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## Consumer Awareness And Protection In Telecommunication Markets: Case Of Tanzania; Determinant Of Consumers' Knowledge On Their Rights

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**CONSUMER AWARENESS AND PROTECTION IN  
TELECOMMUNICATION MARKETS: CASE OF TANZANIA;  
DETERMINANT OF CONSUMERS' KNOWLEDGE ON THEIR  
RIGHTS**

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## **Executive Summary**

Consumer rights are rights entitled by law to anyone who buy service or good. Liberalized telecommunication market is characterized with competition which led to new advanced and sophisticated services, dropping of price dramatically and increase penetration as afore mentioned on one side are positive effect on the other hand it becomes more complex for consumers especially in developing countries to make rational choices. In such environment higher consumer knowledge is crucial for them to have confidence and high bargain power hence participate actively in the market. National regulatory authority for communication of it has been established in many countries, one of its core responsibilities being protecting consumer. Further, consumer rights were published with regulatory authorities as part of empowering consumers. Are consumers knowledgeable about their rights remaining a question to ponder.

This study has attempted to answer afore stated question; In so doing the sample of 200 consumers from two regions in Tanzania were interviewed to measure their level of knowledge and later categorized in five level with respect to their knowledge. Alongside respondents were tested for any evidence of violation they have experienced. The sample interviewed was representative of mobile phone users in Tanzania. Data were analyzed using Ordered Logit (Ologit) Regression Model run in STATA SE 12, to determine factors which contribute to consumer's level of knowledge.

Results elaborate that 99 percent of respondents reported to have experienced at least one violations. Furthermore the level of consumer knowledge was normally distributed; on one hand few knew almost all their rights while to some were the vice versa and nearly half fell in between. Further different variables impacted each knowledge level category differently, an interesting finding of this research is the role of social media in improving consumer knowledge; other variables being socioeconomic (where respondents who are older with low income and situated in rural far from big cities were more likely to be in low knowledge level category) were also respondents with prior experience of violation in network and value added services (VAS) and awareness of regulatory institution were more likely to be in high knowledge level category.

Generally as Social media have shown uniquely contribution to increase the likely hood of respondents to be on higher knowledge level categories which may be due to TCRA and operators launching their pages into social media. As population on social media enjoy that privilege,

regulator are advised to use tradition media like radio, newspaper and television to advertise itself as part of improving consumer knowledge to population which is not online, rural, poor, older who would prefer tradition media. For instance operator can have a section on Television or space on newspaper where they can pass on knowledge to consumer. Secondly, regulator's social media pages needs to be updated from time to time and becomes more consumer friendly to encourage interaction among consumers. Thirdly special campaign may be obliging to improve knowledge and awareness among consumers; likely strategy has been adopted by the regulator in South Africa (ICASA) where they conduct several campaigns especially to disadvantaged consumer. Lastly but not least regulatory authorities in other countries may consider adopting the use of social media to improve awareness as the penetration of social media improving dramatically in the world especially in developing countries.

## 1. Introduction

Human rights are rights inherent to all human beings, whatever our nationality, irrespective of our social – economic status; we all deserve to be treated evenly, entitled to basic human rights without discrimination OHCHR (Office of the High Commissioner for Human Rights) and these rights include consumer rights. UNCTAD (United National Conference on Trade and Development) in promoting human rights established set of specific guidelines for consumer protection in trade and industry which includes universal rights for all consumers among member states. Consumer rights were established to account for universal interest and need of consumers; most specifically for developing countries where consumers are characterized with low education level, low economic levels and less bargaining power, consumer rights have objectives of protecting country's consumers and ensuring value for consumer's money hence eliminating market abuse (UNCTAD, 2001). Moreover ITU (International Telecommunication Union) an United National agency dealing with Telecommunication, has specific general rules for consumer protection in telecommunication industry and following that some member countries has set legislation for consumer protection and rights. For instance according to 2012 ITU survey found that among 67% of respondents had specific legislation for consumer protection and almost all respondents were working on to provide information and raising awareness (ITU, 2013). This shows that having consumer rights guidelines are important to both demand side and supply side of the telecommunication.

