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THE INFLUENCE OF FUNCTIONAL, HEDONIC AND SOCIAL ASPECTS ON SATISFACTION OF SMARTPHONE USERS IN TANZANIA

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***Abstract**: Despite the usage of smartphone to grow exponentially, the satisfaction and factors influencing it are less explored. The literature suggests functional, hedonic and social values to be possible predictors of satisfaction with smartphone. Using a self administered structured questionnaire, a convenient sample of 270 university students that yielded 247 dully filled questionnaires with data subjected to partial least square path modeling using SmartPLS 3 to test both the measurement and structural models. The results indicate all the hypothesized antecedents to be significant predictors of satisfaction with smartphone. The functional value of smartphone was observed to be the leading contributor to satisfaction while hedonic value to be the least significant contributor in satisfaction. Theoretically the finding suggests modification in the models explaining satisfaction with electronic gadgets like smartphone by incorporating hedonic and social values together. Practically, the results provide marketing insights on how smartphone can be marketed to the youth by including all the four predictors in marketing communications as well as in the design of smartphone.*

Keywords: *Functional, Hedonic, Social, Smartphone, Satisfaction*

1. Introduction

The number of smartphone mobile network subscriptions worldwide reached almost seven billion in 2023, and is forecast to exceed 7.7 billion by 2028 with China, India, and the United States being the countries with the highest number of smartphone mobile network subscriptions leaving Tanzania with approximately 105 mobile cellular subscriptions per 100 inhabitants (Statista, 2024). The escalating number of smartphone users emanate from the utility of the gadget in voice, data, e-mail, social networking and myriad internet applications. People began to like smartphones as they can purchase, order, pay, and consume online products (Kennedy, 2015). People use smartphone for different purpose example they can use smartphone for traveling purpose especial those who like to take video capture and map services and others use for Instagram and playing games (Meng et al., 2014). Some of the smartphone users are very selective in picking out different functionalities of their devices. Users need to have knowledge of obtaining of a certain application and using them in a right way (Park et al., 2012). Smartphone usage in educational science environments has the

potential for rather positive effects, such as an increase in learning achievements or an increase in motivation, and smartphone usage rarely leads to detrimental effects (Ubber et al., 2023).
The continuous popularity of smartphone usage has led into a stream of research appraising the antecedents of smartphone usage. Lusekelo and Gervas (2015) urged that students used smartphones for relaxation or leisure purpose, and not for academic purpose or developmental function. Despite of the growing interest in smartphones uses but a few research has been done and little is known on how people uses their smartphones, is it for functional, social or hedonic use? Also if they get satisfaction by using it and in order to understand that research is needed. Kong and Tan (2023) indicated that hedonic motives were positively linked with problematic smartphone use. With the social use; Rotondi et al. (2017) suggested that, due to its intrusiveness, the smartphone reduces the quality of face-to-face interactions and, as a consequence, their positive impact on well-being. The aware smartphone mode of use reflects an active lifestyle, while the unaware mode of use reflects the use of the smartphone in conjunction with other activities (Sela et al., 2022). This study helps to know how people use the smartphones whether it is for functional, social or of hedonic use. This study helps developer of smartphones application or mobile application specialists to understand not only the need of the uses but also decision of marketers to develop and promote a specific functionality of smartphone based on the interest of the users. Thus, the specific objectives of this study are to determine the influence of functional use, social use and hedonic use on smartphone users' satisfaction.

