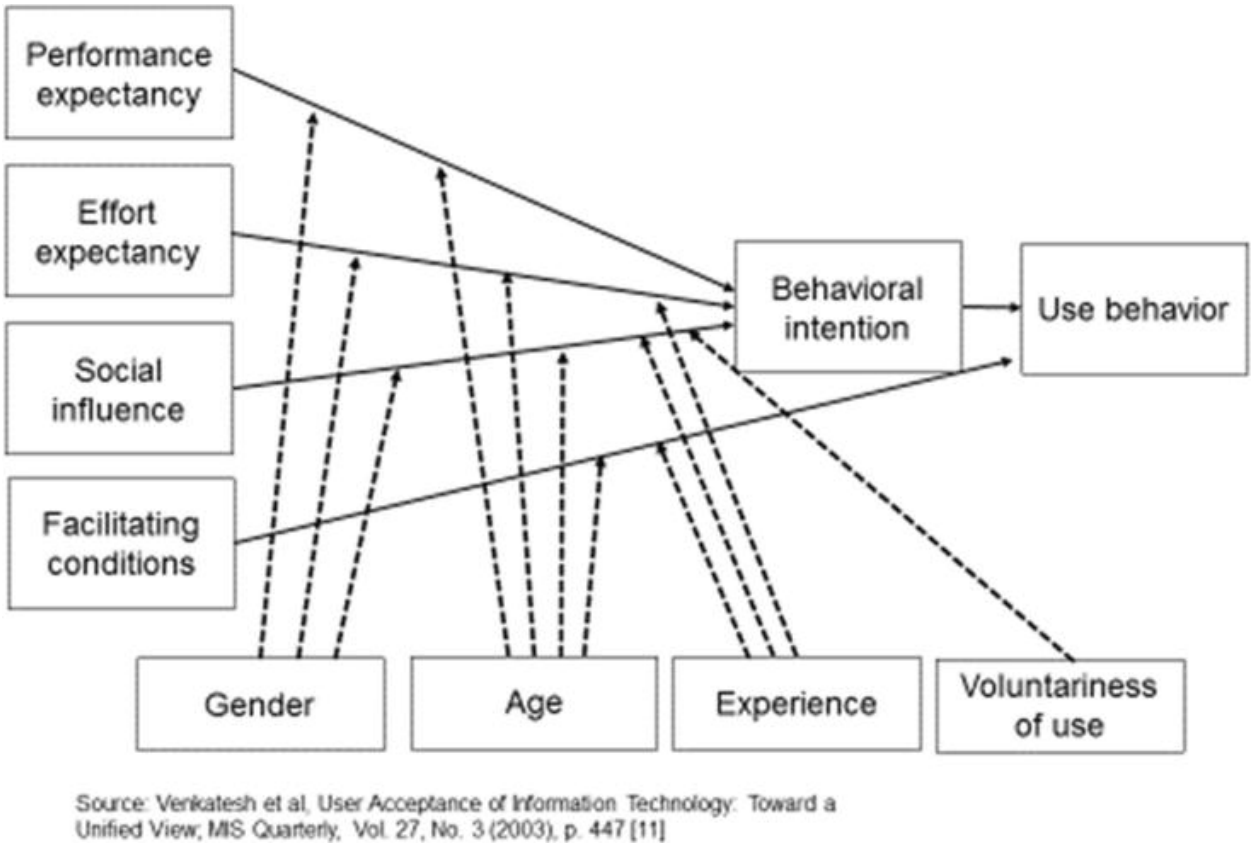


Source: Venkatesh, Morris, Davis and Davis, 2003

Figure 4.Unified Theory of Acceptance and Use of Technology

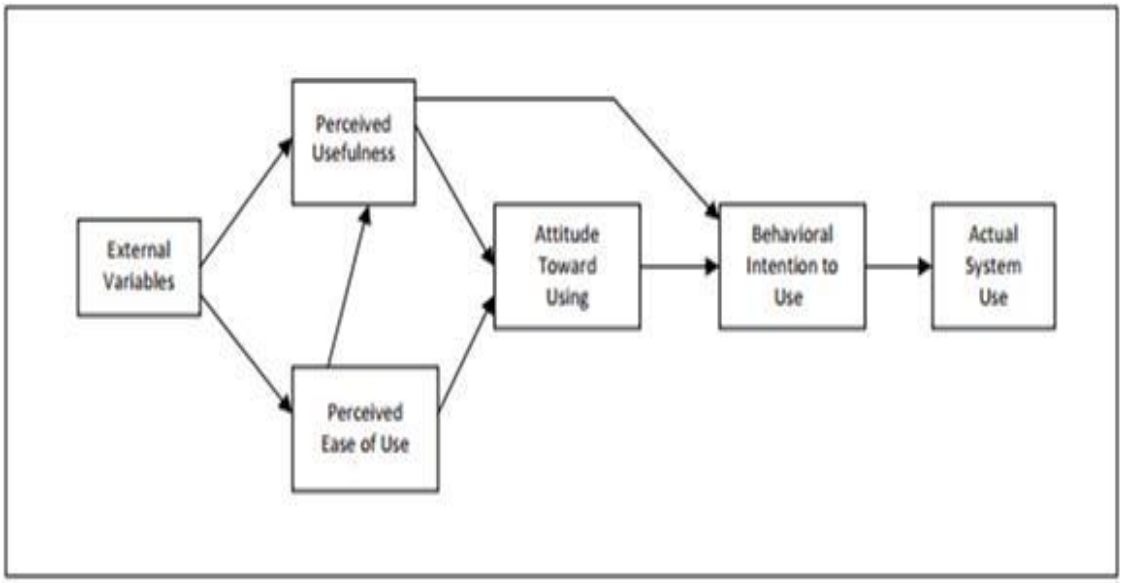
Technology acceptance models (TAM) and related studies

The field of information systems has had a significant contribution to the existence of the Technology Acceptance Model (TAM) (Davis, 1989). While there are many models that can be used for testing system acceptance, the model that has been the most utilized in studying information system acceptance is the technology acceptance model (TAM) (Davis *et al*, 1989; Mathieson, 1991; Davis and Venkatesh, 1996) in which system use (actual behaviour) is determined by two factors; perceived usefulness (PU) and perceived ease of use (PEOU). According to TAM, these two factors are of primary significance for computer acceptance. PU refers to the prospective user's subjective likelihood that the use of a certain application increased his or her performance. Perceived usefulness depends on the banking services offered such as checking bank balances, applying for a loan, paying utility bills, and transferring money (Gerrard and Cunningham, 2003; Chen and Barnes, 2007). PEOU defined as the degree to which the prospective user expects the system to be free of effort (Davis *et al*, 1989).

Factors such as an individuals' age, educational level, type of technology, level of instruction or training given in the use of the technology, presentation of how the individual benefitted from the use of the technology, are some of the factors that impacted on perceived usefulness

(PU). The level of ease in maneuvering the technology, as well as how readily available information is impacted on perceived ease of use (PEOU). These factors have been studied and analyzed by several researchers (Triandis, 1979; Ajzen and Fishbein, 1980; Rogers, 1983; Taylor and Todd, 1995) to name a few.

TAM, which is an extension of TRA, also has an extension to TAM2 (Venkatesh and Davis, 2000). The development for TAM comes through three phases: adoption, validation, and extension. In the adoption phase, it was tested and adopted through a large number of information system applications. In the validation phase, researchers noted that TAM uses accurate measurement of users' acceptance behaviour in different technologies. The third phase, the extension, where there are many researches introducing some new variables and relationships between the TAM's constructs. In 1989, Davis used TAM to explain computer usage behaviour as shown in the figure below.



Source: Davis and Venkatesh, 1996, Hosein, 2009, & Mostafa and Eneizan, 2018

Figure 5.TAM

The goal of Davis' (1989) TAM is to explain the general determinants of computer acceptance that lead to explaining users' behaviour across a broad range of end-user computing technologies and user populations.

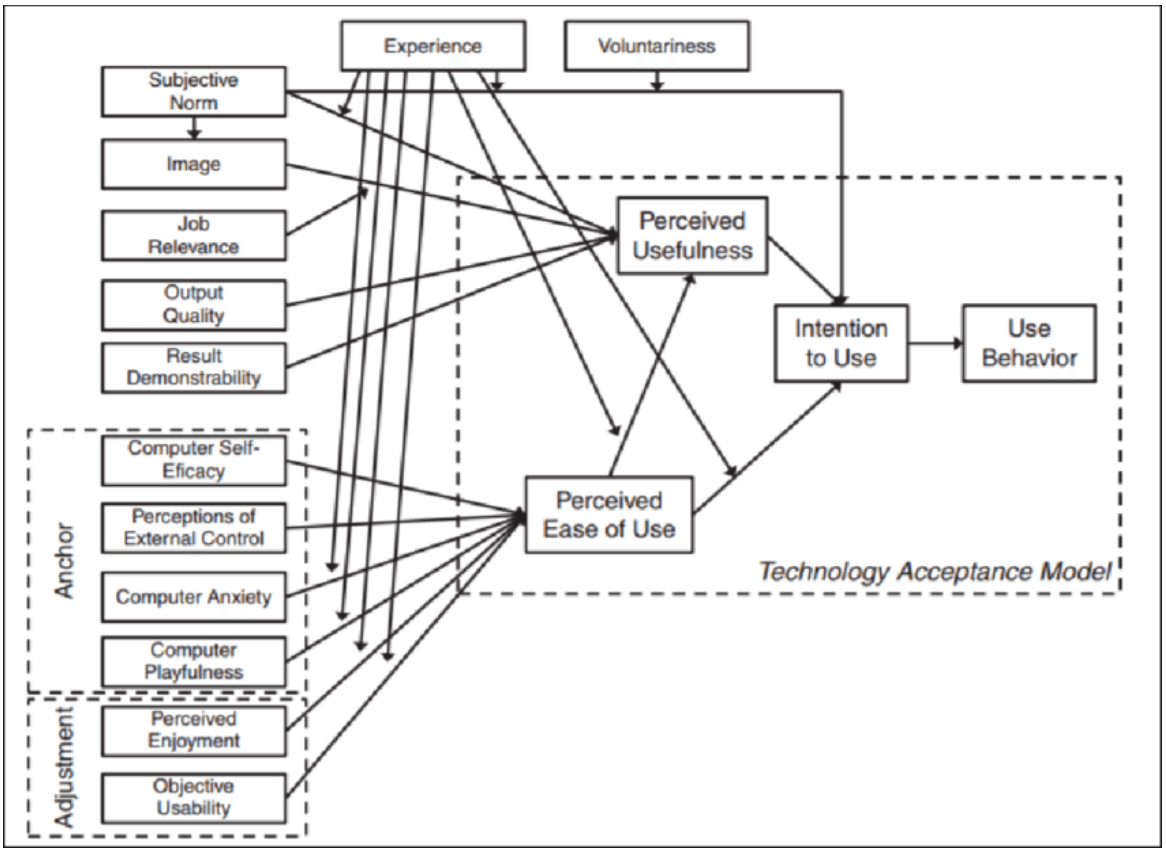
According to Chuttur, the Technology Acceptance Model (TAM) evolved into the leading model in explaining and predicting system use (Chuttur, 2009). Over time, there have been several modificatons to this theory resulting in TAM2 and TAM3. The TAM main variables: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU), feed into the behavioural intention to use the technology.

