

# DETERMINANTS OF CONSUMERS' KNOWLEDGE ON THEIR RIGHTS IN TELECOMMUNICATION MARKETS: CASE OF TANZANIA

Hilda Mwakatumbula<sup>1</sup>, Goodiel Charles Moshi<sup>2</sup> and Hitoshi Mitomo<sup>1</sup>

<sup>1</sup>Graduate School of Asia-Pacific Studies (GSAPS), Waseda University, Japan

<sup>2</sup>College of Informatics and Virtual Education (CIVE), University of Dodoma, Tanzania

## ABSTRACT

*In modern telecommunications markets, consumers play an important role in maintaining competitive forces in the markets. Consumers shape the industry by either opting to consume services from the most efficient producers, or seeking for redress whenever service providers perform below the set standards which results in breach of consumer rights. Particularly on the later, consumer assertiveness to seek redress is hinged on their knowledge of consumer rights in the telecommunications industry, ability to recognize when their rights are breached, and understanding the institutions to follow in seeking redress. This paper uses the ordered logit (Ologit) regression model to study determinants of consumer knowledge on their rights in the telecommunication industry in Tanzania.*

*The results of this study show that populations living in rural areas, of old age and low income are the least knowledgeable on their rights as telecommunications consumers; thus, the most vulnerable. Further, the awareness of the National Regulator Authority (NRA) in communication, which is the central institution in dealing with consumer empowerment and protection, and usage of social media have positive influence on consumer knowledge on telecommunications rights. The study concludes with policy recommendation for policy makers, to address the lack of consumer knowledge on the telecommunications sector particularly among the most vulnerable consumers who constitute larger part of the country population.*

## KEYWORDS

*Telecommunications, Consumer protection, Consumer knowledge, Consumer empowerment, Developing countries, Tanzania*

## 1. INTRODUCTION

Consumer rights, laws and regulations, related to telecommunications sector have been adopted in developing countries in recent years following the proliferation of the telecommunications markets reforms. As competition grows fiercely and services become sophisticated there is a possibility of emergence of low quality producers [1] and complicated products that leave the consumer vulnerable [2]. In order to ensure consumers efficiently engage in telecommunications market, which is necessary for healthy competition and the sector development, consumer empowerment and protection laws and regulations are important [3].

For consumers to fully exploit the intended benefits extended by these competitive markets, they should actively engage in the market. The caveats of consumer engagement necessary to benefit from the competitive markets are: first, ability to at least observe most options mainly in terms of price, quality and contractual terms of communications goods and services available in the

market, and be willing and able to make rational buying decision. Second, after actual buying, as consumers continue to use their communications goods or services, they should possess a reasonable knowledge of their rights and obligations; and whenever their rights are violated, they are aware of complaint procedures and actually follow them to get redress. Whenever consumers play their role efficiently, they can maximize their welfare and drive competition for growth of the entire industry.

Given the consumer fragmentation, they usually fail to uphold these engagement requirements. As a result, inefficient producers may be rewarded on the expense of both consumers and growth in the industry. Apart from having consumer rights and complaints procedures established, it is necessary for regulators to raise consumer awareness and knowledge. From ITU survey of 2010 on regulators, in all countries irrespective of economic status they reported to take high responsibility to inform and raise awareness of consumer rights among consumers in their countries [3]. When consumers are not empowered, especially when they are not aware of their rights enough to recognize when they are breached, and what to do when it is so, consumers welfare can highly be compromised. This is especially the case as most countries have ex-ante consumer regulations, whereby the consumer has to initiate the redress procedure whenever breach of their rights occurs for the regulatory authorities to engage.

This paper therefore attempts to respond to two research questions using a case of Tanzania, which represent the context a developing country. Firstly, the study assesses how much do telecommunications consumers in Tanzania know rights entitled to them with regard to telecommunications services. Second, the study determines factors that influence consumers' knowledge on their rights in the telecommunications sector. The results of this paper will merit the literature in three folds. Firstly, the study will establish the telecommunications consumers' knowledge levels on their rights. Secondly, the most vulnerable groups of consumers will be identified so as to inform regulators and related institutions to carefully address, monitor and advocacy for consumer protection of these groups. Lastly, antecedents responsible for enhancing general consumer knowledge will be identified, thus save as inputs for regulators in shaping consumer empowerment and protection schemes for telecommunications consumers.