2. Literature review

2.1 Functional use of smartphone

Ochs and Sauer (2022) studied on the disturbing aspects of smartphone usage behaviors by using the method of 'thematic analysis' and discovered eight themes. Five themes related to reasons for use, including inevitability, habitual use, avoiding unpleasant circumstances, need satisfaction and fulfilling social expectations. Three themes referred to consequences of smartphone usage (life management, social life, and online life). The study of users and non-users of smartphones for travel done by Meng et al. (2014), was develop for the aim of understand the individual process to adopt the smartphone for travelling purpose. They categorized smartphone user into user and non-user according to their use of their smartphone. The study revealed that smartphone user for travelling purpose are very high although not all the user of smartphone use their device for travelling. And there is no difference in general use of smartphones in terms of length and daily use. The study by Zhao et al. (2015) explained about the usage of smartphone for unmanned aerial vehicle (UAV) where this method helps the user of smartphone to detect the smartphone sensor accuracy without using any special instruments and the result was reveal that using the smartphone for UAV are found to be both indoor and outdoor effective of the boundary condition for localization condition. On the other hand the study of Nyheim et al. (2015) explained that the smartphone used in advertisement and the study wanted to personalized smartphone advertising avoidance in a restaurant context and the result reveal smartphone advertising irritation has direct relation with advertising avoidance.
Although on the study of smartphone effect on academic performance on higher learning students done by Lusekelo and Gervas (2015), reveals that small percent of students are using the smartphones for education purpose but majority of them use the smartphones for social use such as Twitter, WhatsApp, Facebook and Instagram. Ahmed (2012) indicated that all students at college use their smartphones for texting massaging, while nine in ten of the students use their smartphones for email and for finding coupons and deal. Eight in ten of students use their smartphones for GPS navigation,

checking news and making voice call. Seven in ten of students use their smartphones for checking weather and concluded majority of the students at collage have positive perception that smartphone will help them in their academic performance. Amez and Baert (2020) reviewed the scientific literature to date on the relationship between smartphone use and academic performance in tertiary education and revealed a predominance of empirical results supporting a negative association.

Also the study by Tsai and Ho (2013) explained how the design affordance affect the usage of smartphone in terms of design feature, functional affordance, descriptive belief and inferential belief and the result revel that diversity has a direct relationship with the perceived ease of use and perceived usefulness on the use of smartphone although intuition has a relation with perceived ease of use and not perceived usefulness. A study by Abeynaike (2012) on the application of the smartphone in medical research indicated that most of the researcher become more productive as they use smartphone however most of them they did not utilize application and none utilized field specific application in the laboratory, also concluded that smartphone are not used to their full potential in the laboratory. Jeong et al. (2024) investigated the serial mediating effects of depressive symptoms and cognitive function on the relationship between smartphone usage and life satisfaction among older people and found that the status and level of smartphone usage had significant positive impacts on cognitive function and life satisfaction, and negative impacts on depressive symptoms.

People can use smartphone to conduct online survey and there are different ways in which user of smartphone can deploy an online survey depend on the type of smartphone they use (Buskirk & Andrus, 2014). Also Kennedy (2015) said that smartphone user use their smartphone to access the internet where they will use to make a purchase and even to make a transaction without going to bank also shift of money from one bank account to another by using smartphones, all this payment are done online. In the study of Park and Chen (2007) tried to look how human motivation can affect the decision of adopting smartphone for doctors and nurses. The result indicated that the intention of using smartphone is much influenced by the perceived ease of use (PEOU) and perceived usefulness (PU) of adopting smartphone for doctors and nurses. And both PEOU and PU were positive related to the adaptation and the usage of smartphone. Nautiyal et al. (2024) aimed to investigate the perspectives of older Indian adults regarding smartphone adoption and its usage in healthcare services and the findings revealed that older adults have adopted smartphones for various purposes after initially facing hindrances, often with assistance from family members. However, the use of smartphone-based healthcare applications remains minimal.