TAM2 was developed in the information technology field. It was extended from the original TAM (Venkatesh and Davis, 2000) to explain perceived usefulness and perceived ease of use

from the social influence and cognitive instrumental processes' viewpoints. Social influence processes refer to: subjective norm, voluntariness, and image, while cognitive instrumental processes refer to: job relevance, output quality, result demonstrability, and perceived ease of use. Unlike TAM, Venkatesh and Davis inserted subjective norm as an additional construct by adopting from existing TRA and TPB models. Subjective norm has direct relations with perceived usefulness and intention of use. Its relationship with perceived usefulness is moderated by the user experience, while its relationship with intention of use is moderated by the user experience and voluntariness of use.

The extension of TAM to TAM2 by including some constructs from older theories in addition to some moderators to perceived usefulness and perceived ease of use has enhanced the performance of the model (Momani and Jamous, 2017).

TAM2 was further enhanced by Venkatesh and Bala in 2008 and is commonly referred to as TAM3. In TAM3, factors such as the individual differences, system characteristics, social influence, and facilitating conditions all of which are determinants of perceived usefulness and perceived ease of use have been added. In the TAM3 research model, the perceived ease of use to perceived usefulness, computer anxiety to perceived ease of use and perceived ease of use to behavioural intention were moderated by experiences (see diagram on next page).



Source: researchgate.net

Figure 6.TAM 3

The TAM3 research model was tested in real-world settings of information technology (IT) implementations.

A system satisfying user needs reinforces satisfaction with the system and is deemed a perpetual or subjective measure of system success. An older adult who perceives digital games as too difficult to play or a waste of time were unlikely to want to adopt this technology, while an older adult who perceives digital games as providing needed mental stimulation and as easy to learn more likely to want to learn how to use digital games. While TAM has been criticized on several grounds, it serves as a useful general framework and is consistent with several investigations into the factors that influence older adults' intention to use new technology (Braun, 2013).

Methods and materials

This research design was a correlational survey one, which were extensively reviewed by many scholars (Crotty 2005; Neuman 2014; Babbie 2010; Bryman and Cramer 2005). The type of research design was framed from the epistemology, which was an objective one. Hence the researchers reviewed work of Crotty (2005) as he used a diagrammatic representation that guide this paper within an objectivistic epistemology (Figure 7). The research process commenced from the general epistemology, theoretical framework, methodology and method (Crotty, 2005). For this study, an objectivistic epistemology was employed, followed by a positivist theoretical framework and survey research methodology, and then by employing standardized instrumentation, statistical tools for analyses, and adhering to all ethics standards for research. Crotty (2005) opined that those issues previously mentioned are in four schemas, the research process. The four schemas of the research process according to Crotty (2005, 2-4) are encapsulated into a flow chart (See Figure 1). Crotty (2005), contended that a research was guided by the choice of a methodology and method.

The schema of the research process was simply not a unidirectional model (Crotty 2005, 2-4). Crotty (2005) pointed out that the research process begins with an epistemology followed by a theoretical perspective, methodology and method. Embedded in this schema was process of carry out a research and there is stringency to the direction that must be followed, which guided this research process.

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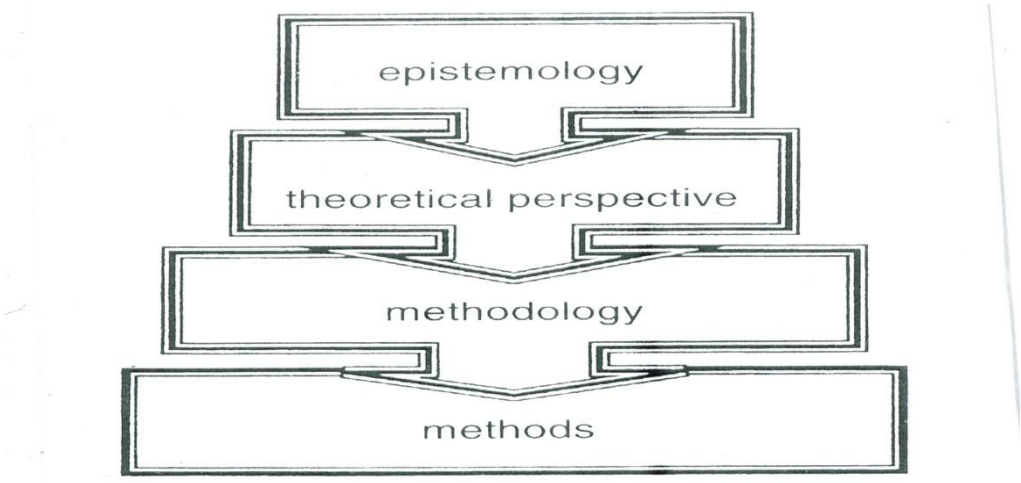

Source: Crotty, 2005, p. 4

Figure 7.Linking epistemologies, theories, methodologies and methods

Objectivism is the epistemology that was used for this study. Embedded in this epistemology were 1) precise measurement, 2) impersonality, 3) statistical assessment of issue, 4) hypothesis testing, and 5) systematic research design. It was based on the objectivistic epistemology of this study, why the research used an objective theoretical framework as this is in keeping with objectivism. The methodology that answered the research question or tested the hypothesis, was survey research methodology. Although the aspect dealt with methodology, it was guided by the epistemology and theoretical framework that feeds into methodology and methods. Hence the justification for survey research methodology because of the objectivistic epistemology.

Survey Research Methodology

Survey research was well documented in the social sciences as a methodology which came from positivism (Crotty, 2005). This methodology required conceptualization and measurement of phenomenon as it seeks precision, objectivity and sometimes the forecasting of results (Blalock, 1963, 1964, 1967, 1971; Blalock and Blalock, 1968). Blalock (1982) opined, “Conceptualization involves a series of processes by which theoretical constructs, ideas, and concepts are classified, distinguished, and given definitions that make it possible to reach a reasonable degree of consensus and understanding of the theoretical ideas we are trying to express” (p. 11). This suggested that survey research can be used to formulate and construct theories and/or laws, extensively evaluate issues and understand general issues. Blalock (1982) noted that “By measurement, we refer to the general process through which numbers are assigned to objects in such a fashion that it is also understood just what kinds of mathematical operations can legitimately be used” (p. 11). As such, survey research was built around conceptualization, measurement and objectivity before it can be used to establish laws and/or theories. Crotty (2005, 6) aptly summarized the research process using objectivistic

epistemology in a diagrammatic manner highlighting the rationale for conceptualization and measurement in survey research:

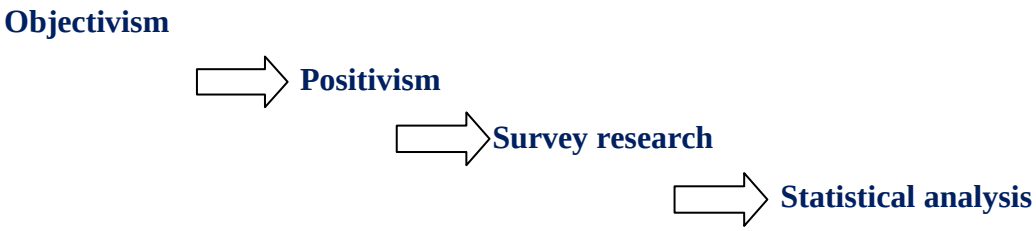

Figure 8.Four elements of objectivistic epistemology

There was no denial that objectivism can be used to formulate social theories and/or laws, which can be accommodated by way of survey research and sometimes advanced multivariate statistical techniques. The present study sought to generally understand a phenomenon in attempting to 1) test hypotheses, 2) generalize, 3) use scientific proposition and 4) guide policy formulations; hence, the use of conceptualization and measurements, sampling, data analysis, and document reviews, and explain the choice of survey research methodology as this is in keeping with the science of research and not the mere collection and interpretation of data.

Embedded in Crotty's objectivistic schema was survey methodology, which is widely used by social scientists. Survey research allowed for the falsification of propositions, generalization and theorizing because of its emphasis on 1) conceptualization, and 2) measurement (Kuhn, 1996; Blalock, 1982; Rosenberg, 1985). Rosenberg's opined that "A proposition is scientific if and only if it is falsifiable" (Rosenberg, 1985, 1), suggesting a schema, gradual development of issues and a systematization in the study of any science.

Research design

In keeping with an objectivistic perspective, this research, employed a correlational research design (Rea and Parker, 2014; Neuman, 2014; Babbie, 2010; Creswell, 2013). For this research, the researchers examined how six variables (security and privacy, perceived enjoyment, perceived ease of use, perceived usefulness, internet connectivity, and amount of information) were likely to influence a single dependent variable (use of online banking).A correlational design was suitable for this study as Creswell (2013) emphasized that correlational designs provided a means for researchers to explain and relate variables; which is done as purported by Vogt (2007) as a means of investigating the relationship between the variables. Similarly, Fraenkel and Wallen (2003) asserted that correlational research design studies two or more variables to discover relationships among them but it does not try to find any influence, or attribute cause but rather explains the degree to which the variables are related. Likewise, Barber and Korbanka (2003) further reiterated that correlation do not imply causality between variables, but rather disclose an association that may be useful for making future predictions. Therefore, correlation research design was suitable for this study as

correlation designs employ a quantitative approach with multi subjects and without manipulation of the independent variables (Creswell, 2013). This allowed for the collection of cross-sectional data from a large group of people of different sociodemographic background, and as such test this hypothesis, which is 'There is no statistical relationship between people's use of technology and their transaction-behaviour in the banking sector in Jamaica'.

Population

The logic of sampling was to make inferences about the population (Berg, 2001; Goel, 1988), which requires a well-defined and/or stated population. For this research, the population was peoples who transact businesses with a bank in Jamaica between November 2019 and August 2020. The Bank of Jamaica (BoJ) contended that 60 per cent of Jamaicans received their wages (or salaries) by cash, which means 40 per cent of them utilize the online banking system (BoJ, 2017). Using the population figure for Jamaica, 2,728,654 (estimated for 2017), the population of using online banking is at least 1,091, 336 (female, 550984; male, 540,352).

Sampling

Initially, the researchers wanted to design a comprehensive sampling frame that would allow for the probability sampling of people who use the banking sector, for the purpose of generalization. Using a population of 2,728,339, a 95% confidence interval, and a 3 % margin, the actual sample size should be 1,067.