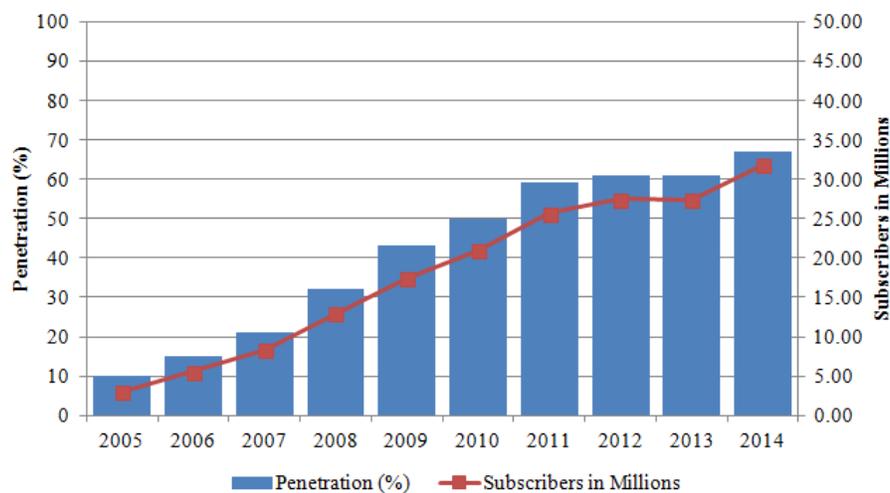
The rest of paper is organized as follows: section 2 details the development of telecommunications market and consumer related institutional arrangements in Tanzania. Section 3 follows by describing the several literatures in the consumer empowerment and protection areas. This is followed by the methodology in section 4. Then in section 5, results of the analysis will be reported and subsequently detail discussions. Lastly, section 6 concludes the study and provides policy recommendations.

## **2. BACKGROUND**

Prior to 1993 telecommunication services in Tanzania were treated like any other utility whereby the government was the sole service provider through its incumbent state-owned telecommunications operator. In 1993 the government started the process of partial liberalization by first creating the Tanzania Communication Commission (TCC) which was working under the government ministries. Following these initial reforms, in 1994 Tanzania postal and telecommunication corporation was divided into Tanzania Telecommunication Company Ltd (TTCL) and Tanzania Postal corporation as a way to increase efficiency and explore possibility of privatization. Further, under the watch of TCC, the government allowed new entrants in the mobile telecommunications, protecting the incumbency of TTCL in the then dominant fixed line business [4]. The country continued its journey toward liberalization by partial privatization of

the incumbent TTCL was 2001. In 2003 the sector was effectively liberalized by enactment of the Tanzania Communications Regulatory Authority (TCRA) Act, 2003 which facilitated the formation of a converged regulator TCRA. The regulator has the mandate of regulating telecommunication, postal and broadcasting services.

Following reforms one decade later from 2005, mobile Telecommunication market in Tanzania has tremendously grown. Statistics from Tanzania Communication Regulatory Authority has shown that development clearly. According to report, subscriber base has reached 31.86 million from only 2.96 million; penetration has reached 67% from 10% in 2005 and 2014 respectively. Moreover prices have also dropped and general traffic has increased dramatically for local calls and international plus SMS. Market, for the last decade has been mainly served with three operators namely Vodacom, Tigo and Airtel which had about 94% of the market share in 2014 leaving the rest to be shared by smaller operators (TCRA, 2014). The general trend of consumer base and penetration can be seen on the figure 1.



Source: Tanzania Communication Regulatory authority website

Figure 1: Penetration of mobile telecommunication in Tanzania

As the telecommunication markets grew, the regulator strengthened institutional arrangements to safeguard consumer rights in the telecommunication markets. The Tanzania Communications Regulatory Authority (TCRA) Act of 2003 had general provision for consumer protection. These provisions were strengthened by the Electronic and Postal Communications Act (EPOCA) of 2010, which has provisions on quality of service, consumer protection and universal service obligations. Following the enactment of EPOCA, the regulator and responsible ministry derived two regulations related to consumer protection: the consumer protection regulations, and the quality of service regulations. Through these efforts, the regulator has established legal framework for handling consumer complaints, consumer complaints, and monitoring of quality of service.

### 3. LITERATURE REVIEW

In recent years, the literature body in consumer related topics has been growing considerably as telecommunication markets particularly mobile segment have become saturated in most countries.

It is important to note, consumer protection and their rights which this study is part of, contributes to the consumer side literature that focuses on consumer reaction to the dynamics of telecommunication industry. Main consumer-side topics that have been explored in the telecommunications field include customer satisfaction, customers' complaint and more recently the application of behaviour economics in understanding systematic consumer biases in making their decision on telecommunications services. In this section, these topics are discussed as they have emerged in literature and the gap this paper is intended to fill.