Consumer rights legislations in developing countries has been popular in recent years after different countries started the process of reforming telecommunication industry, which led to competition as markets were liberalized. As competition grows fiercely and services become sophisticated some consumers tend to lose their bargain power and become vulnerable. In ensuring good quality of service, empowerment and protection of consumers are vital hence legislation and regulations has significant role to play (ITU(b), 2013). Apart from having consumer rights established the next task for regulators is to inform and raise awareness to consumers. From ITU survey of 2010 respondents in all countries irrespective of economic status reported taking high responsibility to Inform and raise awareness of consumer rights among consumers (ITU(a),2013).

The communication regulatory authority in Tanzania (TCRA) as a member of ITU among its core objectives is to protect consumers, in accomplishing that task consumer protection regulations was established in 20011 which includes rights of consumers; Additionally they have initiate and

published consumer rights in both English and Kiswahili language (which is familiar to large part of the population) to inform and improve knowledge among consumers.

Following that my core research question is, foremost are telecommunication consumers in Tanzania know their rights? In responding to the fore stated question firstly evidence of violation have been investigated, secondly knowledge level of consumer towards their right have been measured and categorized and thirdly factors attributed to difference in knowledge levels were analyzed hence conclusion and recommendation were drawn. Results found and recommendation given may be useful for regulators in Tanzania and other countries with likely socio-economic status.

This paper has been divided in seven sections: Section two will explain the background of case study where, Tanzania socio-economic status and telecommunication market will be discussed in brief also history of consumer rights will seal that section up. As several literatures has also contributed to consumer related studies, third section will focus on reviewing previous literature and show contribution and gap to be filled by this study. Further in the forth section methodology adopted, including data collection processes, questionnaire design and model for analysis will be conversed in details. Then in fifth sections finding will be reported and discussed in depth. Lastly in section sixth and seventh conclusion together with recommendation will be drawn and literature used will be referenced respectively.

## **2. Background**

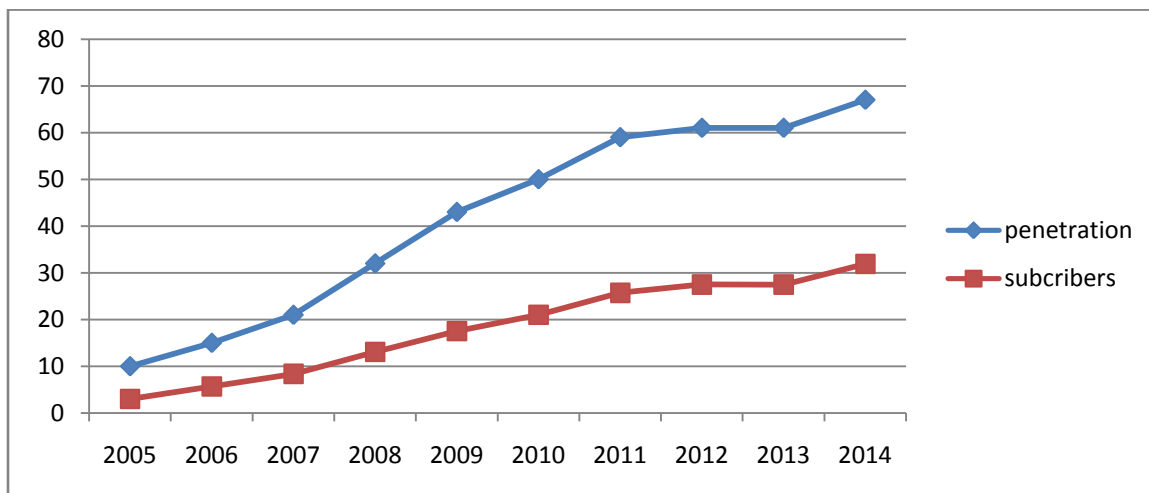
Tanzania is a developing country with low income approaching middle income economy with average per capital income of US\$948 (World bank, 2015). The country is situated in Eastern part of Africa and an inhabitant to approximately 49 Million populations which makes it the sixth highest population in Africa. Tanzanian economy depends mostly on Agriculture as 70 percent of its population are situated in rural areas and highly associated themselves with agricultural activities (NBS, 2012). Moreover other sectors which boost the economy are Tourism (Mt. Kilimanjaro, Serengeti National park and Zanzibar beaches), Minerals (Gold, diamond, and Tanzanite), and the recent found gas is expected to contribute further in the economy. About 75 percent of the population above 15 years is able to read and write in Kiswahili as Kiswahili is the national language and English is a complimenting language (used mostly as official language and used as means of education from secondary schools).