Table 1.Population of Jamaica for 2017 and calculated sample for current study

Parish		**2017**		
	Population	**Pop (in %)**	**Sample**	**Sample (in%)**
Kingston & St Andrew	670,183	24.6	262	24.6
St Thomas	94,997	3.5	37	3.5
Portland	82,694	3	32	3
St Mary	114,937	4.2	45	4.2
St Ann	174,309	6.4	68	6.4
Trelawny	76,028	2.8	30	2.8
St James	185,810	6.8	73	6.8
Hanover	70,309	2.6	28	2.6
Westmoreland	145,718	5.3	57	5.3
St Elizabeth	151,932	5.6	60	5.6
Manchester	191,999	7	75	7
Clarendon	247,854	9.1	97	9.1
St Catherine	521,569	19.1	204	19.1
Total	2,728,339	100	1,067	100

The number of people in each parish was determined by the proportion of people in 2017 population. A detailed description of the sample is presented in Table 1, and the people were conveniently selected to participate in this study based on the sample frame presented in the Table 1. In addition, an additional 10% of sample size (n=107) was added to all the parishes in order to maintain the error and confidence interval. The response rate was 93.9% and this allowed for meeting the sample frame of 1,067 people.

Conceptualizations and Operationalization

Age: The number of years an individual has been alive.

Gender: The social role an individual is expected to play in society as a result of being male or female.

Online banking (i.e. internet banking, e-banking or web banking) is the employment of any method of banking that allows for the conducting of business transactions by way of an electronic device or via the internet (Hosein, 2009; Govender and Wu, 2013; Fo and Ak, 2015; Mostafaand Eneizan, 2018)

Security denotes the protection of data from theft or fraud. For the bank, this is safeguarding the information on clients as well as money ((Scotiabank, 2019; Jamaica National Commercial Bank, 2019; Sagicor, 2015; Holmkvist, Karlsson, & Kuossari, 2016).

Privacy means safeguarding the identity of the user (Scotiabank, 2019; Jamaica National Commercial Bank, 2019; Sagicor, 2015)

Internet connectivity is ability of people to access and use the internet by way of computer terminals and other devices for transactions. In this research, internet connectivity is the usage of the internet to transaction business with and through the bank(Hosein, 2009)

Ease of use deals with the simplicity in which the technology and concepts can be understood so that the intended user is able finish his/her task with minimal hassle (Segars and Grover, 1993; Venkatesh, 2000; Nugroho, Dewanti, & Novitasari, 2018).

Using online banking is the involvement in any of the following transaction: bank balance enquiry, paying of bills, money transfer to other accounts, enquiry on bank statements, obtaining paperless bill statements, and any enquiries of mortgage, loans, and savings account online (Jamaica National Commercial Bank, 2019).

Data Collection Procedures

It was recommended that protocol must be observed when any research is being carried out. Within this, the researchers sought consent from the intended subjects as well as the University of the Commonwealth Caribbean. Therefore, the researchers sought permission from University of the Commonwealth Caribbean to ensure that all ethical considerations

were adhere to. Secondly, consent was sought from the Banks' Managers. The researchers wrote and hand delivered a letter seeking permission to the Managers of the Branch of the Bank outlining the purpose of the research and the potential sample as well as the period of the study. Information regarding the researchers' place of study and topic was disclosed and the researchers requested the consent from the managers to use their clients to answer a standardized questionnaire.

Additionally, prospective participants for were given a written informed consent or this was read to each client. Each client was therefore informed about the nature and purpose of this study as well as their rights and responsibilities in the process. Furthermore, only those who consented to the research was given a questionnaire or one read to them for completion.

To assure the respondents of their free will and choice, each client who participated in the research, was told that he/she is not obliged to complete the questionnaire and have the option to discontinue answering the questions at any point they wish to do so. Therefore, participants were reminded of ethical issues that were observed as they were assured of this.

The questionnaires were issued face to face at a time that was deemed convenient to clients, during waiting time or completion of transaction-time. Initially, questionnaires were prepared by the research team, with the intent to distribute and have participant complete this instrument. Owing to the COVID-19, the research decided to use Survey Monkey instead the early standardized printed questionnaire. The initial survey was converted into Survey Monkey, and this was sent to prospective participants' emails and/or WhatsApp numbers. Thus, upon the completion of the data collection for the study, the dataset was downloaded from Survey Monkey. In addition to the aforementioned issues, the research team used the licensed version of Survey Monkey as this would accommodate the volume of items for the study. Data were collected for the months of March 1 to June 1, 2020.

Instrumentation

To provide data for the quantitative study, a standardized instrument (survey) was used as it allowed for the testing of an empirical theoretical model. A survey provides for the collection of vast numbers of data on any issue and for cross comparison of the results of the current study against those in other geo-political areas. A questionnaire was the choice instrument to gather data from people who transact business with various banks in Jamaica. The questionnaire was mostly close-ended items and it was written in English as this is general language in Jamaica. There were 14 questions on the instrument, with only one being an open-ended item. The questionnaire was sub-divided into three section-Section One (demographic data); Section Two (Use of Technology) and Section Three (Banking-Transaction Behaviour). Four items are contained in Section One (1-4) and items in Section Two (Questions 5-11) as well as Section Three (Questions 12-18). Section Three comprises of Likert Scale Questions, where the responses were never, often, sometimes and rarely.

The items on the current instrument were adaptation and modifications of past studies by Wang, et al. (2003), Grabner-Krauter, & Faullant (2008), and Holmkvist, Karlsson, & Kuossari (2016). The questions on perceived ease of use and usefulness were taken from the work of Wang, et al. (2003). Those on use of internet banking, gender, age, education, internet access came from the work of Grabner-Krauter and Faullant (2008). The research by Holmkvist, Karlsson, & Kuossari (2016) followed for the inclusion of items of information and knowledge on online banking, privacy and security of online banking, age, and gender.

The standardized instrument allowed for the 1) measurement, 2) statistical analyses, and 4) objectivism. According to March & Bourne, "The objectivist epistemology holds sacred logic, precision, general principles, principles of verification, the standard of rigor, gradual development, establishment of laws, principles, theories and apparatuses …" (March and Bourne, 2011, p. 260), which are the rationale for the survey research and the statistical analyses that are embedded there in.

Prior to administering the final data instrument, the instrument went through a process of testing, retesting, and modifications in keeping with issues raised in the vetting and pilot testing process. Initially, the researcher construed several items that would adequately collect data that could allow for the testing of the hypothesis and addressing the objectives of the study. The items were vetted by a scholar in the area from the University of the Commonwealth Caribbean, who offered advice and suggested how the questionnaire may be improved. On the second occasion, the researchers sanctioned the overall items and asked that the instrument be pilot tested.

The researchers carried out a pilot test using the modified questionnaire. The scale items on the questionnaire were sometimes modified to be more reflective of the Jamaicans' culture, including Language and Lingo. The pilot testing was carried out with 10 people who utilize the banking system in Jamaica.

The entire process of instrument design was aided by Rea and Parker's book on designing and conducting survey research (Rea and Parker, 2014) as well as a copy of cross-sectional survey conducted by Powell, Bourne, & Waller (2007) on probing political culture in Jamaica. All the items from the instrument were taken from various published theories on online (internet) banking including TAM, UTAUT, and so on.

Pilot testing and Retesting of instrument

The pilot testing and retesting of the instrument are critical to the research process, and so these were done in keeping with the literature. Kuhn (1996) postulated that science not only embodies objectivity, logic, and precision; but it can be applied to the social sciences and these are the reason for any discipline being a science. This means that science is a gradual and systematic development of scientific method (Rosenberg, 1985). As such, we must understand the meaning behind people behaviours which can only be found through 1)

observation, 2) experimentation, 3) interviews, and/or 4) survey research. Of the issues, the current work uses a survey instrument. Having collated the items from different sources with cultural disparities from Jamaica, the instrument was test for 1) clarity, 2) understanding of items, 3) language usage and context, 4) measurement and conceptualization, and 5) challenges and likely problematic issues that are inherent in the way the questions are phrased.

The collated survey questionnaire was pilot tested on a similar group of people with similar characteristics to the actual sample. Modifications were made to the initial instrument based on the feedback given by the participants. In addition to the participants, the questions were vetted by 1) managers, 2) a scholar in management, 3) researchers, and 4) a methodologist. Their input was fed back into a modified questionnaire in addition to those offered by the participants to formulate a modified instrument. The modified instrument was pre-tested on another group with characteristics of the sample, and their comments were feed into the process to form the final instrument. The overall time taken to complete the instrument was 20 minutes (± 10 minutes). Some adjustments were made to the final instrument based on queries concerning things such as word usage and general lack of understanding. The modified instrument was retested with another group of workers at a different organization. Finally, a modified questionnaire emerged that was uploaded in Survey Monkey, and then distributed to prospective participants.

Validity and Reliability

To achieve validity and reliability of the questionnaire, a pre-test of the instrument was done among five (5) academicians, statisticians, and human resource experts to determine ambiguity of questions, completeness of response, and the time required to complete the survey. Validity was solicited from participants to compare the researchers' descriptive results with their lived experiences. Validity was also obtained after gaining approval of questionnaire from the research supervisor or the Director of Studies and Research at the University of the Commonwealth Caribbean with expert knowledge of the problem being researched.

The validation and reliability testing are crucial aspects to the scientific process (Babbie, 2010; Neuman, 2014). For any research project to be credible, its reliability and validity must be clearly established (Neuman, 2014; Kuhn, 1996; Balashov and Rosenberg, 2002)). As such, the necessary steps taken to ensure that the proposed project has both internal and external validity and internal and external reliability on the instrument used are outlined. According to Wiersman (2000), reliability is concerned with the dependability and consistency of the methods, conditions, and results while validity deals with the accurate interpretability of the results and the generalizability of the results.

In order to ensure a high response rate on the questionnaire, the researchers followed all appropriate sets as outlined by Neuman (2014) and Babbie (2010). They outlined that the

researcher should design the instrument followed by testing it on a similar sample, analysis the results looking for ambiguity and language issues that complicated interpreting the results, make all the necessary change of the initial instrument. So, for this study, the researchers employed the same steps as recommended by Neuman (2014) and Babbie (2010).

For this study, reliability analysis will be done by way of factor analysis (Principal Component Analysis). This will allow for the accepting or refutation of the various concepts as outlined in the survey instrument.

Data Analyses

For this survey instrument (questionnaire), data were stored, retrieved and analyzed using the Statistical Packages for the Social Sciences (SPSS) for Windows version 25.0 (SPSS Inc; Chicago, IL, USA). Descriptive statistics were computed on the data as well as percentages and frequency distributions. Statistical significance for this study was a p-value less than or equal to five percentage points (≤ 0.05)-two-tailed. In order to ensure that all the assumptions of Ordinary Least Square (OLS) regression analysis were examined and maintained in this study, the researchers examined 1) autocorrelation, 2) linearity and 3) collinearity (Lewis-Beck, 1980) as well as meeting the requirement of the sample size for OLS (Green, 1991; Maxwell, 2000). For this study, multicollinearity was assessed based on 1) Durbin-Watson test and 2) correlation coefficients. Where Durbin-Watson is between 1.5 and 2.5, there is no problem with multicollinearity (Mamingi, 2005). In addition to the conditions, the researchers also assessed correlation coefficients as they provided another aspect to multicollinearity computations (March and Bourne, 2011; see also, Polit, 1996).