Smartphone has been increase the level of internet literacy and usage of internet for old people as the results found on the study which tries to see the effect of smartphone on the internet literacy (Hong et al., 2016). Valenti and Faraci (2024) highlighted the conceptual overlap between Internet and smartphone addiction by investigating whether the Internet Addiction Test (IAT) and the Smartphone Addiction Scale-Short Version (SAS-SV) capture separate Internet-related disorders findings suggested that they do not effectively capture two distinct constructs. By considering the use of smartphone application to order food and drinks in restaurant, smartphone has been used to promote healthy eating behavior by proving a range of services that can be used to improve daily habit of the users, also smartphone help its users to keep with their diet and daily exercise routine (Okumus & Bilgihan, 2014). Beaulieu-Bonneau et al. (2024) studied the use of mobile devices after acquired brain injury (ABI), from the perspectives of injured individuals and significant others, and also examined factors associated with mobile device use for cognition. I was found that mobile device use for cognition was common (64%), predicted in a regression model by lower subjective memory and more positive perception of the psychosocial impacts of technology, and also associated in univariate analyses with younger age, lower executive functioning, and greater use of memory strategies.

2.2 Hedonic use

Hong et al. (2023) explored the role of social presence, hedonic value, perceived value, and learning outcome, and their correlates and results showed considerable efficacy of the learning outcomes, revealing a positive correlation between social presence, hedonic value, perceived value, and learning outcomes. Kim et al. (2014) tried to explain the antecedent affecting application usage among the smartphone users. The study revealed that users tend to use the application for informative, entertaining needs and they did not use smartphone for communication purpose. While the study of why do people play mobile social games? an examination of network externalities and of uses and gratifications which was done by Wei & Lu (2014), showed that users play social interactive game on their smartphone for enjoyment. Enjoyment has been an important variable which make user to play a social game on their mobile. Some users use the smartphone for enjoyment where most of the people tend to download and play game, most of the game players prefer the social games due to social interaction and enjoyment they get when they are using smartphones (Wei & Lu, 2014). On the other hand the studies of Meng et al. (2014) and Turel et al. (2010) indicated that others use smartphones for listening to the music through downloading different applications and get access to the music, as most of the people gets enjoyment when they are listen to the music. While Ahmed (2012) said that college students use their smartphones devices for enjoyment where about eight in ten of the students use their device for playing music. Ie Roux et al. (2024) studied the effects of smartphone use during play on performance and enjoyment among recreational golfers and results indicated that smartphone use for work-related purposes has a small negative effect on performance; but that smartphone use for personal purposes has no effect. They further found no direct relationship between smartphone use and round enjoyment, but proposed that it may indirectly impact enjoyment through its impact on performance.

2.3 Social use

Sun et al. (2023) investigated the correlation between smartphone usage patterns and social capital among Chinese college students, while also examining the moderating effect of sociability revealed that college students' mobile phone usage can be classified into five distinct patterns which are low entertainment usage, balanced low-frequency usage, social and convenience-centric usage, balanced high-frequency usage, and entertainment and convenience-centric usage. They further pointed out that social interaction ability had a positive moderating function in the association between social and convenience-centric and balanced high-frequency usage and social capital levels. The study of Lusekelo & Gervas (2015) tried to understand the smartphone effect on academic performance of high learning student find out that most of the student use their smartphone for social where by majority of student were addicted to the application which are found on their smartphone like twitter, WhatsApp, Facebook and Instagram, also student spend most of their time in accessing the social media chatting and socialize with their friend and get new relationship. Also on the study of Mansour (2016) showed that social application like Facebook and twitter were most popular for students as they spent more time on social application and for professional most students use their smartphone more for communication purpose other than learning and have positive feeling with the applications which they have less negative concerns. A study by Vorley and Williams (2016) indicated that smartphones have been used in teaching as a tools to understanding and increase entrepreneurial confidence as well as skills. This is supported by Chou and Lin (2023) who urged that implementing effective social entrepreneurship can result in a better redistribution of wealth and well-being in society; social mediating technologies are digital transformation tools that can fulfill specific goals and the success of social entrepreneurship.