## 2.1 Telecommunication Markets

Different reforms took place in telecommunication markets since the beginning of 1990 until recently in most of African countries, from commercialization and privatization of incumbent companies, liberalizing markets, establishment of regulators to mention a few. Telecommunication markets in Tanzania had likely same trend; Firstly from 1994 Tanzania postal and telecommunication corporation were divided into Tanzania Telecommunication Company Ltd and Tanzania Postal corporation as part of commercializing them, Then regulatory body was established to be an overseer of the telecommunication market hence controlling market failure; followed by partial liberalization, later an incumbent company TTCL was privatized in 2001, and in 2003 Converged regulator TCRA were formed which dealt with Telecommunication, Postal and Broadcasting, later 2005 telecommunication market was fully liberalized. (Resto, 2011)

Following reforms one decade later from 2005 mobile Telecommunication markets 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 2.96 Million; penetration has reached 67% from 10%. Moreover prices have also dropped and general traffic has increased dramatically for local calls and international plus SMS. Vodacom, Tigo and Airtel) holding about 94% of the market share leaving the rest to be shared by other operators (TTCL and Zantel) have been serving mobile telecommunication market for the last decade. (TCRA, 2014). More general trends can be seen in figure 1.

**Figure 1: Trends of telecommunication in Tanzania (2005 - 2014)**



Source TCRA statistic 2014

## **2.2 Consumer Rights**

Consumer Rights are set of rules set under law entitled to consumer when buying good or service. In liberalized environment as number of operator increases it leads into competition. As competition grow fiercely among operators lead to different recompense to consumers like price going down but on the other side consumers became vulnerable and may end getting unsuitable deal in that environment there is a need for policy intervention (Munis, 2000). In Tanzania before liberalization there were only incumbent operator and the need for consumer protection was lower than in liberalized environment; to accommodate the need of protecting consumer in Telecommunication sector the regulator (TCRA) in 2011 has established regulation in handling consumers which shows rights and duties of consumers, complain procedures, how operators should treat consumers and fines imposed incase operator violate service agreement. Moreover in protecting consumer other regulations were put forward like competition regulation and quality of service regulation to ensure that competition is fair among operator and there is no collusion among operators while services remain of high quality. On top of that the regulator has established rights of a consumer in both Kiswahili and English to raise their awareness, also it has used social media twitter and facebook to reach the more audience.

## **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 complain and more recently the application of behavior 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 intending 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 complains. For detail description in the literature in consumer satisfaction (Gijon, Garin-Munoz, Perez-Amaral and Lopez-Zorzano, 2013) provide a detailed analysis. The same study analyzed consumer satisfaction by applying OLS on a dataset of 4249 from across Spain; 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 (Eshghi, Houghton, and Topi 2007) on US market, (Leelakulthanit and Hongcharu 2011) on Thailand, and (Kuo, Wu, and Deng, 2009) in Taiwan.

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 is reported that following liberalization policies and increase in competition, the sector has experienced a surge in consumer complained unmatched by any sector (Smith, 2000). (Cheung, Ching Yi, 2007), Cheung investigated consumer related complaints among four telecommunication markets in Hong Kong: fixed line telephone services, mobile phone services, international direct dialing 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.

Furthermore, contrary to (Gijon, Garin-Munoz, Perez-Amaral and Lopez-Zorzano, 2013), Cheung (2007) 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, Gijon, Perez-Amaral and Lopez, 2015) on consumer complain mobile telecommunication sector, their analysis revealed that dissatisfaction is not a necessary condition for complaining, what problems have consumer experience (or dissatisfied with) 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.

Behavioral 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 in across the population. Behavior 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 2012) 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 2008), and (Xavier and Ypsilanti 2008) detail special cases where producers can exploit consumers based on behavioral economics precepts. In the same line (Mitomo, Otsuka and Nakaba 2008) 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 behavior 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. Behavioral 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 to (Xavier and Ypsilanti 2008). 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 also fills this literature gap by focusing on developing countries in which telecommunication has boomed quite recently.