Ethical Considerations and Informed Consents

The issue of ethics in research evolved as a result of risk or harm that was placed on Black people during the Syphilis Study at Tuskegee. As a result, ethical principles have been established to guide Human Subjects Regulations, and these are 1) respect for people, 2) beneficence, and 3) justice. This has led to the development of an ethical code by American Psychological Association (APA's Ethics Code), which addresses different situations and questions. The matter of ethics in research relating to human subject is critical following to Syphilis Study at Tuskegee because research is more than ascertain empirical findings as it is about protect the human subject during and after the research process. Resnik (2015) forwards that the "…most common way of defining "ethics": *norms for conduct* that distinguish between acceptable and unacceptable behavior", which is in keeping with the Oxford Dictionary's conceptualization of the phenomenon (see also, Sales and Folkman, 2000; American Psychological Association, 2002). In the context of research, several writers have concluded that research has an ethical context that must be considered constantly during the process of research (Creswell, 2013; Gay, Mills and Airasian, 2009). In fact, several organizations, such as the American Psychology Association, the American Educational

Research Association and the American Sociological Society, have established ethical codes to provide guidance in the matter (Gay, Mills &Airasian, 2009).

Kuhn (1996) noted science is so because of the approaches taken, the rigours followed, the objectivity, measurement and gradual development. The social science is an inquiry into social phenomena, meaning peoples' attitudes, behaviours and perceptions. Because social science is on people, care must be taken to protect the human subjects (Neuman, 2014; Babbie, 2010). To comprehend the seriousness of ethical issues, Neuman (2014) opined that "Researchers need to prepare themselves and consider ethical concerns as they design a study so that sound ethical practices are built into the study design" (Neuman, 2014, 116). He noted further that "Ethics define what is or is not legitimate to do, or what 'moral; research procedure involves" (Neuman, 2014, 110).

In keeping with Neuman's perspective, the researchers include ethic as a part of the research process and follow it throughout. Firstly, the researchers sought to ensure that nowhere on the survey instrument requires the participant to give his/her name, other personal identifiers and information that can be traced back to the individual (privacy and confidentiality). Secondly, the participants were informed of their rights and responsibility of the subjects, and that they can withdraw from the process if they so desire. An informed concern Form was given to each willing subject to sign before they could participate in the research. Finally, the researchers ensure that no harm was brought to the participants (Berg, 2001), which is among the tenets of ethics in research.

Findings

Demographic Characteristics of sampled respondents

Table 1 presents background data (i.e., demographic characteristics) of the sampled respondents. For this cross-sectional study, there were 1,103 respondents. Of the sampled respondents (n=1,103), 69.3% (n=752) were females compared to 30.7% males (n=333). The majority of the sampled respondents were students (46.1%, n=508), with the average age being 24 years. The oldest person was 74 years old and the youngest being 12 years old (**Table 1**).

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Table 1.Demographic characteristics, n=1103

Details	**n (%)**
Gender:	
Male	333 (30.7)
Female	752 (69.3)
Employed:	
Yes	496 (45.7)
No	590 (54.3)
Employment status:	
Employed	454 (41.8)
Unemployed	124 (11.4)
Student	508 (46.1)
Income	Jamaica $60,000, range = (Jam $2,200,000)
Age	24 years (median), range = 62 years (74-12)

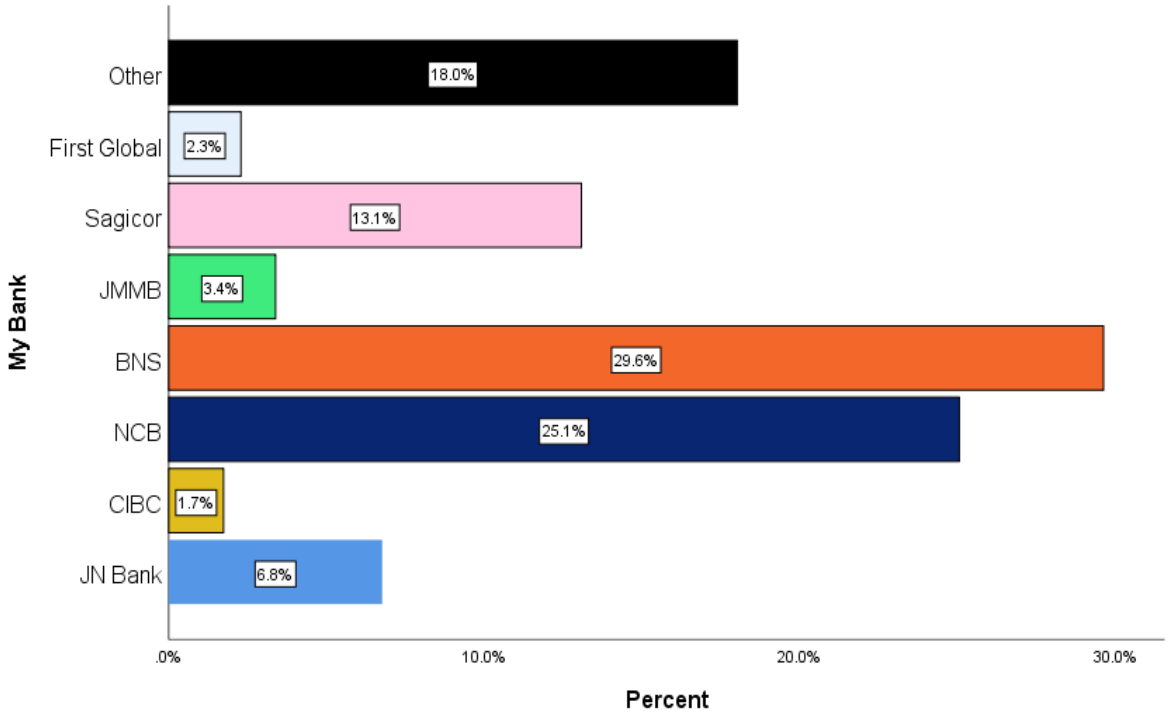

Figure 1.Respondents' view on who is their banker

When the respondents were asked 'Who is your bank?', their responses are depicted in **Figure 1**. Of the sampled respondents (n=1103), 99.1% responded to the aforementioned question. The majority of the sampled respondents indicated that the Bank of Nova Scotia Jamaica Ltd (BNS) is their banker (29.4%, n=324) followed by the National Commercial Bank Jamaica (25.1%, n=274), Other (18.0%. n=197), Sagicor (13.1%, n=143) and JN Bank (6.8%, n=74).

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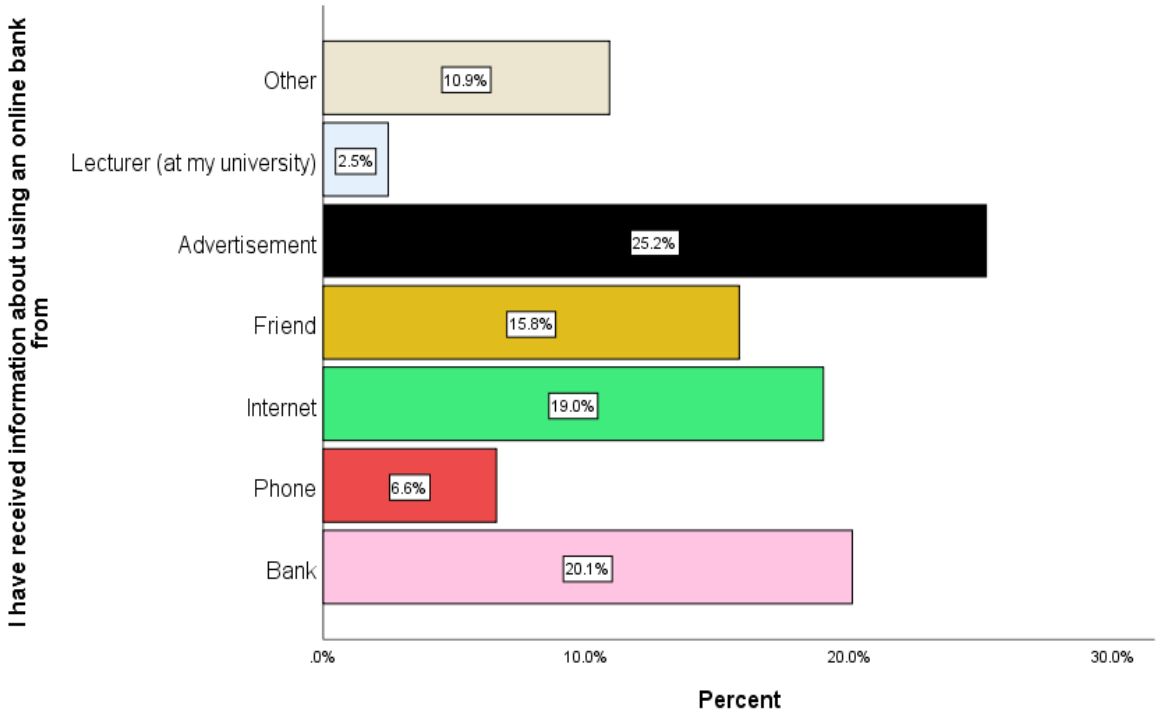

Figure 2.Information on Online Banking

The majority of the sampled respondents indicated that advertisement was the medium through which they received on online/internet banking (25.2%, n=276) followed by the banks (20.1%, n=220), the internet (19.0%, n=208), a friend (15.8%, n=173), other (10.9%, n=119), and so forth (Figure 2).

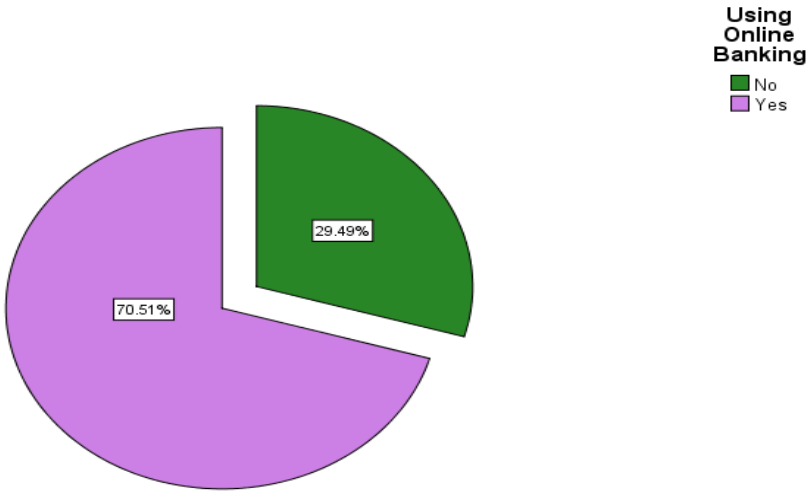

Figure 3.Usage of Online Banking

Of the 1103 respondents for this study, 99.0% responded to the question of 'Do you using Online/internet banking?' (**Figure 3**). Of those who responded to the previously mentioned question, 70.5% (n=770) indicated yes compared to 29.5% who remarked no (322). **Figure 4**

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disaggregated where respondents utilize online banking. Respondents' home represents the place where online banking is mostly used.

