# EFFECTS OF ALTITUDE, SUBJECTIVE NORMS AND PERCEIVED BEHAVIOR ON MOBILE BANKING ADOPTION TO THE UNIVERSITY STUDENTS

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## ABSTRACT

This study based on evaluating the Factors Influencing the Adoption of Mobile Banking to the University Students in Tanzania. Primary data were collected by using questionnaire from 370 respondents of Ruaha Catholic University in Iringa region. The sample was chosen from students who are taking Certificate, Diploma, Degree and postgraduate using simple random sampling technique. The analysis was performed using Statistical Package for Social Science (SPSS ver. 20, IBM, USA). The results revealed that, altitude has greater influence on mobile banking adoption to the university students through transaction service which is offered 24 hrs and speed up transaction process. Out of that the study revealed that, subjective norms influence adoption of mobile banking technology to the university students through mobile money vendor which ensures decrease in loss, maintaining time and unanticipated costs. Furthermore, the study revealed that perceived behavior control has significance influence on mobile banking adoption to the university student. Therefore, the study recommend that Banking sector should consider that financial transaction using mobile banking technology is important towards enhancing free and timely transaction to the university students and through good financial transaction technology money circulation is enhanced.

### INTRODUCTION

Across the developing world, there are more people with mobile phones than with bank accounts (Olasina, 2015). Many entities with a global development focus have turned to the mobile banking as a potential platform for delivering financial services to the people with no bank account (Kumar, Dhingra, Batra and Purohit, 2020). The adoption of internet, mobile telephony and broadband networks in many developed countries has been found to have positive effect on firms' performance since they provide speedy, inexpensive and convenient means of communication (Gayan, Nayanajith and Damunupola, 2019). The essence of mobile banking technology is to provide banking services to those who do not have bank access or bank accounts, and those who are at the bottom of the economic pyramid, often living in remote areas (Deventer, Klerk and Bevan-Dye, 2017). The services received through mobile banking among of it is viewing account balances, making transfers between accounts, or paying bills via a mobile device such as a mobile phone. The services offered through mobile banking are often performed via SMS/Mobile Internet and can use special applications downloaded to the mobile device (Wamuyu, 2014).

The banking sector in Tanzania, developments in information technology have lead to enormous effect in development of more flexible payment methods and more user-friendly banking services. The remarkable gains on mobile phone access have a progress in the scope of innovations emanating from utilization of these fairly new technologies. The factors which distinguish the Tanzanian mobile landscape are a rapid uptake of various services among them the mobile based products. Mobile banking is one innovation has progressively rendered itself in enveloping ways across numerous sectors of economy. Appropriate banking environment is considered as a key pillar and an enabler of economic growth in Tanzania. Through that, the adoption of mobile banking technology has seen to be an important platform in Tanzania economic progress since good number of people adopt the technology every day, where by students are among of the adopters. Thus, this study aimed at assessing the effect of altitude, subjective norms and perceived behavior towards adoption of mobile banking among university students.

## LITERATURE SURVEY

Influence of Attitude on Mobile Banking Adoption

Kumar, Dhingra, Batra and Purohit, (2020) the study on "a framework of mobile banking adoption in India" argued that the immediate cause of behavior is one's intention to perform the behavior: Attitudes impact conduct by their impact on aims, which are choices to act in a particular way. Perceived usefulness refers to the people's recognition that utilizing the new innovation will upgrade or enhance his or her execution. Perceived usefulness has a direct and an indirect effect through attitude toward use on behavioral intention. Perceived usefulness determines the individual's perception of behavior to gain specific reward. Perceived usefulness is a solid determinant of the adoption of technological innovations in both developed and developing markets (Tsai and Bagozzi, 2014).

The study of Yousafzai, Foxall and Pallister,(2010) on "explaining internet banking behavior: theory of reasoned action, theory on planned behavior or technology acceptance model" revealed that in the Technology Acceptance Model (TAM) and its variants, attitude toward use of a technology has been considered as an essential part to behavioral intention. Attitude overlooked as an indicator of behavioral expectation as the scientists endeavored to approve the Unified Theory of Acceptance and Use of Technology in the context of the adoption of Internet banking. Perceived ease of use is a cognitive belief that can be defined as the extent to which one trusts that utilizing a specific framework would be free of exertion. Researcher that based on perceived ease of use has a positive impact on the adoption of new technologies, such as Internet banking (Lee, Lim and Lim, 2013).

