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## **A Meta-Analysis of User Perception and Use of Online Digital Platforms in Kenya: Evidence from E-citizen Platform, Kenya**

\*Morrisson Kaunda Mutuku (PhD)

\*Department of Management Science, School of Business Kenyatta University

[kaunda.morrison@gmail.com](mailto:kaunda.morrison@gmail.com)

### **Abstract**

This paper sought to establish the effect of user perception on use of online digital platforms in Kenya with evidence from e-citizen platform in Kenya. This paper conducted desktop analysis of published papers on user perceptions and adoption of e-citizen platforms in Kenya. The results revealed that user perception has a significant effect on adoption and use of online digital platforms. The findings further showed that in various ways that user perceptions especially on digital platforms security and privacy, usefulness, ease of use, complexity, speed, efficiency and affordability among others significantly influenced the adoption and use of e-citizen platforms in Kenya.

There is need for awareness campaigns among the target users. Because of various experiences the user have had with other online platforms, implementers of new platforms have a role to play in changing the use perceptions that targeted user may have due to previous interactions. The increase in the cases of cyber-crimes where malicious people have access to people personal data has eroded many people confidence and trust in the online platforms, hence it is a responsibility of the government to guarantee users of these online platforms of their security and privacy to increase adoption and use.

**Keywords:** User Perception Digital Platforms, E-citizen, Kenya

### **Introduction**

The advancement in technology continues to impacts business, organisation and government alike. The need to go online is increasing by day because of its potential to serve many people from far wide more conveniently. However, to achieve high adoption of online services users' perception has a significant role to play. This paper therefore sought to analyse effect of user perception on use of online digital platforms in Kenya with evidence from e-citizen platform in Kenya. Platform-based business models have attracted a substantial research stream (Casadesus-Masanell & Llanes, 2015) and their success in a digital context has prompted some to suggest that existing business models have increasingly aimed to transform themselves into platform-based service providers (Parmentier & Gandia, 2017).

The challenges facing a platform approach result from the necessity to become more open and accessible, drive a more collaborative vision, and ultimately create an attractive ecosystem (Gawer & Cusumano, 2008). While the nature of a platform can be business-to business, business-to-customer (Example: Amazon marketplace) we placed the focus in this paper on customer-to-customer (C2C) platforms. It is important to point out that these forms are not always mutually exclusive, with prominent examples such as eBay having morphed from a customer-to-customer orientation to business to-customer orientation due to a seller population that is mostly made up of professionals (Gong, Greenwood & Song, 2017). The centrality of the customer continues to be a core element of the sharing economy concept (Einav, Farronato & Levin, 2016).

Security is considered a significant barrier for online users and can have a great influence on the use of online applications. Generally, user confidence in technology is greatly weakened if that technology is not supported by an accredited organization or legal authority. Therefore, security could be a determinant of users' decisions



to use e-payment systems (Alshamsi & Andras, 2019). Lesemann et al. (2007) say that usability issues need to be examined in the design of new functions and services on any platform, to ensure an enjoyable user experience. Albert and Tullis (2013) present an excellent conclusion to the need for usability and security, claiming that IT-enabled service interactions must meet users' expectations. Therefore, e-government services must be designed based on users' backgrounds, levels of knowledge, skills and contexts of use in order for there to be satisfactory services (Einav, Farronato & Levin, 2016; Mutuku, Muathe, & James, 2019).

As digital platforms continues to gain traction around the world, for instance in India, digital payments have been experiencing exponential growth and with growth of internet and mobile penetration, in coming years the country is ready to witness a huge rush in the adoption of digital payments. According to Ratan Watal principal advisor Niti Aayog and former finance secretary, digital payments grew 55% by volume and 24.2% by value in 2016-17 over the previous year. Data from the Reserve Bank of India (RBI) indicates that the rate of adoption of digital payments had accelerated following demonetization last year but has slowed in recent months of 2017 (Singh & Rana, 2017).