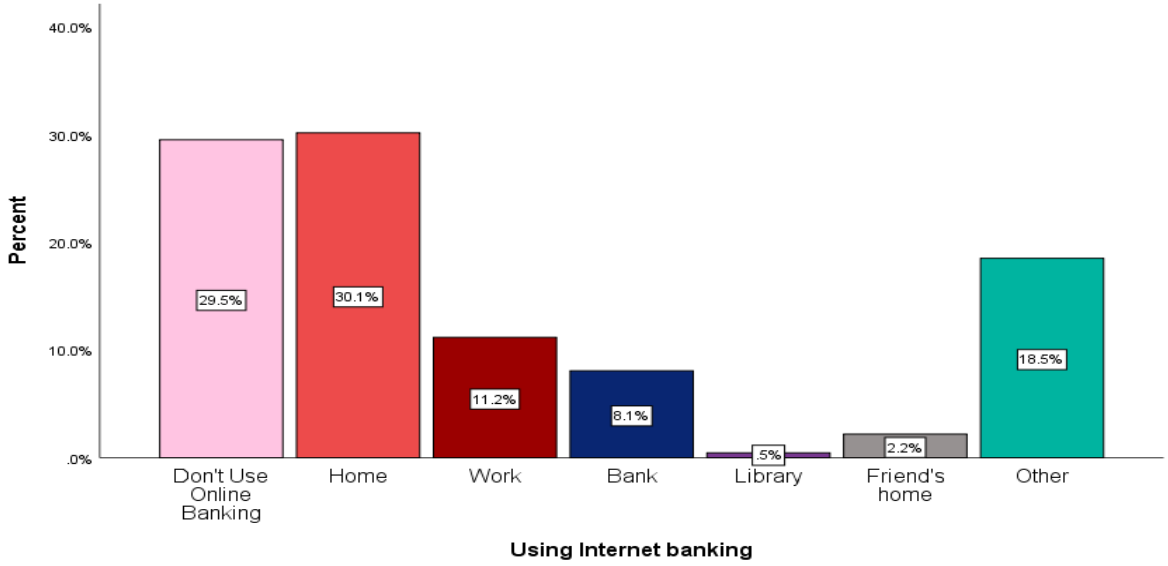

Figure 4.Information on Online Banking

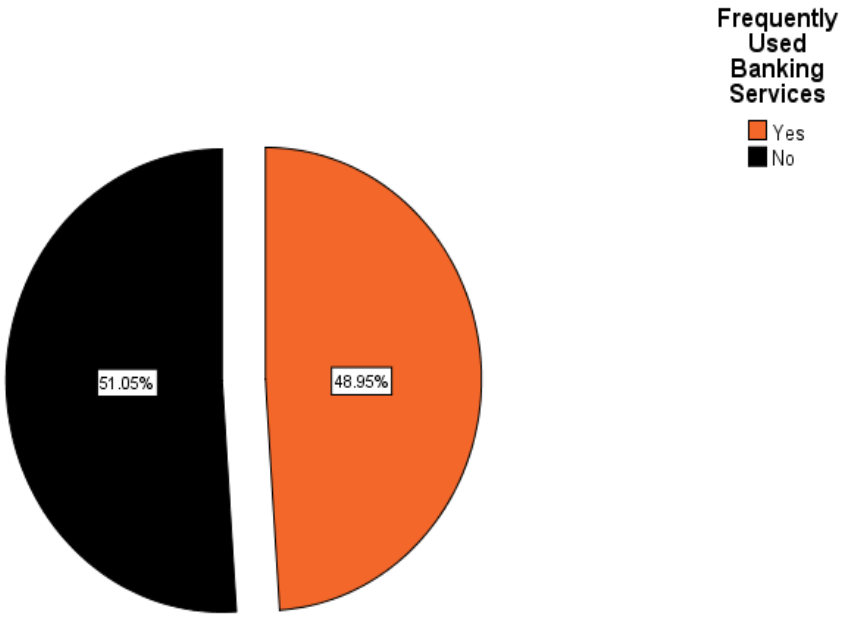

Figure 5.Frequency in utilizing banking services

The respondents were asked 'How frequently do they use the following banking services 1) Primary current accounts, 2) Credit-based service, 3) investment-based service, 4) Insurance based service, and 5) tuition fee payment? The responses are depicted in Figure 5. Generally, there is moderate usage of banking services among the sampled respondents (49.0%, n=537). This general frequency-usage of banking services was also disaggregated and presented in **Table 2**, below:

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Table 2.Frequency-usage of Banking Services

Details	Never	Rarely	Sometimes	Usually	Always
	n (%)	n (%)	n (%)	n (%)	n (%)
Primary current accounts	224 (20.6)	111 (10.2)	219 (20.1)	141 (13.0)	392 (36.1)
Credit-based services	549 (50.9)	170 (15.8)	196 (18.2)	58 (5.4)	105 (9.7)
Investment-based services	663 (60.8)	191 (17.5)	143 (13.1)	51 (4.7)	42 (3.9)
Insurance-based services	709 (65.2)	170 (15.6)	118 (10.8)	43 (4.0)	48 (4.4)
Tuition	482 (44.3)	166 (15.2)	217 (19.9)	105 (9.6)	119 (10.9)
Total	**560 (51.0)**	**6 (0. .5)**	**228 (20.8)**	**195 (17.8)**	**108 (9.8)**

H1: Perceived usefulness will have a positive effect on consumer acceptance of online banking.

Perceived usefulness was assessed using 6 Likert scale items. The six items had a Cronbach alpha of 0.946, which indicates the items are goodly fitted to assess the single concept of perceived usefulness. Overall, the respondents agreed with the perceived usefulness index (3.9± 0.8, 95%CI: 3.83-3.93), and the there disaggregations are presented in **Table 3**.

Table 3.Descriptive Statistics on the 6-item Perceived Usefulness Index

Items	Mean	Std. Deviation	N
Using an online bank enables me to utilize banking services more	3.9	0.90	1071
Using an online bank improves Performance of utilizing banking services	3.8	0.86	1071
Using an online bank for my banking services increase my productivity	3.8	0.90	1071
Using an online bank enhances my effectiveness of utilizing banking services	3.8	0.86	1071
Using an online bank makes it easier for me to utilize banking services	3.9	0.87	1071
Overall, an online bank is useful for me to utilize banking services	3.9	0.86	1071

Table 4 presents the results of the statistical correlation between perceived usefulness and using internet banking. The results revealed that people are more like to use internet banking with greater perceived usefulness of online banking (r_{xy} = 0.293, P > 0.0001), with the

association being a relatively weak one. Hence, perceived usefulness has a positive effect on consumer acceptance of online banking in Jamaica.

Table 4.Pearson's Product Moment Correlation of Perceived Useful and Using Internet Banking

		Perceived Usefulness	Using Internet Banking
Perceived Usefulness	Pearson Correlation	1	.293**
	Sig. (2-tailed)		<0.0001
	N	1095	1085
Using Internet Banking	Pearson Correlation	.293**	1
	Sig. (2-tailed)	<0.0001	
	N	1085	1092

**.Correlation is significant at the 0.01 level (2-tailed).

H2: Perceived ease of use will have a positive effect on consumer acceptance of online banking.

Perceived ease of use was assessed using 6 Likert scale items. The six items had a Cronbach alpha of 0.941, which indicates the items are goodly fitted to assess the single concept of perceived ease of use. Overall, the respondents agreed with the perceived usefulness index (3.8± 0.8, 95%CI: 3.74-3.85), and the there disaggregations are presented in **Table 5**.

Table 5.Descriptive Statistics on the 6-item Perceived Ease of Use Index

Items	Mean	Std. Deviation	N
Learning to use an online bank is easy for me	3.81	0.94	1073
I find it easy to do what I want to do in online bank	3.76	0.95	1073
My interaction with an online bank is clear and understandable	3.70	0.94	1073
I find an online bank to be flexible to interact with	3.73	0.90	1073
It is easy for me to become skilful at using an online bank	3.83	0.86	1073
Overall, I find an online bank easy to use	3.79	0.91	1073

Table 6 presents the results of the statistical correlation between perceived ese of use and using internet banking. The results revealed that people are more like to use internet banking with greater perceived ease of use of online banking (r_{xy} = 0.327, P > 0.0001), with the association being a relatively weak one. Hence, perceived ease of use has a positive effect on consumer acceptance of online banking in Jamaica.

Table 6.Pearson's Product Moment Correlation of Perceived Ease of Use and Using Internet Banking

		Using Internet banking	Perceived ease of use
Using Internet banking	Pearson Correlation	1	.327**
	Sig. (2-tailed)		<0.0001
	N	1092	1083
Perceived ease of use	Pearson Correlation	.327**	1
	Sig. (2-tailed)	<0.0001	
	N	1083	1093
**. Correlation is significant at the 0.01 level (2-tailed).			

H3: Perceived enjoyment has a positive effect on consumer acceptance of online banking.

Perceived enjoyment was assessed using 4 Likert scale items. The four items had a Cronbach alpha of 0.89, which indicates the items are goodly fitted to assess the single concept of perceived ease of use. Overall, the respondents agreed with the perceived enjoyment index (3.7± 0.8, 95%CI: 3.61-3.71), and the there disaggregations are presented in **Table 7**.

Table 7.Descriptive Statistics on the 4-item Perceived Enjoyment Index

	Mean	Std. Deviation	N
Using an online bank is pleasant	3.7454	.85076	1080
Using an online bank is positive	3.7269	.86236	1080
Using an online bank is exciting	3.5204	.86404	1080
Using an online bank is wise	3.5204	.92717	1080

Table 8 presents the results of the statistical correlation between perceived enjoyment and using internet banking. The results revealed that people are more like to use internet banking with greater perceived enjoyment of online banking (r_{xy} = 0.270, P > 0.0001), with the association being a relatively weak one. Hence, perceived enjoyment of unsing online has a positive effect on consumer acceptance of online banking in Jamaica.

Table 8.Pearson's Product Moment Correlation of Perceived Enjoyment and Using Internet Banking

		Perceived enjoyment	Using Internet banking
Perceived enjoyment	Pearson Correlation	1	.270**
	Sig. (2-tailed)		<0.0001
	N	1092	1082
Using Internet banking	Pearson Correlation	.270**	1
	Sig. (2-tailed)	<0.0001	
	N	1082	1092
**. Correlation is significant at the 0.01 level (2-tailed).			

H4: The amount of information regarding online banking has a positive effect on consumer acceptance of online banking.