Influence of Perceived Behavioral Control on Mobile Banking Adoption

The study of Olasina, (2015) on "factor influencing the use of M-banking by academics" revealed that one of the Technology acceptance theories that are used to define Perceived Behavioral Control is the theory of planned behavior. The theory of planned behavior handles impediments in managing practices over which individuals have inadequate volitional control. The Technology acceptance theories reveal that in addition to attitudinal and normative influence, a third element, perceived behavioral control, also influences behavioral aims and genuine conduct (Yousafzai, Foxall and Pallister, 2010). The Technology acceptance theories account for conditions in which individuals do not have full control over the situation. According to the Technology acceptance theories, human action is guided by three kinds of considerations: (a) behavioral beliefs about the likely outcomes of the behavior and the evaluations of these outcomes; (b) normative beliefs about the normative expectations of others and the motivation to comply with these expectations; and (c) control beliefs about the resources and opportunities possessed/not possessed by the individual and also the anticipated obstacles or impediments toward performing the target behavior(Yousafzai, Foxall and Pallister, 2010). Tsai and Bagozzi,(2014) the study on "contribution behavior in virtual communities cognitive emotion and social influences" pointed out that according to the theory of planned behavior, perceived behavioral control is defined as an individual's impression of how simple or troublesome it is to perform a particular conduct. Behavioral control reflects access to resources, such as financial, and self-confidence in the ability to conduct the behavior.

Influence of Subjective Norms on Mobile Banking Adoption

According to Yousafzai, Foxall and Pallister, (2010) the study on "explaining internet banking behavior: theory of reasoned action, theory on planned behavior or technology acceptance model" revealed The Technology Acceptance Model considers subjective norms as one of the critical elements in influencing adoption by users. The technology acceptance model has emerged as a powerful and parsimonious model towards adoption studies. The technology acceptance model estimates that a man's acknowledgment of an innovation is controlled by his or her deliberate expectation to utilize that innovation. Intention, in turn, is dictated by the individual's state of mind toward the utilization of that innovation and his or her observation concerning its convenience (Zhou, 2011).Technology acceptance context point out that is necessary to measure beliefs regarding the use of technology, rather than the technology itself; that is, individuals might hold a positive view about a technology without being favorably disposed toward its use (Yousafzai, Foxall and Pallister, 2010).

## METHODOLOGY

Primary data were collected by using questionnaire from 370 respondents of Ruaha Catholic University in Iringa region. The sample was chosen from students who are taking Certificate, Diploma, Degree and postgraduate using simple random sampling technique. The analysis was performed using Statistical Package for Social Science (SPSS ver. 20, IBM, USA).

## RESULTS & DISCUSSION

Adoption by age

The study findings revealed that 133(35.9%) respondents were aged between 18-27 Years, 141(38.1%) were aged between 28-37 Years, 54(14.6%) were aged between 38-47 Years and 42(11.4%) were aged between 48=< Years. This implies that many university students who use mobile banking technology are in age between 18 to 37 years. Mean is greater than the standard deviation which show that the results is discussed is satisfies the evidence.

**Table 1: Age of the respondents**

|  | Frequency | Percent |
|---|---|---|
| 18-27 Years | 133 | 35.9 |

| | | |
|---|---|---|
| 28-37 Years | 141 | 38.1 |
| 38-47 Years | 54 | 14.6 |
| 48=< Years | 42 | 11.4 |
| Total | 370 | 100.0 |
| Mean | | 3.6069 |
| Standard deviation | | 0.87955 |

Adopter type

The table 2 shows the distribution of adopter type of the respondents towards mobile banking service technology, whereby 370 out interviewed respondents, 315(85.1%) were adopter of mobile money services, and 55(14.9%) were non adopter of mobile money services. The results reveal that the number of students who adopts the technology is relatively higher compared to non adopters.

**Table 2: Adopter type**

| | Frequency | Percent |
|---|---|---|
| Adopter | 315 | 85.1 |
| Non Adopter | 55 | 14.9 |
| Total | 370 | 100.0 |

Influence of altitude on mobile banking adopting among university students

Hypothesis testing

H1: Attitude has no significant influence on mobile banking adoption among university students.