## **4. Method/Methodology**

### **4.1 Study Objective**

The study objective of this paper was first to investigate existence of violation in Telecommunication sector, secondly to measure knowledge of consumer toward their rights, and lastly learning how about their media usage behavior, awareness of regulator and demography impacted consumer knowledge level. To archive that interview through questionnaire were used.

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

The target population was mobile phone users and owners in Tanzania between two different cities in (Moshi and Mwanza); where Mwanza is the second largest city in Tanzania and more urbanized compared to Moshi. In each city 100 respondents were interviewed making a total of 200 respondents in pooled. Interview was conducted face to face in May 2015. This method was preferred because interviewers were able to capture verbal and non-verbal quest to assist respondents; also respondents were able to raise questions and concerns which were addressed proximately by interviewers and give out clarification. Also personal interviews apart from being more expensive and time consuming than online survey, remain an option for countries with low internet penetration in order to reach all groups of consumers.

Interviews were conducted by researcher together with co-author and two research assistants. Prior training was conducted to equip them with necessary acquaintance to conduct the task ahead. 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 following 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 were from mobile users' representation in Tanzania representing diverse group of age, gender, income, education, and occupation. Among 200 respondents, male and female were 56% and 44% respectively in comparison to 2008 demand side survey conducted Research ICT Africa (RIA) had likely same ratio for male to female ratio 60% and 40% respectively; even though there is a small different this shows that gender gap among mobile phone users is diminishing as foreseen by (Serenson, 2008).the average age was 35 years which again was found to be exactly the

same with dataset for RIA 2008 demand side survey on ICT users. As aforementioned dataset used for this study is a representative sample for mobile phone consumers in Tanzania.

### 4.3 Questionnaire design

As precedent mentioned this study contemplating on three things, firstly evidence of violation and were tested by ten items common violation in the industry, respondents were asked if any of violation had ever happened to them, secondly knowledge of consumer rights were tested through nine question, respondents were asked to respond true or false and with option of I don't know. (Dommeyer C.J and Gross L.B 2003) Alongside respondents' results on knowledge were aggregated and ranked in five levels, as in table 1.

**Table 1: Rank of consumer knowledge level**

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

### 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 especially when it is qualitative study (Greene 2000). Also when the unit distance between categories formed after observing values were not significant. Ordered Logit Model was preferred rather than Probit Model as they are more likely the same with vague variations between them. Different scholars have also used ordered logit or Probit in their studies, For instance Schmidh and Stork (2008) 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:

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

where  $X_k$  is the set of explanatory variables,

$\varepsilon_k$  is the error term, and

$Y_k^*$  is unobserved value.

The observation is:

$$\begin{array}{l}
 j \\
 \\
 \\
 \\
 \\
 \\
 \end{array}
 =
 \begin{array}{l}
 0 \text{ if } Y_k^* \leq \mu_0, \\
 1 \text{ if } \mu_0 < Y_k^* \leq \mu_1, \\
 2 \text{ if } \mu_1 < Y_k^* \leq \mu_2, \\
 3 \text{ if } \mu_2 < Y_k^* \leq \mu_3, \\
 4 \text{ if } Y_k^* > \mu_3.
 \end{array}
 \left. \vphantom{\begin{array}{l} j \\ \\ \\ \\ \\ \\ \end{array}} \right\} \dots\dots\dots \text{Eqn.2}$$

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 factor, “X”, with specific factor  $\varepsilon$  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

$$\begin{aligned}
 P_{kj} &= P(Y_k^* = j) \\
 &= P(\mu_{j-1} < Y_k^* \leq \mu_j)
 \end{aligned}$$

$$=F(\mu_j - X_k\beta) - F(\mu_{j-1} - X_k\beta) \dots\dots\dots \text{Eqn. 4}$$

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 )