While on the study of millennial generation performance and usage of mobile device in the US which was done by Ahmed (2012) indicated that all student at college use their smartphone for texting messaging and eight in ten use their smartphones for functional use like email and GPS. About seven in ten of the students at college are using their mobile device for accessing the social media. Park and Lee (2015) studied the usage of smartphone in a new dimension as the level of usage, awareness and usability conducted for college students. Findings indicated that more people who are using smartphone had more online friends and most of them spent their time online for social network such as twitter and Facebook. Tufan et al. (2024) examined how smartphone-related behaviours, such as phubbing and smartphone addiction (SPA), are associated with fear of missing out (FoMO), being phubbed (BP) and friendship satisfaction (FS). The study surveyed 811 university students and the findings showed that FoMO positively correlated with phubbing, with SPA as a partial mediator, suggesting that reducing SPA could mitigate phubbing. Results also showed that BP moderated the relationship between these variables, influencing the effects of phubbing on FS.

Lusekelo and Gervas (2015) investigated the effect of using smartphone in academic performance in Iringa, Tanzania and results indicated that there was a negative effect of using smartphone in academic performance. About 48% of the total respondents were found to spend most of their time like 5 up to 7 hours per day in social communication sites such as Facebook and twitter without considering that they could use that time for academic issues like searching for information on the websites for academic purposes (Lusekelo & Gervas, 2015). On the other hand the study of why do people play mobile social games which was done by Wei and Lu (2014) it was revealed that users use their smartphones to play social games because of the social interaction with other users and networks. It was observed that social interactions have been the major variable for play social game. Cabezas-González et al. (2024) explored whether the use made by children of video games, social media, and smartphones in their free time influences the development of digital competence as regards safety; they found that while students enjoy playing video games and using certain social media, mainly through smartphones, they are not digitally competent.

Borrowing from the Theory of Planned Behavior (TPB), particularly the social norm factor, it can be argued that social norm can be a possible factor influencing smartphone user satisfaction. Subjective norm can be defined as the perceived social pressure to perform or not to perform a certain behavior. Subjective norms are practically independent of attitude toward the behavior, people can perceive favorable attitude toward a certain behavior and yet can perceive social pressure not to perform it (Ajzen, 1991). By applying the protection motivation theory and theory of planned behaviour in understanding the parental mediation strategy, Sharma and Lee (2024) explored parents' perception of their own responsibilities and the development of appropriate policies and legislation to curve the risk of digital media in their children's lives; they reveal that the fundamental variables of protection motivation theory and the theory of planned behaviour are mostly held to explain the psychological and external-environmental factors that impact parents' digital media mediation strategy.

Derived from the literature, the following hypotheses were proposed:

Hypothesis 1*: Functional use of smartphone has a significant influence on customer satisfaction*

Hypothesis 2*: Hedonic use of smartphone has a significant influence on customer satisfaction*

Hypothesis 3*: Social use of smartphone has a significant influence on customer satisfaction*

3. Methods

Data for this study was collected using structured questionnaires distributed conveniently in two college campuses in the University of Dar es Salaam. Potential respondents were approached and requested to participate in the study. Upon agreeing to participate in the study, the respondents were given the questionnaire to fill in. The questionnaire had 2 sections; the first section captured demographic variables using nominal and ordinal scale questions while the second section captured the functional, hedonic, social use of smartphone and the social norms factors in the usage of smartphone and satisfaction with the use of smartphone. The second part of the questionnaire was composed of 5 point Likert scales with 1 indicating strong disagreement, 5 for strong agreement and 3 for neutral. In order to ensure reliability and validity, the items were adapted from previous studies that obtained reasonable validity and reliability of the scales. Prior to the final data collection, the questionnaire was piloted with 50 respondents with the factor and reliability analyses indicating the factors to load into their respective dimensions and Cronbach alpha exceeded 0.6.

Out of the 270 distributed questionnaires, 247 were dully filled and used in the final analysis. Among 247 responses, 52.2% were males; 38.9% belonged to the age group of 25 or less; 38.8% were between 26 to 40 years of age and the rest were above 40 years. About half (49%) of the respondents were college students while 12.6% were self-employed while the remaining being employed. To test the hypotheses, Structural Equation Modelling Approach was employed using Smart PLS 3 tool. The use of Smart PLS is recommended when sample sizes are small to medium and when the data are non-normal (Hair et al., 2017). Two steps approach to assess the measurement and structural model was adopted (Anderson and Gerbing 1988).