Perhaps the most explored area in the consumer side telecommunications literature is consumer satisfaction. This literature attempts to answer the question on like what are determinants and consequences to increase customer satisfaction based on various theories which try to build consumer satisfaction index. Most studies in this segment perform confirmatory and exploratory analysis to test determinants measured in latent variables that include all or a selected combination of perceived quality, perceived value, customer expectation and brand image. The consequence variables are mainly consumer satisfaction and consumer complaints. For detail description in the literature in consumer satisfaction Gijon, *et al.* [5] provides a detailed analysis. The same study analyzed consumer satisfaction by applying OLS on a dataset of 4249 from across Spain. The study found that consumers are more satisfied by smaller and new operators compared to large ones. Similar studies that focus on consumer protection in mobile telecommunications industry include USA [6], Thailand [7] and Taiwan [8].

In addition to investigating consumer satisfaction, another research focus has been on analyzing consumer complaints. In fact, consumer complaint is understood to be the opposite reaction to consumer satisfaction, and thus the impetus has been to understand factors that trigger rise or fall of consumer complaint. This is especially important in telecommunications industry since it has been reported that following liberalization policies and increase in competition, the sector has experienced a surge in consumer complaints unmatched by any sector [9]. Cheung *et al.* [10] investigated consumer related complaints among four telecommunication markets in Hong Kong: fixed line telephone services, mobile phone services, international direct dialling services, and Internet services. Using regression analysis, and dataset received from the Office of the Telecommunication authority covering the period 1999-2006, the author found that indeed consumer complaints had increased as competition grew in the market.

Contrary to Gijon *et al.* [5], Cheung *et al.* [10] found that more complaints in Hong Kong came from new players in the sector compared to the established ones. More recently, a similar work by Garin-Munoz *et al.* [11] on consumer complaints in mobile telecommunication sector revealed that dissatisfaction is not a necessary condition for complaining, but kind of problems consumer experience (or dissatisfied with) does explain their propensity to complain. In particular, they found that consumers who experience problems in billing are more likely to complain than those who are dissatisfied with other issues.

Behavioural economics is another block in the consumer literature in the telecommunication industry that is gaining pace. The issues discussed above, which take the view of the mainstream economics, assumes that consumers are rational agents able to evaluate products and services based on merits; when their expectation are met they are satisfied, otherwise, they complain. They assume that any bias is idiosyncratic, and cannot be systematically observed across the population. Behaviour economics challenges that view by identify and evaluate consistent systematic errors and biases that consumer make in their buying decisions and their perception of usage expectation. Lunn [12] pointed out several biases that are inherent to human being such as status quo, ambiguity aversion, and procrastination and inertia; when consistently exploited, may

harm consumers' welfare. Armstrong [13] and Xavier *et al.* [14] detail special cases where producers can exploit consumers based on behavioural economics precepts. In the same line Mitomo *et al.* [15] analyzed consistent preference of consumers on flat rate plan, paying a fixed monthly charge which is systematically higher than their actual use. The authors pointed the fact that people tend to overestimate their future telecommunication services use, thus making irrational buying decisions that not in their best interest.

The above literature focuses on the consumer behaviour under various assumptions. Consumer satisfaction assumes consumers have enough knowledge on their products and services, as well as their expectation about them, enough to make decisions on their best interest. When these expectations are met they are satisfied. On the other hand, if they are not satisfied, they can file their complaints. Here, the caveat is that, customers who were not satisfied will report their complaints. Indeed most research in this area analyzes the complaints that were reported, and the literature at this point is silent about those who did not file complaints. Behavioural economics covers the space with argument that consumers may be satisfied with the service but due to biases fail to make good deal, based on biases such as status quo, they may neither report their complaint, nor changes the operator. It is often recommended by these studies, that one way to reduce consumer biases, regulators should device ways to increase consumers' education on information such as available options of products and services, empowering consumers so as to mitigate them in the market place, but if consumer face violation, what are their rights, and what are responsible authorities they can report [14]. This study fills the gap by focusing on consumer knowledge about consumer rights. Since most regulators act on the basis of light hand post ante regulation, unless consumers are aware of their biases, know when they are exploited, and aware of their rights and institutions that work at their remedy, it is unlikely that they will report their complaints. This paper attempts to fill this literature gap by focusing on developing countries in which telecommunication has boomed quite recently and there is scarce literature on consumer empowerment and protection.

## **4. METHODOLOGY**

### **4.1. Study Objective**

The primary objectives of this paper are first to measure knowledge of consumer toward their rights. Then, assess which factors have effect towards their knowledge levels. Factors researched are their media usage behaviour, awareness of regulator and demography, particularly on how these factors impact consumer knowledge levels...