In 2013, a presidential directive saw the formation of a taskforce to start the journey towards digitization and to implement e-Government services. eCitizen was conceived with the core objectives to reduce costs of pilferage, increase collections, centralize services, improve monitoring, accounting, reconciliation and reporting of revenue collections, reduce cash handling risks and associated costs, consolidate government information on services and payments across the country, and improve decision making on service delivery processes. Some of the eCitizen services that were made available at launch were: passport, driving license, business permit, and marriage and birth certificate registration services. In order to access these services, citizens needed to create an eCitizen account which was linked to their unique national ID and email address. By 2017, there were more than 4 million registered accounts on eCitizen platform and twice as many online requests for services (Mwangi, 2019).

E-Citizen gateway is Government-to-Consumer (G2C) business model that provides access to government services in Kenya. The online solution was deployed in 2014 by the Government of the republic of Kenya. The primary goal of setting up the solution was to facilitate the delivery of public service by providing Kenyan citizens, residents and foreigners with access to different public services and information from one stop solution through integrated networks of technology.

E-Citizen solution offers the comfort of the citizen with secure government services. Through the integrated system, Kenyans are able to obtain birth certificates, national identity cards, passport and visas applications, business name registration, marriage certificate applications, driving licenses, police abstracts among services, land searches and clearances among other services by allowing the users create an account, apply for government services and expediently pay using mobile money such as MPESA, credit cards, debit cards and online banking (GoK, 2016).

The government aimed to give people access to comprehensive public services through telephones, computers and personal digital assistants (PDA) through the E-Citizen platform. It is also expected that the solution would boost service delivery and close gaps in the graft. Public service tenders and vacancies have also been made accessible on the website. The consumers are also able to give their feedback and suggestions about government services immediately (GoK, 2016).

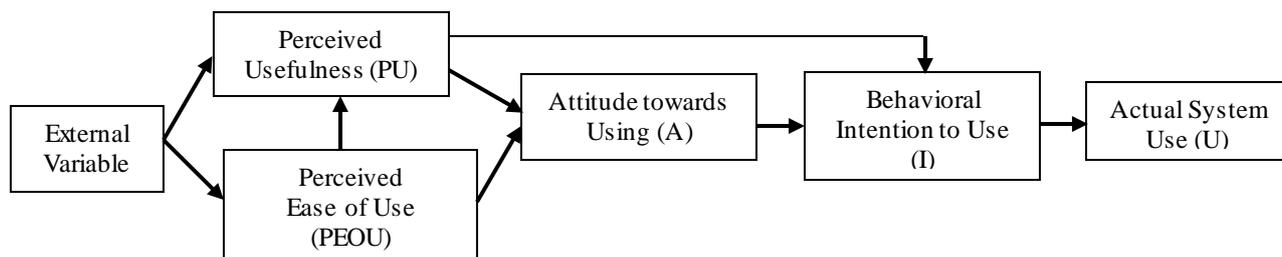
Before licenses or approvals were obtained, both local and foreign investments were hampered or delayed by the tiresome bureaucratic requirements of various government agencies. Many Kenyans found it difficult to obtain even some of the most basic and simple services, such as national identification cards or a small company trading license (GoK, 2015). Despite the government's efforts to implement the initiatives, one of the challenges facing successful usage of the integrated solution platform is digital illiteracy. A report by Innovation Unit, Aga

Khan Education Services and the Aga Khan Foundation (2018) indicates that digital literacy among Kenyan schools stands at 2%.

## Literature Review

Technology Acceptance Model (TAM) was conceived to explain and predict the individual's acceptance of IT. TAM is based on the Fishbein and Ajzen's Theory of Reasoned Action (TRA), which suggests that social behavior is motivated by an individual's attitude toward carrying out that behavior, a function of one's beliefs about the outcome of performing that behavior and an evaluation of the value of each of those outcomes. According to TRA, behavior is determined directly by the intention to perform, because people, in general, behave as they intend to do, within the available context and time. The TAM prediction of the user acceptance and of any technology is based on perceived usefulness and perceived ease of use. Inside the TAM, the apparent convenience (U) is characterized as the degree to which a given client accepts that utilizing a framework will upgrade his/her exhibition.