H2: Attitude has significant influence on mobile banking adoption among university students.

This objective was developed to test the hypothesis on the relationship between student's attitudes and adoption of mobile banking services.

**Table 3: ANOVA[a]**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| | Regression | 60.566 | 8 | 7.571 | 12.081 | .000 |
| | Residual | 231.856 | 370 | .627 | | |
| | Total | 292.422 | 378 | | | |

a. Dependent Variable: Adoption of mobile banking to university student

b. Predictors: (Constant), Clear and understandable, Easy to use, Compatible in university transaction, Fit with the way students transact, Easy to learn, Transaction services 24 hrs, Speed up transaction, Convenience to use

The results (Table 3) show that, the model applied in this study significantly predicts the outcome variable of relationship between adoption (dependent variable) and student's attitudes (independent variable) to a large extent as demonstrated by p-value less than 0.05. This indicate that hypothesis (H1) is accepted. This finding is supported by the Theory of planned behavior which demonstrate that attitude is the general feeling of people about the desirability or undesirability of a particular issue or behavior.

**Table 4: Coefficients[a]**

| Model | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| (Constant) | 4.783 | .170 | | 28.178 | .000 |
| Easy to use | -.184 | .044 | -.225 | -4.208 | .000 |
| Speed up transaction | .060 | .019 | .158 | 3.103 | .002 |
| Convenience to use | -.020 | .040 | -.028 | -.494 | .622 |
| Fit with the way students transact | .025 | .034 | .037 | .743 | .458 |
| Transaction service 24 hrs | .134 | .038 | .189 | 3.500 | .001 |
| Compatible in university transaction | .019 | .030 | .030 | .637 | .524 |
| Easy to learn | .118 | .036 | .162 | 3.279 | .001 |
| Clear and understandable | -.132 | .036 | -.184 | -3.708 | .000 |

a. Dependent Variable: Adoption of mobile banking to university student

The finding (Table 4) show a significance of 0.002, that mobile banking has good effect on financial transaction since speed up the process. Therefore, the findings reveal that effect of mobile banking transaction process open up an attitude of university students to adopt the technology and it services in financial transaction. Perceived usefulness refers to the people's recognition that utilizing the new innovation which upgrade or enhance his or her implementation, thus when university student perceive that mobile banking will help to speed up transaction leads them to adopt the technology (Yousafzai, Foxall and Pallister, 2010). Furthermore, the results show that mobile banking leads to good financial transaction process with transparency way which leads to increase awareness of students to adopt the technology. The quality, accuracy and timeliness of mobile banking in financial transaction are generally good.

The study is in line with Kumar, Dhingra, Batra and Purohit, (2020) who argued that the immediate cause of behavior is one's intention to perform the behavior where by attitudes impact conduct by their impact on aims of choices to act in a particular way.

Also the results show that there is a significance value of less than 0.05 to towards mobile banking in doing transaction throughout a day which indicates that through mobile banking university students feels is better to use in order to simplify transactions at any time. This means that the results accept effect of mobile banking in financial transaction influence adoption to university students which is strong supported by the significance level of 0.001.

For the case of learning, clear and understandable, that learning about mobile banking technology is less likely to influence university student to adopt the technology, supported by negative slope (-.184 and -.132 respectively) with significance level of .000 each. Furthermore, University students were not likely to adopt mobile banking technology because of factors namely; Compatible in university transaction, Fit with the way students transact and Convenience to use.

Influence of Subjective Norms on Mobile Banking Adopting
Hypothesis Testing
H0: Subjective norms has no significance influence on mobile banking adoption to the university students
H1: Subjective norms has significance influence on mobile banking adoption to the university students
The results show that adoption of mobile banking technology (dependent variable) is explained by some factors which are extracted from subjective norms (independent variable).