### **4.2. Data Collection and respondents**

The targeted population was mobile phone users in Tanzania in two different regions in Tanzania: Moshi Municipal and Mwanza city. Mwanza is the second largest city in Tanzania after Dar es Salaam and more urbanized compared to Moshi. In each city 100 respondents were interviewed making a pooled total of 200 respondents. Interviews were conducted in face to face, guided by a questionnaire in May 2015. This method was preferred because interviewers were able to capture verbal and non-verbal information from interviewees; also respondents were able to raise questions and concerns which were addressed promptly by interviewers. Interviews were conducted by two research assistants, graduates in bachelor degree of Law, to ensure they have general understanding on consumer rights. Each interviewer collected data in each region. Prior training was conducted to equip the research assistants with necessary acquaintance particularly in telecommunications regulations, rights and obligations to effectively conduct the data collection task. Moreover research team was in contact throughout the survey period to solve and

advice in case of any raised issue in the field. Few data were analyzed as pilot and correct measures were taken. After finalizing data collection, research assistants gave out their report including personal field experience so as to capture everything that was not able to be captured through questionnaire hence improve policy recommendation during reporting and future research studies.

Data collected represent diverse groups of the telecommunications users in terms of age, gender, income, education, and occupation. Among 200 respondents, gender representation ratio was 56 to 44 percent, male to female respectively. In accord, two studies which based on the, demand side survey conducted Research ICT Africa (RIA), [17] and [18] found out that, in most African countries including Tanzania, women are less likely to own phones compared to their counterparts. The average age was 35 years, which is exactly the same with average age to study [17]. Therefore dataset used for this study is a representative sample for mobile phone consumers in Tanzania.

### 4.3. Questionnaire Design

The questionnaire was design to collect data that will facilitate the analysis to adequately respond to the research question. The questionnaire was therefore designed to capture information on three main issues. Firstly, evidence of violation which was tested by a list of ten common violation items in the telecommunication industry in the developing country context. Respondents were asked if any of violation had ever happened to them in a yes/no format. Secondly, knowledge of consumer rights was tested through nine questions where respondents were asked to respond true or false and with option of I don't know [19]. Alongside, respondents' results on knowledge were aggregated and ranked in five levels, as in table 1.

Table 1: Ranking of the consumer knowledge

Score in percentage	Category level	Knowledge level
$X \leq 20$	0	Low
$20 < X \leq 40$	1	Fairly low
$40 < X \leq 60$	2	Fair
$60 < X \leq 80$	3	Fairly high
$X > 80$	4	High

Third, the questionnaire captured the demography details which included the socio-economic factors necessary to depict vulnerable consumers. In addition to demography factors, the questionnaire collected data on various attributes that are likely to affect consumers' knowledge of their rights on telecommunication services. These include types of media the interviewee is conversant with, particularly social media or traditional media such as new papers or radio. Further, consumer awareness on the telecommunications regulator (TCRA) was measured, as it plays a central role in shaping and safeguarding consumer rights in the telecommunications sector. Table 2 provides the description of variables collected for analysis in this study and the expected sign of the variables in accordance to the literature.

Table 2: Description of variables

Variable name	Description of variables	Expected sign
Gender	Dichotomous variable: Male=1, Female=2	±
Age	Continuous variable in years	-
Education	Formal years of education	+
Income	Continuous variable, respondent's income in Tshs. (Tanzanian currency)	+
Occupation	Employed, Unemployed, Student and Farmers	-
Region	Region (Moshi=1, Mwanza=2)	+
Social media	Frequency of using social media: Everyday=1, Once a week=2, Once a month=3, Never=4	+
Television	Frequency of using television: Everyday=1, Once a week=2, Once a month=3, Never=4	±
Newspaper	Frequency of using Newspaper: Everyday=1, Once a week=2, Once a month=3, Never=4	±
TCRA	Awareness of Tanzania Regulatory authority Institution: (Yes=1, No=0)	+

#### 4.4. Analysis

Ordered logit model was adopted to examine determinants of consumer probability to be knowledgeable about their rights. Logistic Ordered Model was preferred compared to classical linear regression as it is more suitable for categorical results [20]. Also Ordered Logit Model was preferred rather than Probit Model in line with Schmidt *et al.* [16] study which used ordered logit (ologit) to study determinants of E-skills in 17 African countries.

Results of data collected were used to group consumers in five categories according to their knowledge from Low, Fairly Low, Fair, Fairly High, and High. For the case of categorical results in this study the dependent variable “j” can take any value between 0 and 4 depending on level of knowledge.