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

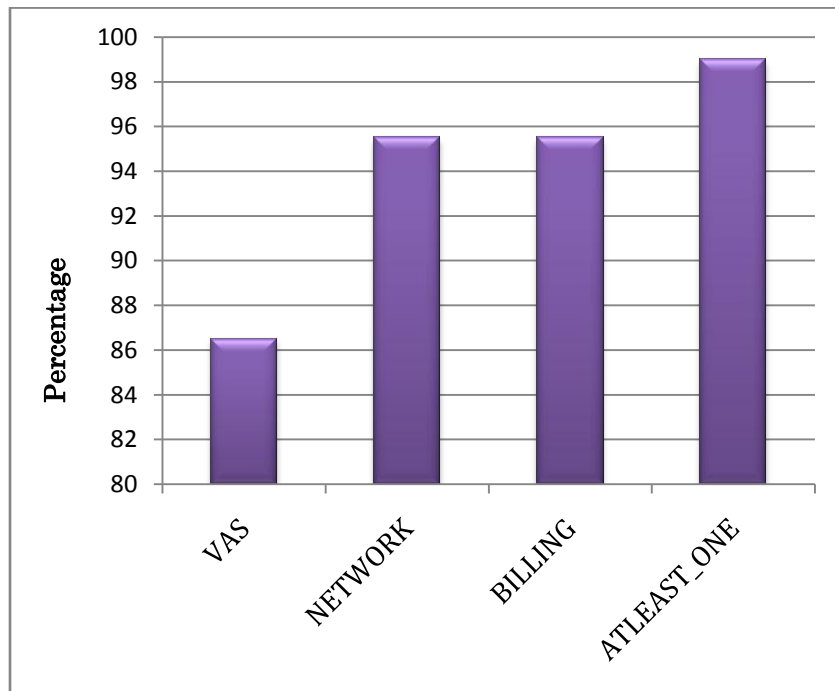
Additionally STATA SE 12 software were used to analyze results.

## 5. Result and Discussion

### 5.1 Violation experience

From the results respondents reported to have experienced different violation which were grouped in three value added services, network and billing. About 99 percent of all respondents reported to have experienced violation in one of the category at least once, where by network and billing problem being reported more than often followed by Value added Services as seen on figure 2 Having high rate of reported violation like this especially in network shows the rough picture of quality of services offered by operators, which may be an effect of competition as suggested by (Smith, 2000) that sometimes apart from advantages led by competition it might also cause degradation of service quality. In such environment consumer needs to know their right and to be aware of complaints procedures and institution that are involved.