Perceived Ease of Use (EOU) on the other hand is defined as the extent to which a given user believes that by using a given system, his/her efforts will be reduced (Davis, 1989,). Both the perceived usefulness and the perceived ease of use are based on the perceptions of the users' belief about the system. According to the TAM, Perceived usefulness (U) and Perceived Ease of Use (EOU) impacts significantly on a user's attitude towards the use of a system.



**Figure 1: Technology Acceptance Model (Davis, Bagozzi & Warshaw, 1989)**

A study conducted by Lee, Ryu and Lee (2019) focused on analyzing the relationship between user perception and platforms based mobile payment services. The study found that failure to satisfy consumer satisfaction in a service that regards network externality as important has also led to the dissatisfaction of suppliers and severely hindered the service. As can be seen from the case of Korea, focusing on meeting the network externalities in operating a platform-based service will help sustain the service. Clauss, Harengel and Hock, (2019) carried out a study on the perception of value of platform-based business models in the sharing economy. The study results recognize that quality value shows no significant impact on loyalty; price only a weak impact and emotional value with a highly significant impact on loyalty.

Alshamsi and Andras (2019) study focused on user perception of Bitcoin usability and security across novice users. The study used two versions of user survey to collect data, which revealed significant differences in users' perceptions of credit/debit cards and Bitcoin. The usability attributes of both systems examined showed that respondents perceive the usability of credit/debit cards to be higher than Bitcoin. This has a great negative influence on users' security perceptions of Bitcoin. The study concluded that Bitcoin, as a crypto-currency, is still in its infancy and requires user education and a new way of thinking.

Apostolou, Bélange and Schaupp (2017) studied online communities: satisfaction and continued use intention. The results indicated that online community satisfaction is a strong predictor of continued use intention,

together with perceived usefulness and post-adoptive subjective norm. Determinants of online community satisfaction include information quality and trust of the online community platform. Singh and Rana (2017) also carried out a study of consumer perception of digital payment mode. The study found that consumer perception of digital payment has a significant and positive impact on adoption of digital payment. Yahia, Al-Neama and Kerbache (2018) perceived ease of use of the platform, facilitating conditions, hedonic motives and habits increase social commerce intent. With the everyday use of smartphones, mobile-based banking and shopping have increased, and financial innovation based on information and communication technology (ICT) has become necessary. Fintech, which is a combination of finance and technology, has emerged in response to this trend (Dahlberg et al., 2015). It is the convergence of ICT and financial services including mobile payment, crowdfunding, remittance, and asset management, and it is expected to meet the demand for various financial services due to the increase in shopping.

The most popular service among the various fintech services is the mobile payment service. Mobile payment is a payment method that uses a mobile device to pay or transfer money, and it has the advantage of being able to use the convenience of wireless infrastructure and can be used anywhere and anytime (Iman, 2018). Mobile payment has been a promising alternative to declining cash use and has been proposed as a solution for the activation of the electronic marketplace (Ondrus & Pigneur, 2006a). Menke and de Lussanet (2006) have argued that mobile payment services have already been successful in the marketplace.

A United Nations' E-government survey done by Kerby, (2014), established that even in developed countries, online transactional systems achieved modest and low usage levels. Governance reforms in the public sector showed that endeavors to bring openness to public sector agencies and improving bureaucratic accountability often face resistance from the people who are expected to champion such moves. In South Africa, a study was carried out by Maumbe, Owei and Alexander (2008) to examine E-government development in Africa.