So bearing in mind the model for regression with single latent variable, which ordered logit model, is based upon:

$$Y_k^* = X_k\beta + \varepsilon_k \dots\dots\dots \text{eqn.1}$$

where  $X_k$  is the set of explanatory variables,  
 $\varepsilon_k$  is the error term, and  
 $Y_k^*$  is unobserved value.

The observation is:

$$j = \begin{cases} = 0 & \text{if } Y_k^* \leq \mu_0, \\ = 1 & \text{if } \mu_0 < Y_k^* \leq \mu_1, \\ = 2 & \text{if } \mu_1 < Y_k^* \leq \mu_2, \dots\dots\dots \\ = 3 & \text{if } \mu_2 < Y_k^* \leq \mu_3, \\ = 4 & \text{if } Y_k^* > \mu_3. \end{cases} \dots\dots\dots \text{eqn.2}$$

Where the ordered variable  $j$  takes the value of categories from 0 to 4 depending on the category it represents and  $\mu$ 's are parameters which are expected to be estimated by  $\beta$ . The interviewees got different grades according to their knowledge about consumer right which is measurable factors, "X", with specific factor error  $\varepsilon$  which cannot be observed.

When variables are latent continuous as observed in eqn. 2 the summary equation is:

$$Y_k^* = j \text{ if } \mu_{j-1} < Y_k^* \leq \mu_j \dots \dots \dots \text{ eqn. 3}$$

The probability that an alternative  $j$  will be selected by an observation  $k$

$$\begin{aligned} P_{kj} &= P(Y_k^* = j) \\ &= P(\mu_{j-1} < Y_k^* \leq \mu_j) \\ &= F(\mu_j - X_k\beta) - F(\mu_{j-1} - X_k\beta) \dots \dots \dots \text{ eqn. 4} \end{aligned}$$

While for ordered logit model as it is in binomial logit model  $F$  is the logistic cdf

$$F(z) = e^z / (1 + e^z) \dots \dots \dots \text{ eqn.5}$$

Moreover for ordered logit model set of coefficients is equal to "j" (number of categories) and number of intercepts is equal to "j-1". For the case of our study, we will have five set of coefficient with four different intercepts.

Furthermore marginal effects were estimated for each category, to observe instantaneous impact of change in any measurable variable to the expected outcome probability of consumer to be in a certain categorical level of knowledge, as other measurable variables kept constants. Marginal effects were calculated as formula in (eqn.6)

$$\frac{\partial P_{kj}}{\partial X_{kj}} = \left[ F'(\mu_{j-1} - X_k\beta) \right] - F(\mu_j - X_k\beta) \dots \dots \dots \text{ eqn.6}$$

## 5. RESULTS AND DISCUSSIONS

### 5.1 Consumer knowledge

Consumer knowledge as afore mentioned was measured by asking various questions on the topic and the total scores were ranked in five categories from level zero to four (0 - 4). Respondents in category four were the most knowledgeable while those in category zero were the least knowledgeable. Consumers' knowledge among respondents was normally distributed as seen in figure 2. 40.5 percent respondents were in the average knowledge level category, followed by 22 percent and 19.5 percent in the low and high knowledge level categories respectively and lastly 12.5 percent and 5.5 percent were in the very low and very high level categories respectively. Generally consumer knowledge among respondents was average and there was variability of knowledge levels for instance as much as some respondents were able to answer all nine question correctly, others were not able even to answer one question correctly. Looking more closely, consumers knowledge was skewed more towards the lower side as much as 25 percent of respondents were above average knowledge level category the other 34.5 percent were below showing more respondents are less knowledgeable.

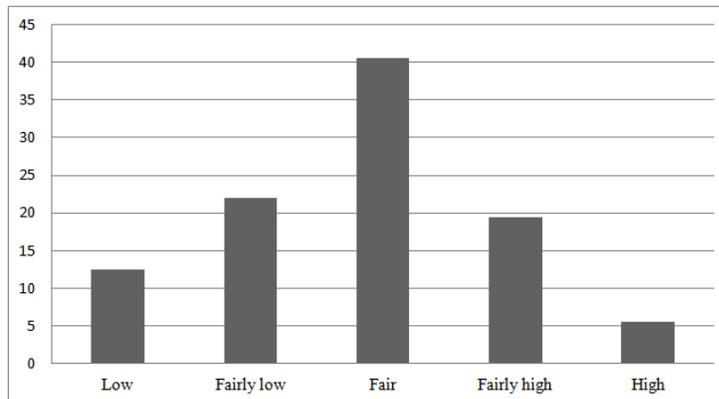


Figure 2: Distribution of consumers across various knowledge levels

After seeing levels of knowledge each among respondents, we focus on the determining factors that contribute to differences on consumer knowledge levels. Table 3, presents results of factors which expected to contribute to the level of knowledge among respondents based on using ordered logit regression model. For each factor, results on their likely hood towards consumer knowledge, statistical significant and standard errors are provided.