**Figure 2: Evidence of violation as reported by respondents**

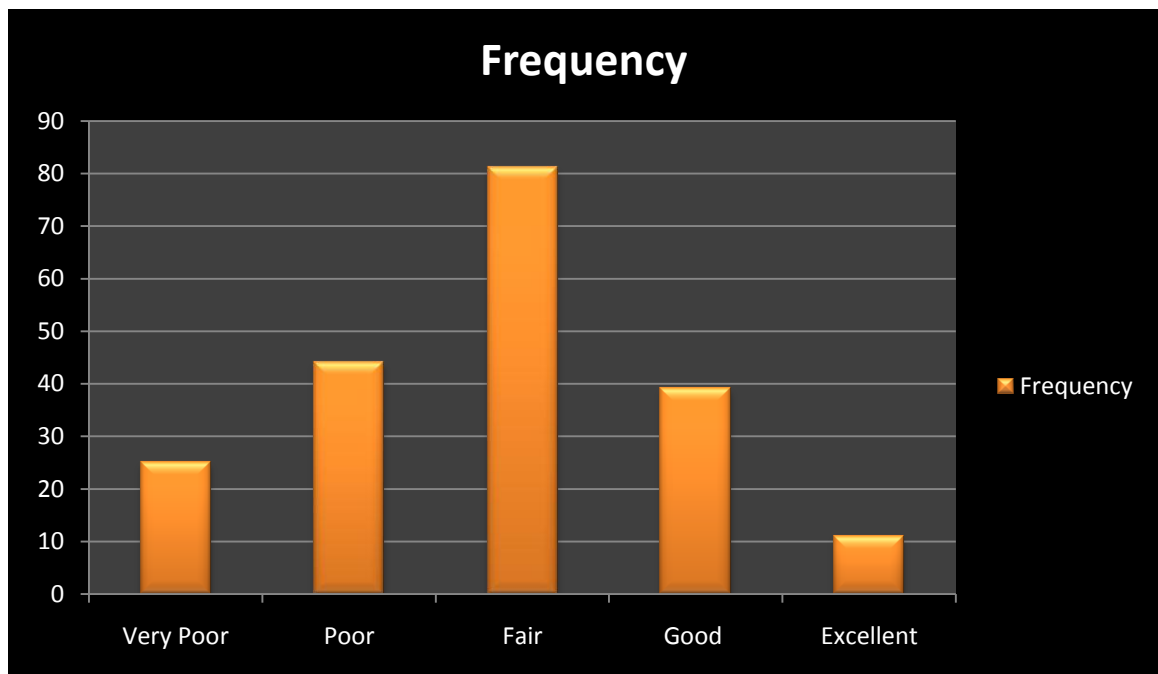


## 5.2 Consumer knowledge

Consumer knowledge as afore mentioned were measured by asking question concerning consumer knowledge and the score were ranked in five categories from level zero to four (0 - 4), respondents in category four being the most knowledgeable and in category zero being the least knowledgeable. Consumer's knowledge among respondent were normally distributed as seen in figure three, with 40.5 percent respondents being in the second level category ,followed by 22 percent and 19.5 percent being in the first and third level categories respectively and lastly 12.5 percent and 5.5 percent being in the zero and fourth level categories respectively, table three shows more clearly. Generally Consumer knowledge among respondents was averagely fair but 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. Additionally as much as 25 percent of respondents were above Fair knowledge level category the other 34.5 percent were below; which show that averagely more respondents have low knowledge on consumer rights. This variability took us to the next sub section where we will determine factors contributing to consumer's knowledge hence policy recommendation.

**Table 2: Knowledge level result in percentage**

Knowledge Category	Knowledge Level	Frequency	Percent	Cumulative Frequency
0	Low	25	12.5	12.5
1	Fairly Low	44	22.0	34.5
2	Fair	81	40.5	75.0
3	Fairly High	39	19.5	94.5
4	High	11	5.5	100





After seeing how evidence of violation experienced by consumers and the levels of knowledge each consumer attained, this subsection focuses on the determining factors contributing to difference on level of knowledge. In table four Hypothetical factors which expected to be contributing to the level of knowledge among consumer were calculated through ordered logit regression to learn if their statistical significant and determine their likely hood and marginal effects to consume knowledge. Description of variables used and Result are represented on table four and five respectively.

**Table 3: 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)	+
RURAL	Residence (Rural=1, else 0)	-
UNEMPLOYED	Occupation (Unemployed=1,else 0)	-
STUDENT	Occupation (Student=1, else 0)	±
REGION	Region (Moshi=1, Mwanza=2)	+
SMEDIA	Frequency of using social media: Everyday=1, Once a week=2, Once a month=3, Never=4	+
TRADMEDIA	Aggregated Frequency of using tradition media: Value from(0 - 9)	+
EXPVAS	Experience of violation on Value added services: (Yes=1, No=0)	±
EXPNET	Experience of violation on Network (Yes=1, No=0)	±
EXPBIL	Experience of violation on Billing (Yes=1, No=0)	±
TCRA	Awareness of Tanzania Regulatory	+

	authority Institution: (Yes=1, No=0)	
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**Table 4: Ordered logit model result against knowledge**

	Coef.	Std. Err.	P>z
GENDER	0.1883	0.2806	0.502
AGE	0.0322	0.0127	0.011 **
EDUCATION	0.0103	0.1721	0.952
INCOME	0.0016	0.0007	0.019**
RURAL	0.9548	0.4117	0.020**
UNEMPLOYED	0.3768	0.3284	0.251
STUDENT	0.3989	0.4336	0.358
REGION	1.6659	0.4245	0.000***
SMEDIA	0.3363	0.1426	0.018**
TRADMEDIA	0.0893	0.0911	0.327
EXPVAS	0.9339	0.4480	0.037**
EXPNET	1.5482	0.7957	0.052*
EXPBIL	0.2832	0.7617	0.710
TCRA	1.1376	0.3723	0.002***
Significant at *** <0.001 ** <0.05 * <0.1			
Prob > chi2 =	0.000		
Pseudo R2 =	14%		

