

Mobile-Commerce Usage Challenges among University Students in Uganda: A Case of Kabale University

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Abstract: *Mobile commerce (m-commerce) is a new trend in e-commerce that covers a number of services that are conducted online with the help of various computing devices. These services include among others; mobile financial services e.g., mobile banking, mobile payments, mobile brokering etc., mobile shopping services e.g., mobile ticketing and mobile auctioning, and mobile entertainment services e.g., mobile music, mobile gaming, mobile movies, etc. Some of these services can help students access the University services easily and generally improve their social wellbeing and generally ease their academic process. University students contribute a big percentage of internet Users in Uganda yet their participation in M-commerce is not felt or least felt in most cases. The study established the Mobile commerce services utilized by university students and ascertained the challenges students face in using M-commerce. This study was conducted at Kabale University with an estimated population of 150 students from the faculty of Computing, library and information science, cross sectional survey method was used where data was collected using google forms and analyzed using SPSS 25 and results were statistically represented in form of tables, charts and graphs using frequencies and percentages. The findings revealed that smartphones and laptops were the top most devices used to access Internet in University. The results further showed that music, gaming and banking were most frequently accessed mobile services online however Cost of maintaining operating Internet, Preference for 'feel and touch' features of products, Security Challenges, Slow speed of the Internet, Lack of Credit Cards and Payment Systems were cited among the key challenges though skilled manpower was not a challenge to students. Therefore, the study suggests that since students own mobile devices and they can access mobile services given that they have skills, the university ought to address some of the cited challenges to have a conducive mobile commerce environment for the students.*

Keywords: Mobile-Commerce, Usage, Challenges, University Students

1. Introduction

Mobile commerce, also referred to as M-Commerce, refers to the business activities conducted via wireless telecommunication networks or usage of a mobile devices for creating transactions wirelessly. Mobile commerce now provides ever-widening content and services Lee (2008), including mobile ticketing, mobile banking, mobile marketing and other location-based services. Zhang et al (2012) Recognizes that because of the wide selection of mobile computing devices including smart phones, laptops, net books, and tablet computers, and therefore the rapidly increasing powerful mobile technologies like 4G and IoT, m-commerce is steadily emerging because the new business phenomenon and is becoming a market with great potential. M-commerce is an extension of e-commerce, whereby the transactions of companies are conducted in an exceedingly mobile environment using mobile devices. Most Kabale university students own mobile device that support M-commerce that provides them advantages of world access to information, anytime, anywhere. However, there are some challenges that these student experience while trying to access M-commerce

services, thus the explanation for this research. Therefore, the study specifically established the Mobile commerce services utilized by students and ascertained the challenges students face while using M-commerce.

2. Literature Review

2.1 M-Commerce

M-commerce is the use of mobile devices in carrying out different transactions like the buying and selling of products or providing various services to clients at any time and any where through mobile wireless networks (Jaradat & Al-Rababaa, 2013).

(Yaseen and Zayed, 2010) defined m-commerce as an “extension of electronic commerce from wired to wireless telecommunications and has ubiquity characteristics which allow customers to connect at anytime from anywhere”.

M-commerce is a branch of e-commerce involving the buying and selling of good and services over the internet with the use

of mobile wireless handled devices. M-commerce is perceived as the next generation of electronic commerce which helps customers to access internet for the purpose of making transactions from any place and time of their convenience (Amol Kale, Rajivkumar Mente, 2018).

M-commerce (MC) is an evolving, dynamic, unique and rapidly changing business opportunity with its own characteristics and concept (Lindsay, 2000).

Because of its rapid growth, M-commerce has served as a trigger for new industries and services, as well as helping existing ones grow, including:

- Mobile money transfers.
- Electronic tickets and boarding passes.
- Digital content purchases and delivery.
- Mobile banking.
- Contactless payments and in-app payments.
- Location-based services.