4. Results

Measurement model was first appraised for reliability and validity using Smart PLS 3.0. The reliability of the reflective indicators for the constructs used in this study was appraised using Cronbach's alpha, Composite reliability and outer loadings with results indicating all to be the recommended levels (Hair et al., 2017) as shown in Table 1. The convergent validity was assessed using the Average Variance Extracted (AVE) with values for the entire construct crossing the recommended mark of 0.50.

Table 1: Validity and Reliability of Constructs

Construct and Item	Outer Loading	Cronbach's alpha	CR	AVE
Functional		.797	.881	.712
F1-smartphone improves my information-seeking performance	**0.789**			
F2-smartphone makes it easier to seek informtion	**0.875**			
F3- I find smartphone useful in seeking information	**0.866**			
Hedonic		.736	.850	.653
H1- smartphone allows me to be more entertained	**0.823**			
H3-smartphone makes life to be more fun	**0.796**			
H4- smartphone is a source of entertainment	**0.805**			
Social Value		.690	.828	.616
SU2- smartphone improves my social life	**0.759**			
SU3- smartphone makes it easier for me to communicate with friends and relatives	**0.818**			

SU5- smartphone add value to social media	**0.777**			
Satisfaction		.704	.871	.773
Overall, I am happy to use smartphone	**.882**			
Overall, I am satisfied with the benefits I obtain from using smartphone	**.875**			

The discriminant validity using Fornell-Locker criteria was used. Specifically, the criteria require the AVE of each construct to be larger than square correlations between the constructs (Hair et al., 2017). Results in Table 2 indicates all the AVE to be well above the squared correlations indicating the measurement model to have a higher discriminant validity.

Table 2. Discriminant validity

	Functional	Hedonic	Satisfaction	Social usage
Functional	0.844			
Hedonic	0.352	0.808		
Satisfaction	0.499	0.408	0.878	
Social usage	0.423	0.478	0.479	0.785

Structural model and path analysis

The validation of the measurement model was followed by the evaluation of the structural model with 5000 iteration bootstrapping procedure. The results with path coefficients are presented as Table 3 which show all the four predictors to have a significant impact on satisfaction with smartphone, thus supporting all the hypothesized relationships. In total, 41.3% of the variations in satisfaction with smartphone is explained with the four predictors (Adjusted R^2 = 40.3%). Using blindfolding technique to assess the predictive relevance of the model, the resulting Q^2 was .289. Using Hair et al., (2017) criteria for R^2 and Q^2 the model moderately predicts satisfaction with smartphone.

Table 3. Estimated results of the structural model and hypotheses test outputs

Hypothesized relationships	Path coefficient	SE	t-value	P-value	Results
Functional→ Sat.	0.277	.073	3.988	.000	Supported
Hedonic →Sat.	0.158	.059	2.419	.008	Supported
Social usage → Sat.	0.203	.085	2.299	.017	Supported

5. Discussion

The first objective was to determine the influence of functional use of smartphone on user satisfaction. What has been found and observed from the research findings is that there is a significance influence of functional use on the usage of smartphone and user satisfaction. A positive relationship confirmed between the functional use and the user satisfactions; the more the people use their smartphone for functional use the more satisfaction they will get. Also people tend to use their smartphone more for functional use than hedonic and social uses.