The result shows that Gender is not significant this may be due to effort done by the government of Tanzania to bridge the digital divide among gender by education and supporting women, this same trend was found by Schmidh and Stork (2008) researched on adoption on E-skills in 17 African countries while in 12 countries gender was significant that was not the case with the remaining countries including Tanzania. Education level was also not significant this might be due to high use of social media which has been adopted by many people irrespectively of their education levels. For instance the study conducted in Morogoro Tanzania to 200 secondary school pupils shows that 94 percent of respondents were using social media which may be the one explanation why education level is not significant Jeckoniah J.N and Paul D, (2015). Moreover, Traditional media which involve Radio, Television and Newspaper are not significant this may be because most respondents are using all media which makes it hard to see the variability.

Age is negatively significant meaning that as age of consumer increase they are less likely to be know their rights. This may be due to less level of exposure as age increased to internet as more information are from internet and associated media so as older generation has less E-skills level to be able to adopt use of internet services like social medias as younger generations Schmidt and Stork,(2008). Also Income is positively significant, meaning that consumer with higher income are more likely to be have higher level of knowledge.

Further region is positively significant, meaning consumer who stays in big cities be it rural, semi urban and urban are more likely to have higher knowledge compared to ones in small cities. On the other hand rural is negatively significant meaning that consumer in rural areas irrespectively of cities are less likely to have higher knowledge; these may be due to digital divide between rural and urban in Tanzania. For instance Alison and Stork, (2008) found that in all seventeen African countries under study including Tanzania evidence of digital divide between rural and urban were seen.

Additionally other factors which are significantly contributing to consumer's knowledge are; awareness of the regulator TCRA is positively significant meaning that consumers who are aware of regulator are more likely to have higher level of knowledge, regulator as an institution which protect consumer have established consumer rights on their websites and social media related like twitter and facebook so consumer who visit their pages or offices the first thing they will see is consumer rights which may be one explanation why those consumer are more aware ([www.tcra.go.tz](http://www.tcra.go.tz)).

Exceptional finding of this study is seeing the role of social media on knowledge. Social media is another variable which shows was positively significant, meaning that consumers who use social media are more likely to have higher knowledge. One explanation may be because of high adoption of social media by operators For instance big operator companies in Tanzania like Vodacom and Tigo have pages on facebook where consumer can report claims and can be directed way forward, from which not only the claimer benefit by knowing and improving their knowledge about their rights but other people who have liked the page and their social network. Also as we have seen above TCRA have launched its page on social media which may be another reason contributing to higher knowledge of responders who uses social media.

Additionally consumer who have experienced more violation in network and value added services are more likely to have higher knowledge, one explanation may be as consumer are faced with violation they tend to ignore if it is not critical, but it is critical they may some may go out of their way to learn about their rights and act which on the other hand improve their knowledge. The question comes why consumer faced with experience of violation in network and value added services (VAS) are more likely to have higher knowledge level while those who experienced violation billing is not significant; this may be because a lot of consumer in Tanzania have subscribed to prepaid service which makes obscure to monitor their exactly uses to pose claim.

#### **4.4 Marginal effects variation among knowledge categories**

Levels of knowledge among respondents vary and were categorized in five groups, in each group their knowledge level are affected by certain variable more strongly than the other and vice versa. Marginal effects of all significant variables in all groups will be discussed.

Table six shows the magnitude effects of each variable to specific knowledge level category and its significance. Each variable contributed differently to specific category , for instance on one side categories of respondents with Low and Fairly Low knowledge, Age and Rural are positively significant while Region, TCRA, Social Media , Experience of Violation in value added services (VAS) and network are contributing negatively for these respondents to be in these categories; On the other side categories of respondents with High and Fairly high knowledge, Age and Rural are negatively significant while Region, TCRA, Social Media, Experience of Violation to value added services (VAS) and network are contributing positively for these respondents to be in these categories. Uniquely on Fair knowledge category only two variables (awareness of TCRA and Region) are significant and have positive influence for responders, meaning that if responders

reach Fair category all other variables whether they increase, decrease or remain constant their level of knowledge will not change except for improving their awareness of the regulator or change their region.