Mobile commerce deals with a variety of activities including transactions (for example, banking, payments, shopping, travel bookings etc), content delivery (for example sporting activities, weather forecasts, mappings of various locations, etc.), and entertainments (for example, online games, online music (including audios and videos), instant messaging services and social media (Dai & Palvia, 2004). A number of researchers have grouped m-commerce services basing on the values they do provide like the mobility, location-based access and entertainment (Clarke III, 2008; Mahatanankoon, Wen, & Lim, 2005; Ngai & Gunasekaran, 2007). Nevertheless recent studies are focused on finding out the rate of adoption of m-banking and m-payment services which appear to be of a much greater importance to a wide range of customers (Dwivedi, Tamilmani, Williams, & Lal, 2014; Kapoor, Dwivedi, & Williams, 2013; Mishra, 2015; Thakur & Srivastava, 2014; Yadav, Sharma, & Tarhini, 2016). A few researchers are focusing on other areas like content-delivery services (CDS) and transaction-based services (TBS) yet these are the ones which would be of great importance to University going students both as far as their academics and social wellbeing is concerned. Content-delivery services (CDS) deals with sending/receiving emails and news, Internet search engines and searching information such as weather, traffic and location (Mahatanankoon et al., 2005). Transaction-based services (TBS) involves banking or financial transactions using mobile, shopping for goods/services and doing travel bookings (Mahatanankoon et al., 2005; Ngai & Gunasekaran, 2007; Thakur & Srivastava, 2014).

2.2 Tools for M-Commerce

There are quite a number of mobile tools in market that companies and business owners can use to engage their customers while transacting using m-commerce (Mahatanankoon et al., 2005). These tools are used along with various electronic devices like computers, laptops, tablets, iPads, iPods, and smartphones, among others. Customers will

always use one or more of the following technologies in accessing m-commerce services from the various business owners and companies:

Short Message Service (SMS): This is a messaging tool that consists of 160 characters (including numbers, letters and special characters). It happens to be the cheapest form of m-marketing and this explains the reason why it's the most commonly used m-commerce tool. It allows business owners and companies to send bulk SMS to their customers and the customers can as well use the same tool to place their orders for a particular good or service.

Multi-media Message Service (MMS): This tool is a slight advancement of the SMS tool. Whereas SMS only allows the sending of messages containing only numbers, letters and some special characters like the punctuation marks, MMS allows the sending of pictures, audios and small videos. This tool is very important in m-commerce because it facilitates product demonstration as a way of convincing the customers.

Mobile Web Applications: Companies and business owners can use mobile web apps provided by different mobile content service providers like Amazon, yahoo, google, Azure among others; to advertise their product and services. Customers are then able to get access to these products and services through these web application by using their mobile hand devices like smart phones, laptops, iPod, iPad etc.

Location-based marketing: This tool uses some form of online and offline mechanisms to help businesses identify their potential customers with the help of GPS. This tool uses the stored customer data to deliver the required branding messages to the intended target population of consumers.

Voice: This is an emerging new tool of M-commerce. Here companies use the technique of Interactive Voice Response to offer various services to their clients (customers). The customer responds by following a set of predefined instructions to place his/her order as it is being recorded in the system.

2.3 Applications of Mobile Commerce

M-commerce is used in a number of applications (Amol Kale, Rajivkumar Mente, 2018), which include among others those which have seen enterprises and business drastically reduce their operation costs. These applications include the following;

Mobile Money Transfer: This refers to a way of performing online payment services using by a mobile phone. This makes it very quick and convenient to transfer money from one person to other by using a mobile phone irrespective of the geographical location of the sender and the receiver. M-commerce is rapidly gaining acceptance amongst the different sections of the society. This is attributed to the technological and demographic factors that have impacted a number of aspects of the social, economic and cultural behaviors of people in today's world. Such behavior have also favored

theimpressive growth in mobile money services and hence healthy signs of m-commerce growth.

Mobile ATM: With the introduction of mobile money services globally for the unbanked, various operators are now coming up with most efficient and effective ways of how to dispense and manage distribution networks that can support cash-in and cash-out transactions anywhere at any time with the help of mobile ATMs. These mobile ATMs are designed in a special way that allows for the connection of mobile money platforms and then ensures provision of bank grade ATM quality of service. (Gordon & Gebauer, 2001; Sadeh, 2002; Hu, 2005) highlights and explains more about other common m-commerce applications as below;

Travel and Ticketing: Mobile phones can be used as a means of receiving e-tickets with the use of the BARCODE technology. The Barcode technology involves sending a text message which can be scanned from the mobile phone's screen. It is this message which is presented to the scanning machine which is located at the ticket receiving point like at the airport, bus stops or railway stations.

Commerce: Commerce basically refers to the buying and selling of good and services including the transportation of such goods. M-commerce has greatly improved the convenience of commerce in a number of ways. For example customers can conveniently buy goods from a vending machine without any kind of interaction with the seller, bank clients can make a number of transactions like checking their account balance, performing money transfers among others by using their cellular phones (Hu, 2005)

Education: The usage of mobile wireless technologies in education is becoming a big trend in the recent years. It is becoming the major technology in mostly higher education (Levine, 2002; McGhee & Kozma, 2001; McKenzie, 2005) especially because of the Covid-19 effects where instructors and students are no longer able to interact face to face.