Perceived amount of information was assessed using 2 Likert scale items. The 2 items had a Cronbach alpha of 0.840, which indicates the items are goodly fitted to assess the single concept of amount of information. Overall, the respondents agreed with the amount of information index (3.51± 0.95, 95%CI: 3.46-3.57), and the there disaggregations are presented in **Table 9**.

Table 9.Descriptive Statistics on the 2-item Amount of Information

	Mean	Std. Deviation	N
I have generally received enough information about online banks	3.4940	1.00424	1085
I have received enough information about the benefits of using an online bank	3.5410	1.02794	1085

Table 10 presents the results of the statistical correlation between perceived enjoyment and using internet banking. The results revealed that people are more like to use internet banking with greater perceived enjoyment of online banking (r_{xy} = 0.267, P > 0.0001), with the association being a relatively weak one. Hence, the amount of information on online banking has a positive effect on consumer acceptance of online banking in Jamaica.

Table 10.Pearson's Product Moment Correlation of Perceived Amount of Information and Using Internet Banking

		Amount of Information	Using Internet banking
Amount of Information	Pearson Correlation	1	.267**
	Sig. (2-tailed)		<0.0001
	N	1097	1087
Using Internet banking	Pearson Correlation	.267**	1
	Sig. (2-tailed)	<0.0001	
	N	1087	1092
**. Correlation is significant at the 0.01 level (2-tailed).			

H5: Security and privacy have a positive impact on online banking acceptance.

Perceived security and privacy was assessed using 5 Likert scale items. The 5 items had a Cronbach alpha of 0.852, which indicates the items are goodly fitted to assess the single concept of perceived security and privary. Overall, the respondents agreed with security and privacy index itesm (3.15± 0.95, 95%CI: 3.10-3.21), and the there disaggregations are presented in **Table 11**.

Table 11.Descriptive Statistics on the 5-item Perceived security and privacy index

	Mean	Std. Deviation	N
Using an online bank is financially secure	3.2296	.95741	1080
I trust in the ability of an online bank to protect my privacy	3.3204	.97187	1080
I trust in the technology an online bank is using	3.2889	.95393	1080
I am not worried about the security of an online bank	2.8741	1.09801	1080
Matters of security have no influences on using an online bank	2.6222	1.08314	1080

Table 12 presents the results of the statistical correlation between perceived security and privacy, and using internet banking. The results revealed that people are more like to use internet banking with greater perceived security and privacy of online banking (r_{xy} = 0.183, P > 0.0001), with the association being a very weak one. Hence, security and privacy of online banking has a positive effect on consumer acceptance of online banking in Jamaica.

Table 12.Pearson's Product Moment Correlation of Perceived Security and Privacy Index and Using Internet Banking

		Security	Using Internet banking
Security	Pearson Correlation	1	.183**
	Sig. (2-tailed)		<0.0001
	N	1094	1084
Using Internet banking	Pearson Correlation	.183**	1
	Sig. (2-tailed)	<0.0001	
	N	1084	1092
**. Correlation is significant at the 0.01 level (2-tailed).			

H6: The quality of internet connection has a positive effect on consumer acceptance of online banking.

Perceived internet connectivity was assessed using 2 Likert scale items. The 2 items had a Cronbach alpha of 0.861, which indicates the items are goodly fitted to assess the single concept of perceived internet connectivity. Overall, the respondents agreed with internet connectivity issues (3.52± 0.95, 95%CI: 3.46-3.58), and the there disaggregations are presented in **Table 13**.

Table 13.Descriptive Statistics on the 5-item Perceived security and privacy index

	Mean	Std. Deviation	N
My internet connection is fast	3.5202	1.09261	1090
My internet connection is reliable	3.5165	1.05679	1090

Table 12 presents the results of the statistical correlation between perceived internet connectivity issues and using internet banking. The results revealed that people are more like to use internet banking with greater perceived internet connectivity of online banking (r_{xy} = 0.090, P = 0.003), with the association being a very weak one. Hence, internet connectivity of online banking has a positive effect on consumer acceptance of online banking in Jamaica.

Table 14.Pearson's Product Moment Correlation of Perceived Security and Privacy Index and Using Internet Banking

		Internet connectivity index	Using Internet banking
Internet connectivity index	Pearson Correlation	1	.090**
	Sig. (2-tailed)		.003
	N	1095	1086
Using Internet banking	Pearson Correlation	.090**	1
	Sig. (2-tailed)	.003	
	N	1086	1092
**. Correlation is significant at the 0.01 level (2-tailed)			

H7: There are positive statistical correlation among perceived usefulness, perceived ease of use, perceived enjoyment, amount of information and internet connectivity indexes in Jamaica

The findings in **Table 15** *(End of the paper)* revealed that there was positive statistical correlation (r_{xy}> 0) among per perceived usefulness, perceived ease of use, perceived enjoyment, amount of information and internet connectivity indexes in Jamaica.

H8: Online banking behaviour of Jamaicans is influence by perceived usefulness, perceived ease of use, perceived enjoyment, amount of information, security, internet connectivity, and selected demographic characteristics (age, employed, gender)

Online Jamaica in Jamaica can be determined by a linear function (F[10, 1028]=20.445, P < 0.0001). Table 16 presents selected demographic variables (employment status, gender, & age) and particular variables on using online banking among Jamaicans. Of the ten variables used in Table 16, seven of them accounted for 16.5% of the variance in using online banking among Jamaicans, with employment status and age accounting for 2.3% and perceived ease of use explaining 10.3%. In fact, perceived ease of use accounted for 62.4% of the explanatory power of the current model (16.5%).

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Table 16.OLS estimates on Using Internet Banking (including demographic characteristic) in Jamaica

Details	Unstandardized Coefficients		Beta	t	P value	95.0% Confidence Interval		
	B	Std. Error				Lower	Upper	R^2
Constant	.311	.395		.786	.432	-.465	1.086	
Employed (1=yes)	.673	.146	.153	4.605	.000	.386	.960	.012
Gender (1=male)	-.009	.140	-.002	-.067	.947	-.284	.265	
Internet connectivity	-.143	.068	-.066	-2.105	.036	-.277	-.010	.004
Security	-.089	.087	-.038	-1.024	.306	-.259	.081	
Amount of Information	.247	.085	.106	2.905	.004	.080	.414	.007
Perceived enjoyment	.050	.137	.019	.367	.713	-.218	.319	
Perceived ease of use	.419	.136	.163	3.073	.002	.151	.686	.103
Perceived Usefulness	.260	.118	.098	2.207	.028	.029	.492	.004
Frequency Usage of Banking Service	.216	.045	.146	4.777	.000	.127	.305	.026
Age	-.026	.007	-.122	-3.816	.000	-.040	-.013	.011

Outside of those correlations or otherwise presented in Table 16, many combinations of inter-correlations are outlined in the Annex. Based on the Table in the Annex, all the significant statistical correlations between age as well as employed status are weakly associated with security, information, internet connectivity, frequently internet usage, perceived ease of use, perceived, perceived enjoyment, perceived usefulness, and online banking usage. Furthermore, younger people are less likely to be concerned with internet security than older people (r_{xy} = -0.070, P = 0.012) and positive statistical correlation existed between age and frequent internet usage (r_{xy}=0.191, P< 0.001). Employed respondents were more likely to be 1) older (r_{xy}=0.426, P< 0.001), 2) males (r_{xy}=0.230, P< 0.001), 3) concerned about internet security (r_{xy}= 0.066, P< 0.0001), 4) want more information on internet (r_{xy}= 0.208, P< 0.0001), 5) concerned about perceived usefulness (r_{xy}= 0.120, P< 0.0001), 6) more likely to use online banking on frequent basis (r_{xy}= 0.255, P< 0.0001), and 7) more likely to believe in perceived ease of use of internet (r_{xy}= 0.128, P< 0.0001).

Discussion

Research plays a critical role in providing empirical information that guide informed decision-making (Harriott, 2003). Harriott (2003), who is a leading criminologist in the

Caribbean, having been using empirical investigation to provide policy making with positivistic studies to address the crime pandemic in Jamaica. He contended that research is the gateway to understanding the crime phenomenon, and that it is through this medium that many policies have been formulated and measures implemented to combat the crime problem in the Caribbean region, which is equally so for other areas in the social sciences. Like Harriott (2003), historically, research have been widely used to solve biomedical issues in our society to include penicillin for the treatment of pneumonia, gonorrhea or rheumatic fever (Barker, Germovsek, & Sharland, 2017; American Chemical Society International Historic Chemical Landmarks, 2020; Brannon and Feist, 2007; Yip and Gerriets, 2020) and models for addressing chronic conditions (Engel, Devadasan, Horstman, & Criel, 2018). With issue of Coronavirus Disease 2019 (COVID-19), the matter of online banking is once again at the forefront of banking behaviours, and research will be at the forefront of change. This study found that 71% of respondents use online/internet banking in Jamaica, and that 49% frequently use this system. Furthermore, 74 out of every 100 Finnish frequently use internet banking, 66 out of every 100 Americans (Fox and Beier, 2006), which means that Jamaicans are lagging in the area of technology-banking. Therefore, the usage of internet banking and factors that influence this behaviour are extensively discussed in the proceeding paragraphs, and these are compared and contrasted with those in other societies.

An extensive review of the literature on online banking (Aboelmaged, & Gebba 2013; AbuShanab and Pearson, 2007; AbuShanab, Pearson, & Setterstrom, 2010; Al-Qeisi, 2009; Cavus, & Chingoka, 2015; Mostafa & Eneizan, 2018;Zhang, Zhou, Wang, & Zhang, 2008) revealed no research on the matter in Jamaica, which means that this research will add value to the discourse of online banking, particularly within the context that the data was collected during COVID-19. According to Cavus and Chingoka (2015), reviewing information technology and online/internet banking, opined that “In conclusion, the banking sector is now using new technologies to provide better services to customers. The banking sector realises that customers’ needs have changed with the advancements in technology and their own needs. IT has allowed for improved banking products, competitive markets, implementation of consistent methods for control of threats and has aided mobile banking services to reach geographic distance and varied markets” (p. 68), which offers an insight into factors that determine online banking. The current study answers four research questions (1. Does perceived usefulness of technology facilitate greater acceptance of online banking? 2. Does perceived ease of use of technology facilitate acceptance of online banking? 3. Does security and confidentiality of information facilitate acceptance of online banking? and 4. Does quality of internet connectivity affect acceptance of online banking?). From those research questions, key recommendations will be made.