**Table 5: ANOVA**[a]

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 91.260 | 7 | 13.037 | 24.044 | .000 |
| Residual | 201.162 | 371 | .542 | | |
| Total | 292.422 | 378 | | | |

a. Dependent Variable: Adoption of mobile banking to university student
b. Predictors: (Constant), Friends influence, Lecturers influence, University support, Mobile money vendor influence, Government support, Sponsor

The results provided in table 5 shows that, the model applied in this study statistically significantly predict the outcome variable of relationship between adoption (dependent variable) and student's subjective norms (independent variable) to a large extent as demonstrated by p-value less than 0.05. The hypothesis (H1: Subjective norms have significance influence on mobile banking adoption to the university students) is accepted. Further analysis an individual indicator on predicting adoption of mobile money services is described in the table 6.

**Table 6: Coefficients**[a]

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| (Constant) | 4.883 | .135 | | 36.262 | .000 |
| Friends influence | -.128 | .074 | -.174 | -1.731 | .084 |
| Lecturers influence | .016 | .076 | .022 | .217 | .828 |
| Mobile money vendor influence | .117 | .045 | .131 | 2.587 | .010 |
| University support | -.052 | .058 | -.057 | -.886 | .376 |
| Government support | -.007 | .043 | -.010 | -.169 | .866 |
| Sponsor | -.398 | .055 | -.386 | -7.229 | .000 |

a. Dependent Variable: Adoption of mobile banking to university student

The findings reveal that vendor influence in mobile banking use has strong effect towards influencing students to adopt the technology, this is indicated by a level of significance of 0.010 (Table 7). Therefore, the findings reveal that mobile banking adoption to university student is influenced by Mobile money vendor concern and directives towards application of it. Thus, since the significance level is less than 0.05; means that, the higher the influence of mobile money vendor's the higher the possibility of university students to adopt the technology.

The findings from (Table 6) show that, University, Friends, Lecturers and government support on financial transaction through using mobile banking has no significance effect to the students adoption on mobile baking technology which supported by a poor significance level of greater than 0.05.

Influence of Perceived Behavior Control on Mobile Banking Adopting
Hypothesis Testing

H0: Perceived behavior control has no significance influence on mobile banking adoption to the university students
H1: Perceived behavior control has significance influence on mobile banking adoption to the university students

**Table 7: ANOVA[a]**

| Model | Sum of Squares | DF | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 15.519 | 7 | 2.217 | 10.383 | .000 |
| Residual | 79.215 | 371 | .214 | | |
| Total | 94.734 | 378 | | | |

a. Dependent Variable: Adoption of mobile banking to university student
b. Predictors: (Constant), Government policy and regulation, Low cost of mobile money services, University ICT policy, Availability of agent services, Low cost mobile device, Mobile banking services provider, Availability of network

The results provided in table 8 shows that, the model applied statistically significantly predict the outcome variable between dependent variable and independent variable to a large extent as demonstrated by p-value less than 0.05 in above ANOVA table. This reveals that the hypothesis (H1: Perceived behavior control has significance influence on mobile banking adoption to the university students) is accepted. The findings is supported by Ajzen, (1991) who revealed that individual's perception about ease or difficulty of doing behavior and perceptions about required skills, resources, and opportunities influence the adoption of a particularly technology.

Furthermore the analysis of an individual indicator on predicting adoption of mobile banking technology which is within the perceived behavior control is narrated in table 8:

**Table 8: Coefficients[a]**

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| (Constant) | 1.474 | .065 | | 22.650 | .000 |
| Low cost of mobile money services | -.060 | .029 | -.153 | -2.077 | .039 |
| Mobile banking services provider | .036 | .030 | .092 | 1.183 | .237 |
| Availability of network | -.062 | .031 | -.158 | -2.010 | .045 |
| Availability of agent | .084 | .031 | .200 | 2.691 | .007 |
| Low cost mobile device | .229 | .028 | .534 | 8.121 | .000 |
| University ICT policy | -.009 | .027 | -.019 | -.341 | .733 |
| Government policy and regulation | -.062 | .036 | -.099 | -1.714 | .087 |

a. Dependent Variable: Adoption of mobile banking to university student

The findings reveal that availability of low cost mobile device has strong influence to the university student to adopt mobile banking technology in financial transaction process. The findings proved by a strong significance level of 0.000 (Table 9). The study is supported by Ndekwa, Ochumbo A. J; Ndekwa A. G and John K. E (2018) Low cost mobile devices have a positively relationship with students' mobile banking adoptions, that is the more low cost of mobile devices are, the more likelihood they are to facilitate students' mobile banking adoption.