Enterprise Resource Planning (ERP):By using m-commerce, users are able to work efficiently and effectively by using the ERP systems (Siau et al., 2001). A number of ERP systems vendors are looking for effective means through which their users can use such systems on the go. In such ways, employees can be remotely connected to their places of work by using their mobile phones and other mobile wireless devices as tools for information exchange and automatic data entry (Siau and Shen, 2003).

Health Care: M-commerce's application in health care is helping to greatly reduce its high cost. By using m-commerce, doctors and nurses (medical practitioners) are now able to remotely access and make any updates to their patients' data easily. This helps to cut the administration costs and enhances service delivery. Both the medical practitioners and the patients can use mobile wireless devices like laptops and smartphones to have access to critical information like the

patient's status and available medical facilities (Larkin 2001; Banitsas, 2002; Chau et al. 2004; Varshney 2004; Rowley 2005). Most healthcare facilities that have put to use m-commerce technologies have been able to perform better by providing efficient and better quality service to their patients (Bahlman et al. 2005).

Inventory Tracking and Dispatching: Timely delivery of goods and service is very critical when doing today's transactions. Business like FedEx and DHL are rapidly adopting the usage of m-commerce technologies to achieve this goal of timely delivery. M-commerce helps businesses to keep a good track of the available inventory and make timely deliveries for the placed orders. This enhances service delivery and customer satisfaction.

Mobile Brokerage: M-commerce technologies allow various subscribers to respond to stock market developments easily and rapidly in a timely manner irrespective of their geographical location. Mobile brokerage is becoming quite famous in the recent years due to the increased adoption of m-commerce.

2.4 Challenges of Mobile Commerce

According to (Yadav, Sharma, & Tarhini, 2016), M-commerce presents four main challenges which tend to cut across all the sectors where M-commerce is being embraced. These challenges are as explained below;

Lack of awareness: The fact that m-commerce is a new technology, most people especially in rural areas are not aware of this technology and the advantages it has got to offer. Those who have a slight idea about m-commerce do not know how to make best use of it. Some people even feel insecure doing online transactions using their mobile devices. They feel it is very insecure compared to when they do physical transactions which involve direct exchange of physical money between the parties performing the transaction. This has led to slow adoption of m-commerce especially among the rural people.

Lack of easy, standardized payment: M-commerce calls for usage of online payment platforms like ATM, credit card, mobile transfers among others. Some people feel that usage of various payment platforms without a standardized payment mode makes m-commerce prone to hackers who may tap into these channels. Most of the available payment modes are online and would need an internet connection. This makes them not easy to use anywhere especially in places where there is no internet connection.

Connection between service providers & network providers: Since most of the m-commerce services are provided over the network, the various service providers have to get a connection with the network providers. The biggest challenge is that most of the service providers who are not well established find it hard to get connections with the well-established network providers whose network covers a wider geographical area. This pushes such service providers out of

business hence impacting on the rate of m-commerce usage and adoption.

Security: This has been one of the greatest challenges most researchers have highlighted as far as m-commerce usage is concerned. Customers are always worried of hacking during payments, viruses that always attack their mobile devices, among other threats. A number of users have lost their money while performing online transactions. However as more research is conducted, a lot more challenges are being presented by various researchers.

3. Methodology

3.1 Research Design

To ensure the desired goals and objectives, a survey type of research was carried out because the study is concerned with the collection of data for the purpose of describing and interpreting existing conditions, prevailing practices among other things.

3.2 Population of the Study

A Target population of 100 students was considered from Faculty of Computing, Library and Information Science, Kabale University because of their ICT skills. Using Morgan and Krejcie (1971) a sample of 80 was picked using table for determining the sample size from the said population of 100 students.

3.3 Data Collection and Analysis

For the purpose of this study, online google Questionnaires were used and self-administered to the 80 respondents. The questionnaires were set to the emails of 80 respondents and were self-administered to the students and 54 representing 68% were collected back well responded to on which the analyses were based. Simple frequency and percentage were used for analyzing the data because it explained the phenomena under study clearly.

4. Findings

4.1 Reliability of Instrument

The reliability of research instrument was tested and Cronbach alpha of 0.841 was obtained which rendered the instrument reliable for further analysis.