Many theories have been empirically established to explain people’s behaviour. These theories account for different aspect of behaviour such as the Theory of Reasonede Action (TRA) (Fishbein and Ajzen, 1975; Siyal, Donghong, Umrani, Siyal, & Bhand, 2019), the Theory of Planned Behaviour (TPB) which is about one factor that determines the

behavioural intention of the person's attitudes toward that behaviour, which is widely used by current scholars (Andrew, Mullan, de, et al., 2016; Ajzen, 1991; DeMaria, Sundstrom, Faria, Saxon, et al., 2019; Fazio, & Olson, 2014; Neal, Wood, Labrecque, & Lally, 2012; Wood, Labrecque, Lin, & Rünger, 2014; Kan, & Fabrigar, 2017), and the Theory of 'Diffusion of Innovation' was to establish the foundation for conducting research on innovation acceptance and adoption, and this theory continues to hold currency in research (Dearing, 2009; Dearing, & Cox, 2018; Zhang, Yu, Yan, & Spil, 2015). Irrespective of the theory examined to explain people's behaviour there is aptly evidence that behaviour is influenced by many factors including attitude, norms, motivation, and beliefs. From this perspective, the Decomposed Theory of Planned Behaviour offers some explanation for people's behaviour form the vantage point of usefulness as well as the Technology Acceptance Model (TAM) (i.e., Davis, 1989; Davis, & Venkatesh, 1996; Hosein 2009, & Mostafa, & Eneizan, 2018) offers a rationale for how perceived usefulness (PU) and perceived ease of use (PEOU) feed into the behavioural intention to use the technology. The current researh concurs with the literature that the use of technology influence Jamaicans transaction behaviour. In fact, the amount of information, perceived use and perceived usefulness of technology account for 17.4% of the variance in using online/internet banking amount Jamaicans.

Many theories have been empirically established to explain people's online banking behaviour. These theories account for different aspect of behaviour such as the Theory of Reasonede Action (TRA) (Fishbein and Ajzen, 1975; Siyal, Donghong, Umrani, Siyal, & Bhand, 2019), the Theory of Planned Behaviour (TPB) which is about one factor that determines the behavioural intention of the person's attitudes toward that behaviour, which is widely used by current scholars (Ajzen, 1991; DeMaria, Sundstrom, Faria, Saxon, et al., 2019;Fazio, & Olson, 2014; Neal, Wood, Labrecque, & Lally, 2012; Wood, Labrecque, Lin, & Rünger, 2014; Andrew, Mullan, de, et al., 2016; Kan, & Fabrigar, 2017),and the Theory of 'Diffusion of Innovation' was to establish the foundation for conducting research on innovation acceptance and adoption, and this theory continues to hold currency in research (Dearing, 2009; Dearing, & Cox, 2018; Zhang, Yu, Yan, & Spil, 2015). The TAM model by Venkatesh and Davis (2000) found that perceived usefulness and perceived ease of use account for the social influence and cognitive instrumental processes of people. Simply put, usefulness influences people's acceptance of using technology. Furthermore, on examination of all the technology model, perceived usefulness positive influence technology acceptance and by extension usage. According to Davis, perceived usefulness, is "The degree to which a person believes that using a particular system would enhance their performance" (Davis, 1989), which Hosein (2009) found accounted for 44.7% (R^2=0.447) of the acceptance of using technology. Furthermore, Siyal, Donghong, Umrani, Siyal, & Bhand (2019) found a strong statistical association between perceived usefulness and accepting using online banking (R^2=0.675). On the other hand, Perera (2018) found a moderate associated between perceived usefulness and use of online banking services (R^2=0.411) and though this is somewhat different from the finding of Siyal, Donghong, Umrani, Siyal, & Bhand (2019),

they both concur with the direct association of two factors. Those findings are contradicted by the work of Mostafa and Eneizan (2018) that found a weak statistical correlation between perceived usefulness and usage of internet banking (R^2=0.213), which is somewhat concurred by the current research (Adjusted R^2 = 0.007). Like Mostafa and Eneizan's study, this study found an even weaker statistical correlation between online banking among Jamaicans and perceived usefulness (Adjusted R^2= 0.007).

The Decomposed Theory of Planned Behaviour offers some explanation for people's behaviour from the vantage point of usefulness as well as the Technology Acceptance Model (TAM) (i.e., Davis, 1989; Davis & Venkatesh, 1996; Hosein 2009, Mostafa & Eneizan, 2018) offers a rationale for how perceived usefulness (PU) and perceived ease of use (PEOU) feed into the behavioural intention to use the technology. This theory adds percieved ease of use as another factor in the online banking behaviour discourse. The TAM model by Venkatesh and Davis (2000) found that perceived usefulness and perceived ease of use account for the social influence and cognitive instrumental processes of people. Like the literature, the current study found that perceived ease of use contributes to Jamaicans online banking behaviour. In fact, perceived ease of use of the technology had the greatest influence on Jamaicans' online banking behaviour. The original TAM's model developed by Davis (1986) found two factors that influence technology usage. With further developments of the original TAM (i.e., TAM2- Venkatesh and Davis, 2000; TAM 3- Venkatesh and Bala, 2008), there is a consensus that perceived ease of use of technology accounts for changes in accepting technology. In fact, TAM3 empirically found that research model was tested in real-world settings of information technology (IT) implementations. Although the TAM3 identified perceived ease of use of technology as a factor that influences people's behaviour in accepting use of technology, no direction was stated for this factor. An empirical study by Hosein (2009) found that perceived ease of use is strongly associated with use of online banking services (R^2=0.322 or 32.2%) and Siyal, Donghong, Umrani, Siyal, & Bhand (2019) for that squared R is 0.612 (see also Perera, 2018- perceived ease of use is strongly associated with use of online banking services, R^2=0.442), and this explains the importance of this factor in determining people's behaviour in accepting using online banking. The current research found that perceived ease of use was a weak predictor of Jamaicans' behaviour in accepting using online banking (Adjusted R^2= 0.152). Although perceived ease of use of technology was weakly correlated with Jamaicans' behaviour to use online banking, it has the most influence on online banking behaviour (i.e., adjusted R^2 = 0.152 out of adjusted R^2 = 0.174).

Wang, Wang, Lin, & Tang (2003) identified that security and confidentiality account for changes in the use of internet/online banking. Unlike Wang, et al. (2003), Hosein's (2009) study found that security and confidentiality are not among the factors of internet/online banking (i.e., (i.e., perceived ease of use, pvalue = 0.101; perceived usefulness, pvalue=0.127). Unlike Hosein's work, Lai (2016) found that security was statistically associated with both perceived usefulness and perceived ease of use of technology. This study concurs with the findings of Lai (2016) that there are statistical association between

security and 1) perceived ease of use of technology (r_{xy} = 0.542, P < 0.05), and 2) perceived usefulness (r_{xy} = 0.480, P < 0.05). Security of online banking is positively associated with the usage of online banking in Jamaica (r_{xy}=0.183, P < 0.0001); but it is not a factor of online banking (P = 0.482) which concurs with Hosein's work. Security of online banking has an influence on the usage of this facility (Smith, 2006); but does not predict Jamaicans usage of the system. This means that Jamaicans are taking security of the system into consideration when determining their usage of online banking and that collectively this does not predict the behaviour because of online banking frauds and scamming that have occurred in other societies (Federal Bureau of Investigation, 2019; Mahdi, Rezaul, &Rahman, 2010)and general internet fraud cases (British Broadcasting Corporation, 2019) as well as cyber and bank frauds in Jamaica (Bourne, Chambers, Blake, Sharpe-Pryce, & Solan, 2013; Jones, 2014; Ministry of Finance & Public Service, 2019). Apart of this rationale is the fact that online banking is somewhat forced on people. Many people use online banking simply because they are required to do so because of the requirement of 1) salary payment, 2) investment decisions, and 3) other requirements. As such, Jamaicans are 'warming up' to online banking despite their reservations and security concerns (Jamaica Observer, 2018a; U.S. Embassy in Jamaica, n.d; Gunn, 2019).

Quality of the product, technology, was identified as a factor of TAM3 model. Empirically examining quality of the internet and whether this influences internet/online banking, Hosein's (2009) found that quality of the internet determines perceived usefulness (p-value < 0.030) and that the relationship is a strong one (r_{xy}= 0.620). However, no statistical association emerges between quality of the internet and perceived ease of use of the internet banking (p-value < 0.184). Like Hosein's study, this work found that quality of the internet positively influences Jamaicans behaviour to use online banking (r_{xy}= 0.262); however, it is not a predictor of such a behaviour. The matter of quality of internet (internet connectivity) is secondary to Jamaicans desire to use the internet simply because of the society's thrust in moving towards online banking. The fact is people who work in the formal sector are encouraged to use online banking (Hugh, 2020) because they are paid through this medium. Online banking is less of a need for those in the informal sector and so the issue of quality of the internet is a secondary concern to them because their expectations and requirements are met outside of online banking.

The issue of perceived enjoyment is well established in literature as a factor of online banking (see TAM3). In Jamaica, there is a weak bivariate correlation with perceived enjoyment and usage of online banking (rxy=0.270, P < 0.0001) that concurs with TAM3. However, perceived enjoyment is not a predictor of online banking in Jamaica (P > 0.05) and this is easily explainable. The rationale behind the non-predictability of perceived enjoyment on online banking is simply on the premise of the means justifying the end. Within the context of the market economy, money is an end and so people are engaged into various practices to attain the end. Money is used to transact personal and impersonal transactions and people engage in various transactional behaviour to materialize the end (Hugh, 2020).

Owing to their ends, people use online banking to accommodate their lives and because all the transactional behaviours are not, they will continue to act within this framework. Hence, people's transactional behaviour is not because of enjoyment associated with online banking; but it is on the premise that the means is justifying the end.

The coronavirus has resulted in lesser physical interactions and travel to and from different geo-political zones than before its emergence because of the issue of quarantine and states of emergency (Loop Jamaica 2020a, 2020b; U.S. Embassy in Jamaica, 2020; Overseas Security Advisory Council Bureau of Diplomatic Security (OSAC), 2019). The government of Jamaica through the Ministry of Health and Wellness has been update the people on the status and severity of COVID-19 as well as encouraging them to adhere to certain protocols including social distancing and less public gatherings as measures that will stop the spread of the virus (Ministry of Health and Wellness, 2020). In an effort to reduce the spread of COVID-19, online transactions have been encouraged and promoted by various entities including the Bank of Jamaica (Hugh, 2020; Jamaica Gleaner, 2020a, 2020b; Television Jamaica, 2020). This research found that information on online banking within the context of COVID-19 is determining online banking among Jamaicans, which concurs with the literature on online banking. Despite the efforts to go cashless (Hugh, 2020), many Jamaicans continue to use cash simply because the means justify the ends and it has nothing to do with the seemingly favourable perception that is created by various stakeholders (First Global Bank, 2019; Jamaica Money Market Brokers, 2018; Venkatesh, 1999). The reality is, Jamaica is substantially a cash society and while people are 'warming up' to a cashless society, it is slow process and one that will take more time to accomplish irrespective of what is established in other Caribbean islands (Robinson and Moore, 2011) as well as the fear of information in cyberspace (Page, 2019; Robinson and Charles, 1998).

Jamaicans placed minute emphasis on internet connectivity as a factor in online banking decisions. They are not only concerned about security and confidence in determining their online banking transactions; but equally the actual connectivity before they engage in online banking. Therefore, online banking decision is a complexed process that is determined by internet connectivity and other factors including demographic characteristics such as age and employment status.