Table 3: Ordered logit model result against knowledge

Variable	$\beta$	SE	P>z
<b>TCRA</b>	<b>0.863185</b>	<b>0.364219</b>	<b>0.018**</b>
<b>Social media</b>	<b>0.301344</b>	<b>0.139918</b>	<b>0.031**</b>
Newspaper	0.0786616	0.1374482	0.567
Television	-0.2182989	0.147431	0.139
Gender	0.2063521	0.2753331	0.454
<b>Age</b>	<b>-0.038132</b>	<b>0.011938</b>	<b>0.001***</b>
Education	0.0421795	0.0462094	0.361
<b>Income</b>	<b>0.001404</b>	<b>0.000645</b>	<b>0.03**</b>
Occupation	-0.0438156	0.1220499	0.72
<b>Region</b>	<b>0.381836</b>	<b>0.153618</b>	<b>0.013**</b>

Prob >  $\chi^2 = 0.000$

Pseudo  $R^2 = 12\%$

Significant at \*\*\* < 0.01, \*\* < 0.05, \* < 0.1

## 5.2 Demography

Several socio-economic factors were statistically significant, determinant factors contributing to consumer knowledge. First, age has a negative likelihood effect on consumer knowledge. This suggests that as age of consumers increase, it is less likely for consumers to be knowledgeable of their rights. This may be due to low level of exposure and interest on ICTs related issues as age increased considering that more information on rights can be easily found from internet and associated digital media. Also, older generation has less E-skills level to be able to adopt and use internet services like social media, as younger generations [16]. Second, income has positive likelihood, and statistical significant effect on consumer knowledge. Therefore consumers with

higher income are more likely to have higher knowledge level on the consumer rights. Third, Region is positively significant, which implies that consumers in big cities are more likely to be knowledgeable of their rights compared to their counterpart. More specifically, consumers living in more urbanized were more likely to be knowledgeable of their rights compared to their counterparts. This shows clearly that there is still digital divide between rural and urban in Tanzania. For instance, Schmidt *et al.* [16] found likely trend in all seventeen African countries under study, including Tanzania; there were evidence of digital divide in ICT between rural and urban.

In general, findings from this study clearly show that vulnerable consumers are characterized by population in rural areas, of old age and low income, as they are more likely to be less knowledgeable. The results suggest that purposeful efforts should be implemented to improve knowledge levels among these consumers, for them to be able to use engage fully and confidently while making informed/rational decisions in the telecommunication markets. Considering that in Tanzania, as many other developing countries, big part of the population (who are already consumers or prospective consumers) have low income levels and live in rural areas. Consequently, if purposeful measures are not taken in timely manner to empower vulnerable consumers, it may negatively affect the industry growth in the long run.

### **5.3. Awareness of the regulator**

Furthermore awareness of the regulator (TCRA) has positive contribution to consumer`s knowledge meaning consumers who are aware of the existence of regulator are more likely to know their rights. The regulator as an institution which protect consumer have established consumer rights and publish on their websites ([www.tcra.go.tz](http://www.tcra.go.tz)), offices, radio programmes and social media related like twitter and Facebook so consumer who visit their pages or offices, which makes it easier for consumers with access to any of the above to see their rights. The results for this study found that these efforts have improved consumers knowledge on the regulator, and consequently their rights in the telecommunications sector.

### **5.4. Media Usage**

Exceptional finding of this study is the role of social media on consumer`s knowledge level. Social media is another variable which was positively significant, meaning that consumers who use social media are more likely to possess higher knowledge levels on telecommunications consumer knowledge. One explanation may be due to adoption of social media by operators. For instance, big operator companies in Tanzania like Vodacom, Airtel and Tigo have launched pages on Facebook and at the time of this writing, they had at least a million likes each. On one hand, operators use social media platforms to advertise their products and services; on the other hand consumers uses these platforms to report claims. Since comments in platforms like Facebook are first interactive, and then open for other users to see, they promote consumer knowledge on consumer violation issues that have been reported in the past, and offer the opportunity for other consumers to report once the same happens to them. Therefore, not only the claimer benefit by knowing and improving their knowledge about their rights but other people who have liked the page and their connected social network.