4.2 Demographic data

The findings of the study revealed that 86.3 percent were male while 13.7 percent were female which showed that majority of the students in the ICT sector are male as shown in the figure below.

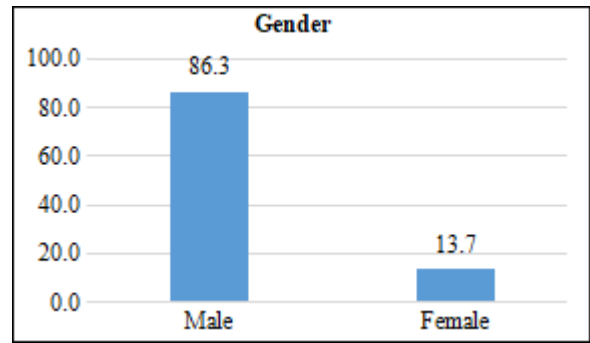


Figure 1: Gender of Participants

The figure 2.0 below showed that 13.0 percent of participants were below 20 years, 64.8 percent between 21-25 years, 9.3 percent between 26-30 percent, 11.1 percent between 30-35 percent while 1.9 percent above 35 years. This clearly showed that majority of students are in the age bracket of 21-25 years which is an age bracket of students who have completed high school education

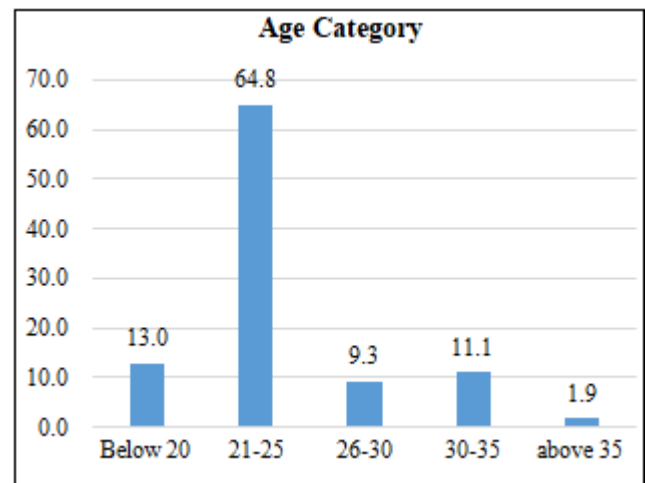


Figure 2: Age Brackets of participants

Figure 3 clearly showed that 43.4 percent of the respondents were students in their first year, 28.3 percent were in second year of study while 28.3 percent were students in their third year.

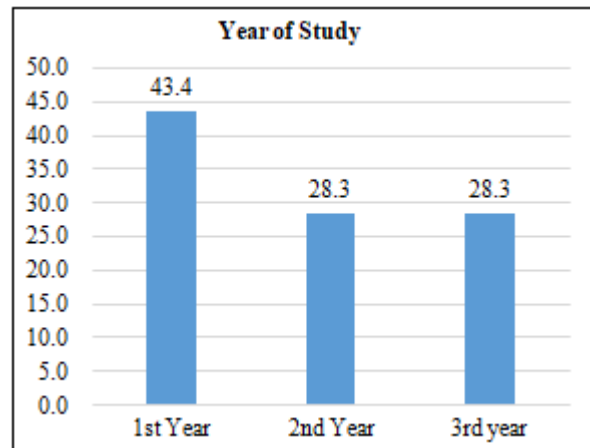


Figure 3: Year of Study

4.3 Devices used to Access Internet

Table 1: Devices used to access online Services

No	Devices Used to Access Internet	Frequency of Usage (In Percentage)				
		Never (%)	Rarely (%)	Sometimes (%)	Often (%)	Always (%)
1.	Smart Phone	0	5.7	47.2	5.7	41.5
2.	Laptop	0	2.1	45.8	12.5	39.6
3.	Desktops	0	39.1	41.3	13.0	6.5
4.	Tablet	56.4	33.3	10.3	0	0
3.	iPad	61.5	30.8	7.7	0	0
5.	Kindle	84.6	15.4	0	0	0
6.	PDA's	77.5	20.0	0	0	2.5

The study showed that the most frequently device to access mobile services was Smart Phones, Laptops and Desktops were the most frequently used devices to access mobile commerce with smartphones (41.5%) leading device followed by laptops (39.6%) always using these devices. However, the study showed that Tables, iPads, Kindles and PDAs were rarely used devices for example 84.6% of respondents reported to have never used Kindles, 77.5 % have never used PDAs while 61.5% of students have never used IPADS and 56.4% have never used Tablets to access Mobile services.