Functional use of smartphone has more significance influence on the customer satisfaction than other variables as it contributes 34.7% to the customer satisfaction. This result is very similar with other studies which found that smartphone has been used for functional usage but none of them has mentioned how users of smartphone get satisfaction by functional use of smartphone so this stud has a contribution that users of smartphone they get satisfaction by using the smartphone (Abeynaike, 2012; Ahmed, 2012; Buskirk & Andrus, 2014; Kennedy, 2015; Lusekelo & Gervas, 2015; Meng et al., 2014; Nyheim et al., 2015; Park & Chen, 2007; Tsai & Ho, 2013; Zhao et al., 2015). The results also indicate that there is no demographic variation on the usage of smartphone for functional use in terms of age and gender while on the study by the Teh et al., (2014) found demographic variation in terms of age where youth consider convenience as the primary factor for them to use NFC SES while adult found to consider intuitive and perceived usefulness as the determinant of their individual behavior to use NFC SES.

The second objective was to determine the influence of hedonic use of smartphone on user satisfaction. Rresults indicate that there is a significance influence of the hedonic use of smartphone and user satisfaction. Results suggest that the more the people use their smartphone for hedonic purposes the more the satisfaction they will get due to the positive relationship between hedonic use and user satisfaction of smartphone. It has been further observed that the hedonic use of the smartphone has a small significance influence compare to the other variables as it contributes 11.2% to the customer satisfaction. Results further indicate that there is a demographic variation in terms of gender on the usage of smartphone for hedonic purposes where female has been found to use their smartphone more for hedonic purposes than male and found no demographic variation on the hedonic use in terms of age. The current study findings do support previous findings (Apaolaza-Ibáñez et al., 2011; Hanzaee & Rezaeyeh, 2013; Nejati & Moghaddam, 2013; Ryu et al., 2010; Ying et al., 2016) showing that there is a significance influence of hedonic use to the customer satisfaction where by the more hedonic use has been applied the more the satisfaction they will get.

The third objective was to determine the influence of social use of smartphone on user satisfaction. The observed result from findings indicate that there is a significance influence of social use of smartphone and user satisfaction which means that there is a positive relationship between the social use of smartphone and user satisfaction. The more people spend on using their smartphone the more the satisfaction they will get. People who use their smartphone for social use as Facebook, twitter and WhatsApp contributes to about 18.3% to the customer satisfaction. This result is also similar with the studies (Ahmed, 2012; Kim et al., 2014; Meng et al., 2014; Turel et al., 2010; Wei & Lu, 2014) which found that smartphones have been used for social proposes although none of them indicated the satisfaction users of smartphone they get by social usage of smartphone. This study has a contribution that users of smartphone they get satisfaction by social usage of their device and the more they use the more satisfaction they get. But it has been also observed that there is no demographic variation in terms of gender and age on the usage of smartphone for social use.

6. Conclusion

The research problem for this study was to determine the influence of hedonic, functional and social value on smartphone customer satisfaction. How do people use their smartphone? Do they use their smartphone for social, hedonic or functional? And do they get satisfaction from using it? From what is seen in the above findings is that people use their smartphone for functional use than any other use as they searching for information. The rank in the usage of smartphone for the three variables starts with functional, social and lastly is hedonic use. This leads to conclude that many people are using their smartphone for information seeking and the people who are using more smartphone are the people with the age less than 41 and male tend to use smartphone than females as male are so much interested in new technology than female. Governments and other stakeholders should encourage females to engage more in technology as it shows that female and older people are not much interested in technology than males, youths and teenagers. So the priorities should include the policies and regulatory guidelines that encourage female to engage more in technology the same as male.

It is evident that there are rapid technological changes around the world smartphone has been gaining its popularity day by day as time goes on. Before developing the system or application for smartphone users then the programmer should seek the information first on what users of smartphone wants, which will help to give the programmer a clear picture of what to develop or to program for the user of smartphone. As from this study it shows that more people use their smartphone for functional use so if the programmer invent more on the application which deals with the functional use the more customer will be satisfied. There exist lack of literature and little is known on demographic variation on the usage of smartphone for functional, social and hedonic. Therefore, area for further study would be assess the level of demographic variation on the usage of smartphone for functional, social and hedonic uses as this study found no demographic variations in terms of gender and age in the functional and social use as opposed to hedonic use.

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