## **6. CONCLUSION AND POLICY RECOMMENDATION**

This study found out that, knowledge levels among consumers were normally distributed, but skewed towards low knowledge levels. On one hand, few respondents knew almost all their rights included in this study, although to some the vice versa was true and nearly half fell in between. The study found various factors which determine consumer knowledge on their rights. In particular, socioeconomic factors, do determine consumer knowledge on their rights, whereby populations characterized with old age, low income, and those situated in rural areas were more likely to be in lower knowledge level categories, hence more vulnerable consumers. In addition to socio-economic factors, two other factors do affect the consumers' knowledge on their rights. In accord, respondents who were aware of regulatory authority (TCRA), and social media users, are more likely to be in higher knowledge level categories.

These results, provide hints for policy making bodies, regulators and other institutions that are responsible for consumer empowerment and protection in the telecommunications sector. More essentially, the study has identified the population in rural areas, old age and of low income to be the most vulnerable. As more than 70 percent of the Tanzania population resides in rural areas, which means that as telecommunications services become universal, more people in rural areas are been connected to the telecommunications networks, it is high time to increase efforts in empowering and protecting telecommunications consumers in rural areas. As to which tools are best suited for enhancing consumer knowledge, the study has shown that social media plays an important role compared to traditional media such as print brochures or radio. One reason to this observation may be the availability of instant interactivity and two ways communication that can be enjoyed by social media users. As social media finds its way to the majority of the Tanzanian population, TCRA could increase its use of social media to promote awareness of the consumer rights. In the same vein, since the service operators have the larger followers on social media platforms, TCRA can impose operators to provide information on consumer rights on operators' social media pages. This strategy will widen the reach of consumer rights knowledge to the targeted audience.

Despite the contribution of this study in understanding the consumer knowledge of their rights in the telecommunications sector in developing countries, it exposes some inadequacies in the literature that should be addressed in order to enhance the end goal of consumer empowerment and protection. First, while the study shows that social media plays a significant role raising consumer awareness of their rights, most vulnerable users who are old and living in rural areas with low income, who do not have access to Smartphone and thus shuttered them from the social media space. It is therefore important for further studies to conduct research on what ways are effective to enhance consumer rights awareness, hence their empowerment, in the context of these vulnerable consumers. Second, although consumer awareness of their right is a necessary requirement towards consumer empowerment and protection, it does not guarantee assertiveness. The authors therefore suggest further studies, to understand the assertiveness of consumers who are aware of their rights, complaint procedure, as well as responsible institutions.