4.4 Mobile Services Accessed by Students

Table 2 below shows that mobile music was the leading service frequently access by students with 22.2% always accessing it followed by 17.8% always accessing mobile gaming, 13.3% always accessing mobile payment and 12.2% always accessing mobile banking. On another hand, 66.7% have never accessed Mobile Ticketing, 42.5 % have never accessed mobile betting it, 76.9% have never accessed mobile auctioning, 64.1% have never accessed mobile brokering and 57.1 % have never accessed mobile retailing.

Table 2: Mobile Services Accessed

No	Mobile services	Never (%)	Rarely (%)	Sometimes (%)	Often (%)	Always (%)
1	m-music	4.4	33.3	24.4	15.6	22.2
2	m-gaming	22.2	28.9	24.4	6.7	17.8
3	m-payment	8.9	28.9	40	8.9	13.3
4	m-banking	18.4	26.5	32.7	10.2	12.2
5	m-retailing	57.1	19	19	0	4.8
6	m-brokering	64.1	15.4	17.9	0	2.6
7	m-auctions	76.9	7.7	12.8	0	2.6
8	m-betting	42.5	27.5	17.5	10	2.5
9	m-ticketing	66.7	15.4	12.8	5.1	0

4.5 Challenges during access to M-commerce

Table 3 below showed the top five challenges to access Mobile commerce where participant strongly agreed that they were real problem as follows Cost of maintaining operating Internet (28.6%), Preference for 'feel and touch' features of products {B2C} -(22.5%), SecurityChallenges (18.2%), Slow speed of the Internet (15.7%), Lack of Credit Cards and Payment Systems (11.4%). However, Lack of skilled manpower (0.0%) was not a problem to any of the participant

and Preference for traditional way of doing business, Lack of interactivity in some websites, Lack of Electricity and tiresome were ranked among the bottom five challenges faced by students in accessing mobile commerce services. Other challenges were Lack of Money, Difficulty in accessing potential business offerings, Recession has affected the buying power of clients, Capability of Mobile Device used, and no regulatory framework for e-commerce policy

Table 3: Challenges during access to M-commerce

No	Challenges	Strongly Disagree (%)	Disagree (%)	Not Sure (%)	Agree (%)	Strongly Agree (%)
1.	Cost of maintaining operating Internet	2.2	17.8	22.2	28.9	28.9
2.	Preference for 'feel and touch' features of products (B2C)	12.5	17.5	25	22.5	22.5
3.	Security Challenges	6.8	25	15.9	34.1	18.2
4.	Slow speed of the Internet	11.8	17.6	13.7	41.2	15.7
5.	Lack of Credit Cards and Payment Systems	11.4	36.4	11.4	29.5	11.4
6.	Lack of Money	14.9	42.6	12.8	19.1	10.6
7.	Difficulty in accessing potential business offerings.	6.8	50	13.6	20.5	9.1
8.	Recession has affected the buying power of clients	4.4	17.8	46.7	22.2	8.9
9.	Capability of Mobile Device used	8.9	42.2	4.4	35.6	8.9
10.	No regulatory framework for e-commerce policy	4.9	36.6	29.3	24.4	4.9
11.	Preference for traditional way of doing business	9.3	27.9	27.9	30.2	4.7
12.	Lack of interactivity in some websites	2.2	20	24.4	48.9	4.4
13.	Lack of Electricity	27.9	51.2	7	11.6	2.3
14.	Its tiresome	31.1	46.7	8.9	11.1	2.2
15.	Lack of skilled manpower	11.6	39.5	23.3	25.6	0

5. Conclusion

This study revealed that smartphones and laptops are the top most devices used to access Internet in University by the students which means Universities should encourage Bring Your Own Devices which can enable students unlimited access to internet. Therefore, the results showed that student actually students access mobile services on the internet such as music, gaming and banking, however majority of the students had never accessed Mobile Ticketing, mobile auctioning, mobile brokering and mobile retailing though some had carried out mobile betting. The results further revealed that students didn't lack skilled manpower to carry out mobile commerce however Cost of maintaining operating Internet, Preference for 'feel and touch' features of products, Security Challenges, Slow speed of the Internet, Lack of Credit Cards and Payment Systems were cited among the key challenges

which means Institutions ought to address some of these challenges to have a conducive mobile commerce environment for the students.

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