**Table 5: Marginal effect among knowledge categories**

Knowledge Category	Low	Fairly low	Fair	Fairly High	High
<b>Age</b>	0.20	0.50	-0.20	-0.40	-0.10
	++	++	NS	--	--
<b>Rural</b>	6.70	13.30	-4.90	-12.40	-2.70
	++	++	NS	--	-
<b>Income</b>	-0.010	-0.022	0.008	0.020	0.004
	--	--	NS	++	++
<b>Region</b>	-11.60	-23.20	8.60	21.70	4.50
	--	---	+	+++	+++
<b>TCRA</b>	-7.90	-15.80	5.90	14.80	3.00
	---	---	+	+++	++
<b>SMEDIA</b>	-2.30	-4.70	1.70	4.40	0.90
	---	--	NS	++	++
<b>VAS</b>	-6.50	-13.00	4.80	12.10	2.60
	--	--	NS	++	+
<b>NETWORK</b>	-10.80	-21.60	8.00	20.10	4.30
	--	--	NS	+	+

## 5. Conclusion and Policy Recommendation

Consumer rights are rights entitled by law to anyone who buy service or good. Liberalized telecommunication market is characterized with competition which led to new advanced and sophisticated services, dropping of price dramatically and increase penetration as afore mentioned on one side are positive effect on the other hand it becomes more complex for consumers especially in developing countries to make rational choices. In such environment higher consumer knowledge is crucial for them to have confidence and high bargain power hence participate actively in the

market. National regulatory authority for communication of it has been established in many countries, one of its core responsibilities being protecting consumer. Further, consumer rights were published with regulatory authorities as part of empowering consumers. Are consumers knowledgeable about their rights remaining a question to ponder.

This study has attempted to answer afore stated question; In so doing the sample of 200 consumers from two regions in Tanzania were interviewed to measure their level of knowledge and later categorized in five level with respect to their knowledge. Alongside respondents were tested for any evidence of violation they have experienced. The sample interviewed was representative of mobile phone users in Tanzania. Data were analyzed using Ordered Logit (Ologit) Regression Model run in STATA SE 12, to determine factors which contribute to consumer's level of knowledge.

Results elaborate that 99 percent of respondents reported to have experienced at least one violations. Furthermore the level of consumer knowledge was normally distributed; on one hand few knew almost all their rights while to some were the vice versa and nearly half fell in between. Further different variables impacted each knowledge level category differently, an interesting finding of this research is the role of social media in improving consumer knowledge; other variables being socioeconomic (where respondents who are older with low income and situated in rural far from big cities were more likely to be in low knowledge level category) were also respondents with prior experience of violation in network and value added services (VAS) and awareness of regulatory institution were more likely to be in high knowledge level category.

Generally as Social media have shown uniquely contribution to increase the likely hood of respondents to be on higher knowledge level categories which may be due to TCRA and operators launching their pages into social media. As population on social media enjoy that privilege, regulator are advised to use tradition media like radio, newspaper and television to advertise itself as part of improving consumer knowledge to population which is not online, rural, poor, older who would prefer tradition media. For instance operator can have a section on Television or space on newspaper where they can pass on knowledge to consumer. Secondly, regulator's social media pages needs to be updated from time to time and becomes more consumer friendly to encourage interaction among consumers. Thirdly special campaign may be obliging to improve knowledge and awareness among consumers; likely strategy has been adopted by the regulator in South Africa (ICASA) where they conduct several campaigns especially to disadvantaged consumer.

Lastly but not least regulatory authorities in other countries may consider adopting the use of social media to improve awareness as the penetration of social media improving dramatically in the world especially in developing countries.

In concluding, this paper may have some limitations as it is representative sample of mobile phone users using Research ICT Africa result which were conducted in 2008 and there might be a few changes on statistics but due to limited data availability those were recently data set found. After seeing high evidence of violation reported by consumers, and level of knowledge attained by different consumers and factors contributing to them; Further question rise, If consumers are experiencing violations, improving their knowledge of consumer right may be first approach and crucial but their awareness of procedure to follow to get their right even thou is not covered in this study but its importance cannot be underestimated in the process of protecting consumers. Future studies may concentrate on awareness of consumer toward procedure for launching claim and institutions associated.

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