The study focused on a case known as Cape Gateway in South Africa which is a leading project in the African continent. The study explained that many African countries have started many E-government initiatives and only focus on the key benefits while ignoring risks and challenges faced in the implementation process. That study established that many E-government applications that are effective in developed countries do not necessarily work well in developing countries due to a myriad of challenges. These challenges involve socio-economic aspects like Infrastructural limitations, lack of regulatory frameworks, citizens' attitudes due to their diverse cultures, lack of skills and competencies required and also inadequate budgetary allocation.

## **Materials and Methods**

This study adopted exploratory research design. An exploratory research attempts to establish if what is being observed can be explained by an existing theory and lays the groundwork that will lead to future studies. The choice of this design was justified on the basis that the study relied on existing knowledge to explain the existing relationship between study variables. This paper relied on desktop analysis of published papers on user perceptions and adoption of e-citizen platforms in Kenya. The study reviewed papers published between 2014 and 2020 on the adoption of online digital platforms in Kenya. The study reviewed reports from masters and PhD theses, journals, newspapers articles, social media posts relating to user perceptions on online digital platforms in Kenya. The findings, conclusion and recommendations of this study were derived from meta-analysis.

## **Results and Discussion**

This section presents the findings on user perception and adoption of e-citizen platforms in Kenya. The results show that security of the online platforms is a critical component that affects the user perception hence affecting adoption of e-citizen online platforms in Kenya. Muraya (2015) showed that security was second among the

social factors that significantly affected the adoption of e-citizen platforms in Kenya. The study concluded that the government should put in place IT Information Security mechanisms that would guarantee substantial security especially with respect to misuse of users' personal information for the purpose that it was not intended for. Online platforms involved sharing of a lot personal information hence if the security of such information is not guaranteed then user perception on the use of such platforms is seriously affected hence reducing the use and adoption of such platforms.

Security and privacy of information is another serious technical challenge identified and is a well-documented issue for e-government implementation all around the world. Participants feel that using websites to transfer their personal information (such as name, picture, and date of birth, ID number, and credit card details), sharing information with public agencies online or electronically is not safe. They are afraid that e-services websites are not secure enough to protect their private information from being misused or distorted by hackers. For e-government activities, service continuity is critical not only for the availability and delivery of services, but also to build citizen confidence and trust (Khaemba, Muketha & Matoke, 2017).

Ondego and Moturi (2016) found that good user experience would result in greater user satisfaction and vice versa. The study measured is the entire user experience during their interaction with the eCitizen portal. Ondego and Moturi (2016) found that net benefits are made up of two elements i.e. individual impact and organizational impact. e-Citizen being a one stop shop that offers most of the government services, has helped citizens in saving time as they are able to acquire various services at the same time and they don't need to queue anywhere in order to acquire these services. There has been an increase in revenue collected by the government and this has been attributed to the elimination of queues hence being able to serve as many citizens, the possibility of making payments online and the fact that digitization has made it easier for the government to follow clear procedures in the collection of money (majorly through Mpesa) and accounting for it.

Mbeche, Okeyo and Kimwele (2017) carried out a study on success factors influencing adoption and use of e-government services in Kenya by SMEs in the manufacturing sector. From the findings of the survey conducted from a sample of 124 SMEs, usefulness, ease of use, quality of the website, government regulations and incentives, organization competitiveness due to use of e-government services, faster broadband connectivity, affordable connectivity, network security and data protection and e-government awareness/training were found to be the most critical success factors that influence the adoption and use of e-government services by SMEs. Usefulness, ease of use and quality of the website are subsets of user perception which can easily be generated from early adopters.

In their study, Mutuku and Machyo (2017) found that there is a positive and significant relationship between risk and privacy (RP) and e-government use. The results indicate that there is a positive and significant relationship between perceived Usefulness (PU) and e-government use. The study recommended that the government should invest in training and awareness for e-government users. This would ensure that the users find government applications easy to use. According to this study the government can enhance user perception through training and awareness campaigns to increase adoption and use of e-citizen platforms.