## REFERENCE

- [1] Lopez, R., Perez-Amaral, T., Garin-Munoz, T. & Gijon, C., (2015) "Consumer service quality and incomplete information in mobile telecommunications: A game theoretical approach to consumer protection." In *The Smart Revolution Towards the Sustainable Digital Society: Beyond the Era of Convergence*. (ed. by H. Mitomo, H. Fuke, & E. Bohlin), pp. 159-181. Edward Elgar Publishing, Cheltenham.
- [2] Nassar, H., Moshi, G. and Mitomo, H. (2013) "The Impact of Psychological Barriers in Influencing Customers' Decisions in the Telecommunication Sector", *International Journal of Managing Public Sector Information and Communication Technologies (IJMPICT)*, Vol. 4. No. 4, pp. 1-16
- [3] ITU, (2013) "Regulation and Consumer Protection In A Converging Environment". [www.itu.int/en/ITU-D/Regulatory-Market](http://www.itu.int/en/ITU-D/Regulatory-Market). N.p., 2013. Web. 25 May 2015.
- [4] Resto, C. M. (2011). "Consumer protection under the Tanzania telecommunication laws, policy and regulations: a case study of Tanzania communications regulatory authority". *Masters of Law in information technology and telecommunication (LLM IT & T)*. Open University Of Tanzania
- [5] Gijon, Garin-Munoz, Perez-Amaral & Lopez-Zorzano, (2013) "Satisfaction Of Individual Mobile Phone Users In Spain." *Telecommunications Policy* Vol. 37. No.10, pp. 940-954.
- [6] Eshghi, A., Dominique, H. & Heikki, T., (2007) "Determinants of customer loyalty in the wireless telecommunications industry." *Telecommunications Policy* Vol. 31, No. 2, pp. 93-106.
- [7] Leelakulthanit, O., & Boonchai, H., (2008) "Factors that impact customer satisfaction: evidence from the thailand mobile cellular network industry". *International Journal Of Management and Marketing Research (IJMMR)* Vol. 4, No.2, pp. 67-75.
- [8] Kuo, Y. -F., Wu, C. -M. & Deng, W. -J., (2009) "The relationship among service quality, perceived value, customer satisfaction, and post-purchased intention in mobile value-added services". *Computer in Human Behaviour*, Vol. 25, No. 4, pp. 887-896
- [9] Smith, Rhonda L. (2000) "When Competition Is Not Enough: Consumer Protection". *Australian Economic Papers* Vol. 39, No. 4, pp. 408 - 425.
- [10] CHEUNG, C. & Yi, C., (2007) "Consumer protection in the Hong Kong telecommunications sector : implications for competition policy". *Master of Philosophy (MPHIL)*. Lingnan University, 2007.
- [11] Garin-Munoz, T., Perez-Amaral, T., Gijon, C. & Lopez, (2015) "Consumer Complaint Behaviour In Telecommunications: The Case Of Mobile Phone Users In Spain". *Telecommunications Policy*, available online
- [12] Lunn, P. D., (2012) "Telecommunications Consumers: A Behavioral Economic Analysis". *Journal of Consumer Affairs*, Vol. 47, No. 1, pp 167-189.
- [13] Armstrong, M., (2008) "Interactions between Competition and Consumer Policy". *Competition Policy International*, Vol. 4, No. 1, pp 97-147
- [14] Xavier, P. & Dimitri, Y., (2008) "Switching Costs And Consumer Behaviour: Implications For Telecommunications Regulation". *Info*, Vol. 10, No. 4, pp. 13-29
- [15] MITOMO, Hitoshi et al. (2008) "An empirical analysis of flat-rate preference in telecommunication and transportation service: A Behavioral Economic Approach". *Studies in Regional Science* Vol. 38, No. 2, pp. 311-329.
- [16] Schmidt, J. P., & Stork, C., (2008) "Towards evidence-based ICT policy and regulation: E-Skills", Vol. 1, Policy Paper 3, *Research ICT Africa*, ISSN 2073-0845.
- [17] Gillwald, A., Milek, A. and Stork, C. (2010), *Gender Assessment of ICT Access and Usage in Africa*, Vol.1, Policy Paper No. 5. available at [http://www.researchictafrica.net/publications/Towards\\_Evidence-based\\_ICT\\_Policy\\_and\\_Regulation\\_-\\_Volume\\_1/RIA%20Policy%20Paper%20Vol%201%20Paper%205%20%20Gender%20Assessment%20of%20ICT%20Access%20and%20Usage%20in%20Africa%202010.pdf](http://www.researchictafrica.net/publications/Towards_Evidence-based_ICT_Policy_and_Regulation_-_Volume_1/RIA%20Policy%20Paper%20Vol%201%20Paper%205%20%20Gender%20Assessment%20of%20ICT%20Access%20and%20Usage%20in%20Africa%202010.pdf) [accessed in June 2015]
- [18] Swarray, M.D, Gilwald, A, Morrell, A. (2013) "Lifting the gender veil on ICT indicators in Africa" Conference. Available at SSRN:<http://ssrn.com/abstract=2363776>
- [19] Dommeyer, C. J., & Gross, B., (2003) "What consumers know and what they do: An investigation of consumer knowledge, awareness, and use of privacy protection strategies". *Journal of Interactive Marketing*, Vol. 17, No. 2, pp.34-51.
- [20] Greene, W. H., (2000) *Solutions Manual Econometric Analysis*. Fourth Edition. Upper Saddle River, N.J.: Prentice-Hall International

## Authors

**Hilda Jacob Mwakatumbula** is currently a doctoral student at the Graduate School of Asia-Pacific Studies, (GSAPS), Waseda University, Japan. Her research interest is in regulation of telecommunication markets especially on competition, services quality and consumer protection in telecommunications sector. She received a Master's degree in Operation Communication from Kigali Institute of Science and Technology (KIST), Rwanda.



**Goodiel Charles Moshi** is currently a lecturer at the University of Dodoma, Department of Telecommunications and Communication Networks. His research interests include productivity and efficiency of the telecommunication markets; and economic analysis of ICT regulation, investments and usage patterns, with emphasis on the developing countries.



**Hitoshi Motomo** is Professor of Telecommunications Economics and Policy at the Graduate School of Asia-Pacific Studies (GSAPS) and the Director of the Institute of Digital Society (IDS), Waseda University. He was a visiting Professor at the Center for Information and Communication Research, Stockholm School of Economics in 2007. He holds a Master's degree in Environmental Science and a Doctorate Degree in Engineering. He is a board member of many academic associations including JSICR and International Telecommunications Society. His research has covered a wide range of socio-economic and regulatory issues of ICT deployment and utilization. His current research focuses on the applications of behavioral economics to media access. He is also interested in microeconomic analysis of telecommunications such as formal analysis of network externalities and pricing telecommunications, as well as measurement of the social and economic impacts of ICT.