Also the study reveals that cost of mobile money transaction enhance the adoption of mobile banking to the university student which simplifies financial transaction process. Thus the responses from the respondents confirm that there is significance (0.039) influence between perceived behavior and mobile banking adoption to university students through cost of mobile money.

The findings reveal that mobile banking services agent remits management responsibility in financial transaction process which leads in high clarity of financial transaction time management which results in influencing university students to adopt the technology. The findings proved by a strong significance level of 0.007 (Table 8). Thus the responses from the respondents reveal that there is strong significance on influence of perceived behavior to the university student's mobile banking adoption through mobile banking services agent. The results revealed that Government policy and regulation, Mobile banking services provider, University ICT policy does not influence mobile banking adoption to the university students. The findings proved by a weak significance level of less than 0.05. Thus the responses from the respondents reveal that there is no significance influence of perceived behavior through University ICT policy, Government policy and regulation, Mobile banking services provider to the university student's adoption of mobile banking in financial transaction.

Predictor Effects

The regressions were used to test if four variables (Attitudes, Subjective Norms and Perceived Behavior Control) significantly predict behaviour intention towards university students to adopt mobile banking services. The results indicates that altitudes, subjective norms and perceived behaviour found to be uniquely, significantly and positively influence the prediction of behaviour intention on mobile banking adoption ($\beta=.421$ p=.000), ($\beta=.318$ p=.000) and ($\beta=.325$ p=.000) respectively (Figure 1). Thus H1, H3 and H4 testing the effect of altitudes, subjective norms and perceived behaviour were supported.
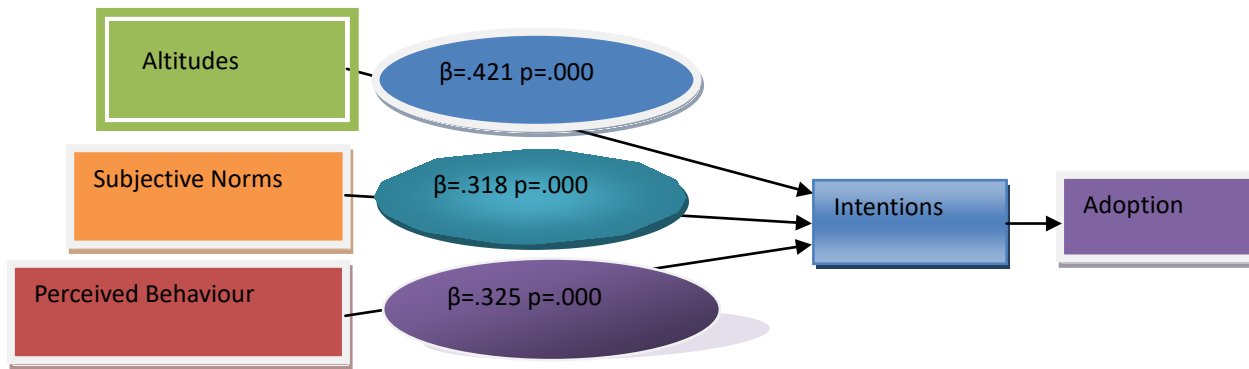
## CONCLUSION

The study concludes that attitudes construct which was borrowed from Theory of planned behavior is applicable in studying student's adoption of mobile money services when modified to fit the social context. The subjective norms are significantly explained by classmate and friends in this study have a significant relationship with students' adoption of mobile money services.

Once a commitment is made, the mobile banking trace all the stages of the transaction processing from timely financial releases, commitment, purchase, payment request, reconciliation of bank statements and accounting of expenditure. Furthermore mobile banking provides the information to ensure improved efficiency and effectiveness on financial services. Generally, mobile banking increased availability of comprehensive financial information on current financial control and improved economic forecasting, planning, and budgeting.

## RECOMMENDATIONS

The study recommend that, University students should be aware that financial transaction through mobile banking directed at facilitating changes in financial sector practices has a significant and positive impact on reducing financial transaction problem and improving money circulation which result into good creation of future financial transaction improvement. Also mobile banking financial programs have been found to increase the banking and communication sector progress, confidence in mobile banking technology development, change in customer's attitudes in positive directions and improve financial utilization.

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