Conclusion

There is a high per cent of Jamaicans who use online banking to carry out business and personal transactions. Despite this fact, online banking is lowly used by Jamaicans and this may be as a result of security concerns as well as the cash culture that exists. Undoubtedly there are obvious advantages for using internet/online banking today (Mehrotra (2014) and this explains why 7 out of every 10 Jamaicans indicated that they utilize this system. The issue of COVID-19 pandemic has reiterated the importance and value of internet/online banking to transact economic/financial businesses because of the promulgated social

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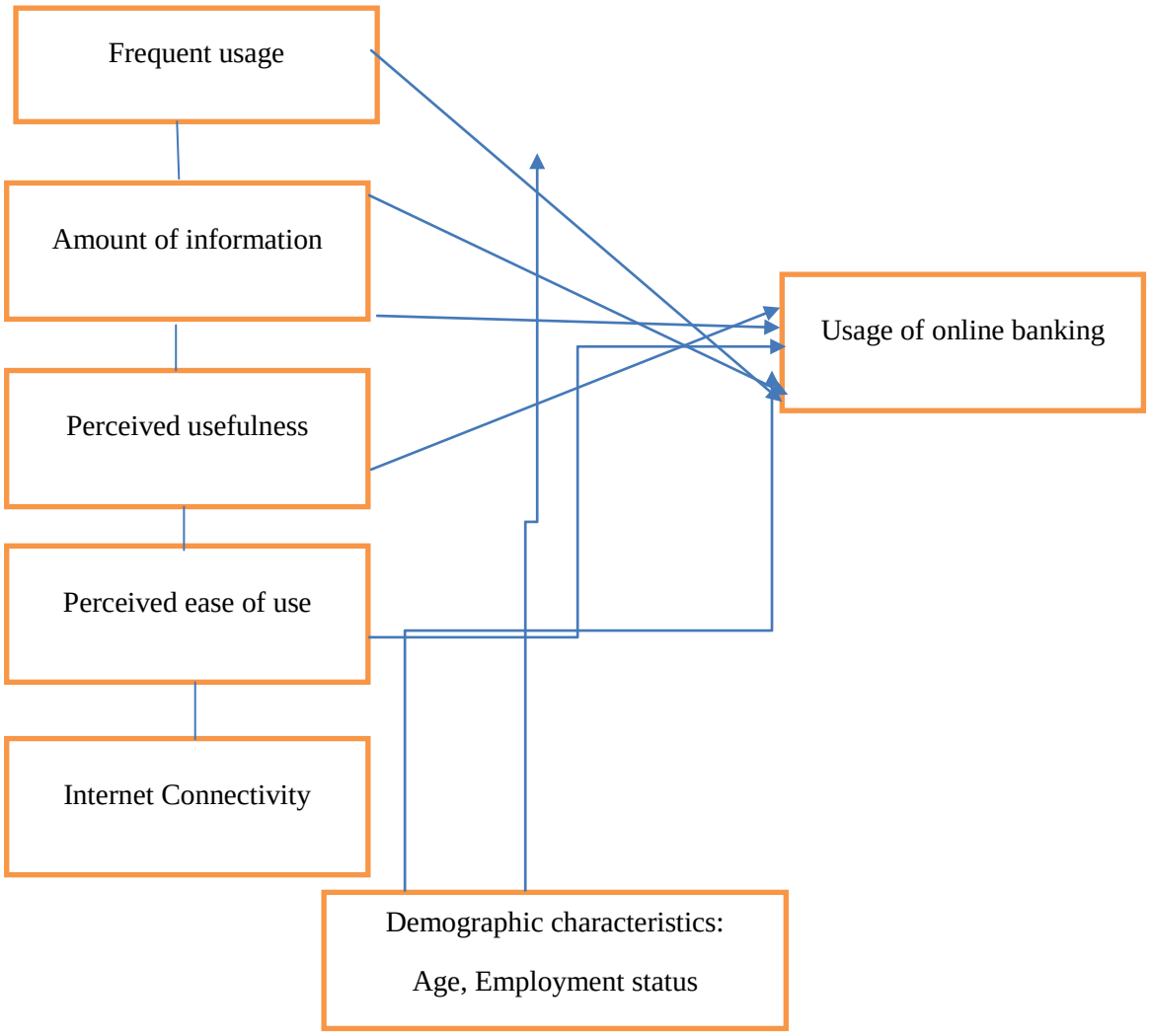
distancing which is to reduce the spread of the virus. In fact, Berger (2003) had forwarded the importance of the economics of technology some 17 years prior to the COVID-19 virus, which is proving to be reality in periods of disease pandemic and supports Tan and Teo (2000) belief that internet technology is a profound contribution to consumerism in the 21st century (see also, Rambocas & Arjoon, 2012). Despite the advantages of internet/online banking to consumerism, some people are risk averse and the advantages of ease of use of this medium to transact businesses they do not welcome such a system.



Source: Current researchers

Figure 21.Modelling online banking in Jamaica

Despite the benefits of internet/online banking to commence/economics, Qureshi, Zafar, & Khan (2017) had outlined that one in every two Pakistanis used internet banking, suggesting that there are some risk averse people in society, and this extends beyond Pakistan **(**Mostafa, & Eneizan, 2018; Siyal, Donghong, Umrani, Siyal, & Bhand, 2019; Suoranta, 2003) to Jamaica. Of the 1,103 Jamaicans surveyed for this study, only 29.6% are risk averse and this offers that online banking is highly accepted across demographic characteristics such as gender, employment status, and age of respondents. Furthermore, this study found that online

banking is influenced by amount of information, internet connectivity, frequent usage, perceived usefulness, and perceived ease of use as well as age and employment status that is concurring with the literature (Ahmadirezaei, 2011)which is depicted in Figure 9. Above.

Recommendations

The researchers are recommending 1) that other studies be conducted in the area of online banking with emphasis on demographic characteristics (area of residence, and marital status) disparity in perceived ease of use, usefulness, safety and privacy, 2) a qualitative study to assess those predictors that explain a significant variance in online banking among Jamaicans, and 3) an assessment of the role of online shopping on online banking among Jamaicans.

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Table 15.Pearson's Product Moment correlation among selected indexes

		Perceived Usefulness	Perceived ease of use	Perceived enjoyment	Amount of Information	Internet connectivity	security
Perceived Usefulness	Pearson Correlation	1	.737**	.675**	.509**	.317**	.480**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N		1092	1092	1095	1093	1093
Perceived ease of use	Pearson Correlation		1	.777**	.555**	.339**	.542**
	Sig. (2-tailed)			.000	.000	.000	.000
	N			1092	1093	1091	1093
Perceived enjoyment	Pearson Correlation			1	.478**	.311**	.615**
	Sig. (2-tailed)				.000	.000	.000
	N				1092	1090	1092
Amount of Information	Pearson Correlation				1	.376**	.423**
	Sig. (2-tailed)					.000	.000
	N					1095	1094
Internet connectivity	Pearson Correlation					1	.262**
	Sig. (2-tailed)						.000
	N						1092
security	Pearson Correlation						1
	Sig. (2-tailed)						
	N						

**. Correlation is significant at the 0.01 level (2-tailed).

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Annex

Pearson's Product Moment Correlations of selected demographic characteristics and TAMs												
		Using Internet banking	**Employed (1=Yes)**	**Male**	**Internet connectivity**	**Security**	**Amount of Information**	**Perceived enjoyment**	**Perceived Ease fuse**	**Perceived Usefulness**	**Frequency Usage of Banking Service**	**Age**
	Using Internet banking	1.000	.182	.069	.090	.183	.270	.267	.321	.294	.229	-.025
	Employed (1=Yes)	.182	1.000	.230	.148	.066	.208	.106	.128	.120	.255	.426
	Gender (1=Male)	.069	.230	1.000	.061	.067	.062	.083	.103	.087	.102	.052
	Internet_ connectivity_ index	.090	.148	.061	1.000	.265	.358	.309	.328	.314	.179	.088
	Security	.183	.066	.067	.265	1.000	.425	.624	.559	.488	.167	-.070
	Amount of Information	.270	.208	.062	.358	.425	1.000	.483	.557	.510	.237	.101
	Perceived enjoyment	.267	.106	.083	.309	.624	.483	1.000	.784	.684	.193	-.022
	Perceived ease of use	.321	.128	.103	.328	.559	.557	.784	1.000	.738	.229	-.014
	Perceived Usefulness	.294	.120	.087	.314	.488	.510	.684	.738	1.000	.202	-.002
	Frequency Usage of Banking Service	.229	.255	.102	.179	.167	.237	.193	.229	.202	1.000	.191
	Age	-.025	.426	.052	.088	-.070	.101	-.022	-.014	-.002	.191	1.000
Sig. (1-tailed)	Using Internet banking	.	.000	.014	.002	.000	.000	.000	.000	.000	.000	.214
	Employed (1=Yes)	.000	.	.000	.000	.017	.000	.000	.000	.000	.000	.000
	Gender (1=Male)	.014	.000	.	.025	.015	.023	.004	.000	.003	.000	.046
	Internet_ connectivity_ index	.002	.000	.025	.	.000	.000	.000	.000	.000	.000	.002
	Security	.000	.017	.015	.000	.	.000	.000	.000	.000	.000	.012
	Amount of Information	.000	.000	.023	.000	.000	.	.000	.000	.000	.000	.001

	Perceived enjoyment	.000	.000	.004	.000	.000	.000	.	.000	.000	.000	.240
	Perceived ease of use	.000	.000	.000	.000	.000	.000	.000	.	.000	.000	.321
	Perceived Usefulness	.000	.000	.003	.000	.000	.000	.000	.000	.	.000	.473
	Frequency Usage of Banking Service	.000	.000	.000	.000	.000	.000	.000	.000	.000	.	.000
	Age	.214	.000	.046	.002	.012	.001	.240	.321	.473	.000	.
N	Using Internet banking	1039	1039	1039	1039	1039	1039	1039	1039	1039	1039	1039
	Employed (1=Yes)	1039	1039	1039	1039	1039	1039	1039	1039	1039	1039	1039
	Gender (1=Male)	1039	1039	1039	1039	1039	1039	1039	1039	1039	1039	1039
	Internet_ connectivity_ index	1039	1039	1039	1039	1039	1039	1039	1039	1039	1039	1039
	Security	1039	1039	1039	1039	1039	1039	1039	1039	1039	1039	1039
	Amount of Information	1039	1039	1039	1039	1039	1039	1039	1039	1039	1039	1039
	Perceived enjoyment	1039	1039	1039	1039	1039	1039	1039	1039	1039	1039	1039
	Perceived ease of use	1039	1039	1039	1039	1039	1039	1039	1039	1039	1039	1039
	Perceived Usefulness	1039	1039	1039	1039	1039	1039	1039	1039	1039	1039	1039
	Frequency Usage of Banking Service	1039	1039	1039	1039	1039	1039	1039	1039	1039	1039	1039
	Age	1039	1039	1039	1039	1039	1039	1039	1039	1039	1039	1039