A study conducted by Wasunna (2018) Data was collected through administrative questionnaires and face to face interviews with citizens and senior managers at Government Digital Services and 3 mobile money service providers offering payments on eCitizen, who were purposively selected. The results of the study revealed that citizens do not look to mobile money payments as a reason to register onto eCitizen and use it to get government services digitally. However, they perceive mobile money to provide a positive user experience compared to other methods of payment. This was influenced by its speed, efficiency and affordability, with further positive impact created by aggressive marketing by mobile payment providers for a service that was already mandated by the government. This study showed how the use of mobile money on e-citizen impacted in user perception hence significantly improving the adoption and use of e-citizen platform in Kenya.

A study conducted by Gor (2015) on factors Influencing the Adoption of Online Tax Filing systems in Nairobi found that perceived ease of use (measured by complexity; compatibility; and system support) and finally the perceived usefulness of the innovation (measured by relative advantage; triability) are some of the critical factors that affected adoption and use of online digital platforms in Kenya.

The meta-analysis conducted revealed that user perception has a significant effect on adoption and use of online digital platforms. The studies analysed which include Muraya (2015), Khaemba, Muketha & Matoke, (2017), Ondego and Moturi (2016), Mbeche, Okeyo and Kimwele (2017), Mutuku and Machyo (2017) and Wasunna (2018) all showed that in various ways that user perceptions especially on digital platforms security and privacy, usefulness, ease of use, complexity, speed, efficiency and affordability among others significantly influenced the adoption and use of e-citizen platforms in Kenya.

This study findings support concurs with study conducted by Lee, Ryu and Lee (2019) that focused on analyzing the relationship between user perception and platforms based mobile payment services and found that consumer satisfaction in a service influence the adoption and use of online platforms. The finding also agreed with Alshamsi and Andras (2019) who found that there was significant differences in users' perceptions of credit/debit cards and Bitcoin which resulted to differential adoption and use of credit/debit cards and Bitcoin.

The authors highlights that there was a need to educate the public on the Bitcoins to enhance adoption and use. The finding further concurs with Apostolou, Bélange and Schaupp (2017) whose results indicated that online community satisfaction is a strong predictor of continued use intention, together with perceived usefulness and post-adoptive subjective norm.

### **Conclusion and Recommendations**

The adoption of online platforms among private sectors player and governments continues to increase as the need to increase efficiency and effectiveness surge. Technology advancement especially increase mobile phone applications and use has ensured that majority of the people can afford to be online and consumer online services. These however, significantly changes when it involves sharing and uploading of personal information which include making online payment from personal banks accounts, uploading identification documents for people one has never met.

These information could easily land in bad hands and used for malicious purposes as it has been reported in many online tractions. This is the dilemma that many governments both developed and developing face in investing in online digitals platforms. Reported cases of personal data being used for malicious purposes has eroded public confidence and trust in online platforms. The public perception is a critical component that all the public sector players must take into consideration when launching online platforms. User perception is the reason why government achieves high or low adoption and use of some online platforms. This is in line with the proponents of Technology Acceptance Model (TAM) which predicts the adoption of online systems.

To increase adoption and use of online platforms, the following are recommended; there is need for awareness campaigns among the target users. Because of various experiences the user have had with other online platforms, implementers of new platforms have a role to play in changing the use perceptions that targeted user may have due to previous interactions. Carrying out targeted awareness campaigns is essential in changing user perception hence increasing adoption and use of online platforms.

Governments' institutions or any other institution that seek to launch online platforms must invest heavily in the security aspects and guarantee the user of privacy and security of their personal data. The increase in the cases of cyber-crimes where malicious people have access to people personal data has eroded many people confidence and trust in the online platforms, hence it is a responsibility of the government to guarantee users

of these online platforms of their security and privacy to increase adoption and use. There is a need to have quick response mechanism in place to handle the concerns that users of these online platforms such as e-citizen in Kenya raise. Having a real time response of feedback systems enhances the trust of user hence improving the user perception on online platforms.

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