

Relationship between Perceived Factors for Effective Logistics

**Relationship between Perceived Factors for Effective Logistics
and Customer Satisfaction: A Case of Tanzania's
Telecommunication Industry**

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Abstract

In recent years, the Tanzania's telecommunication industry has been seen as one of the most evolving industries in the country due to dynamic technological changes leading to increased levels of competition, thereby forcing customers to constantly switch to different companies though there are numerous logistical services provided by the companies. This research investigates the relationship between the perceived factors for effective logistics and customer satisfaction in Tanzania's telecommunication industry. Case study design methodology was used whereby primary data were obtained through observation, in-depth and documentary review. Findings revealed a coefficient correlation of 0.625, thus, it was concluded that there is a strong relationship between perceived factors for effective logistics and customer satisfaction. It is recommended that for telecommunication companies to effectively serve their customers and survive in this highly

competitive market, there is need for the telecom companies to put a lot of emphasis on perceived factors for effective logistics. Managerial and theoretical implications are also well discussed in this article.

Background to the Study

In today's competitive world, effective logistics management is a key to customer satisfaction that directly leads to customer retention and sustainable competitive advantage for the company (Gupta 2008). This implies that effective logistics management and customer satisfaction are two crucial concepts that are at the centre of any business success (Cheong et al..2005). In Tanzania, the telecommunication industry is composed of Tanzania Telecommunication Company, Airtel, Vodacom, Tigo, Zanzibar Telecommunication Company and Sasatel telecommunication companies. It is one of the industries evolving rapidly due to dynamic technological changes, leading to common networks for multiple services and experienced applications worldwide. As a result, this has increased levels of competition forcing telecommunication companies to strive harder by introducing new products in both categories of voice and data to the market.

The regulatory role within this sector is currently being performed by the Tanzania Communications Regulatory Authority which became operational on 1st July 2004, succeeding the Tanzania Communication Commission. Tanzania Communications Regulatory Authority introduced a converged licensing framework, which is a new regulatory licensing framework that promotes a service that is technology neutral and generally conducive to provision of integrated services (Kiula, 1994). This has been possible because of the increasing demand for communication services that results in high levels of competition aimed at meeting customer needs that ultimately requires establishment of a logistics department so as to ensure quality services and products.

Airtel as the case study is part of Celtel International and was founded

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in 2001 in Tanzania. In 2010, it was later rebranded as Airtel Telecom. It is also the largest telecommunication company in Tanzania based on coverage area in the country and the second largest telecommunication company in Tanzania after Vodacom telecom based on total wireless customers with about 1.7 million users (26% market share) by August 2009. Similarly it is also the pioneer of mobile banking (Zap) in Tanzania. A product that has given it a competitive edge in the market, on top of other competitive products and services that it offers to the market for example me 2 u, internet bundles (internet 3G services) prepaid roaming, voice roaming and data roaming among others. Logistics has generally been observed as a key success factor for many telecommunication companies (Allan, 2000). This is because it provides the means by which the product can reach the customer or end user in an appropriate condition and required condition as well as being recognized as a key enabler for business improvement (Rushton, 2006).

Considering Airtel Company as a case study, numerous logistical services have been offered by the company in a bid to satisfy its customers. They include good customer care services, lower tariffs, various distribution centers, a variety of products as well as excellent location options. However, despite all these logistics being offered by telecommunication companies in general, customer satisfaction has not been realized by many customers of the said companies. Many customers are unhappy with the logistics services. For example, the Tanzania's Communications Regulatory Authority report (2010) reveals that, mobile phone companies have become more of a game whereby when people are not happy with a provider's service they just switch to another provider despite the current cut throat price competition prevailing within the industry. Although this situation is somehow good for customers. It is also counterproductive to telecommunication industry. If this problem is not addressed, these telecommunication companies cannot retain their customers and hence,

cannot survive in the long run. This article sought to establish factors that influence customer dissatisfaction in telecommunication industry so as to be able to propose recommendations that can help to overcome this problem.

Overall objective of the study was to assess the relationship between perceived logistics effectiveness and customer satisfaction in Tanzania Telecommunication industry. To achieve this, the following two specific objectives were set: (1) to determine perceived factors for effective logistics at Airtel and (2) to establish factors that influence customer satisfaction at Airtel.

Literature Review

Effective Logistics

The concept of effective logistics is a very vital concept in telecommunication companies and if handled with care in any company can lead to customer satisfaction (Anderson, et al., 1994). Logistics in any company is vital in establishing customers' requirements as well as ensuring production of the right quantities, at the right place, to the right people and at the right time (Allan, et al 2008, Rushton, 2006; Barrat et al., 2001). Alan, et al. (2008), argue that effective logistics refers to coordination of both material and information flows across the supply chain. They (ibid.) further stated that effective logistics involves bringing the right amount of the right product to the right place and at the right time. Rushton (2006), also views effective logistics as a diverse and dynamic function that has to be flexible and has to change according to various constraints as well as demands imposed upon it and with respect to the environment in which it works. He (ibid.) views effective logistics as being equivalent to supply, material management and distribution. A good number of authors have tried to point out different elements of effective logistics.

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According to Rushton (2006), effective logistics is a multifaceted strategic weapon in any telecommunication company because it incorporates tailored services, distribution channel strategies, reliability, responsiveness, information, flexibility, capacity utilization, low inventory and low wastage which put customers before the company. Along similar lines, Barrat et al., (2001) view effective logistics as a coordination of material flows and information flows right from the suppliers to the end user by using an efficient and effective mode of transport given excellent infrastructures to move goods / person to the desired destination. However, despite different meanings of logistics that have been advanced by different authors in the broad literature and as already discussed, some scholars seem to agree on key things. This article therefore adopted Allan, et al., (2008) and Barrat, et al's definition of looking at logistics as a function that aims at ensuring that the company produces the right quantities, delivers the products to the right place, to the right people and at the right time. In other words it should form three kinds of utilities, form utility, space utility, and time utility.

Furthermore, Lee, et al., (2005) stated that network designs are important strategic decision tools that companies must make to ensure that required raw materials and components can be distributed efficiently from their suppliers to their manufacturing plants and ware houses, and the final products to their customers. They (ibid.) presented three new models for logistics network design with special focus on the perspective of third party logistics providers companies. For instance, logistics network design with differentiated lead time, logistics network design with price discount and consolidated logistics network design using consolidated hubs. It was believed that these models can improve business solutions. However, it should be noted that much as these logistics designs are in the manufacturing sector, they are also relevant to the service sector as can be seen in the next discussions.

Logistics Network Design with Differentiated Delivery Lead Time

Lee, et al (2005) noted that logistics network design, deals with minimizing network costs for a single commodity on assumption that there is unlimited facility, flow capacities and linear cost. The network design is sometimes referred to as the location theory. Location theory was first introduced by Alfred Weber (1909) who considered the problem of locating a single warehouse among customers to minimize total distance between warehouse and customers. In this situation, the company locates warehouses one at a time until no more warehouses can be opened without increasing the total network costs. Thereafter, the routine will necessitate to modify solutions by evaluating profit implications of eliminating the warehouses or shifting them from one location to another. To ensure that demand at different locations is satisfied to a given service level, the network design model incorporates distance, demand coverage and time constraints as service level requirements.

Logistics Network Design with Price Discount

Lee, et al (2005), stated that previous research on location problem with price sensitive demand mainly deals with a single demand value which is dependent on the pre-defined pricing policy, and the network is thus designed to serve the resulting demand. Under this network design, price discounts are used as a means to entice customers to move from the short lead time to a long lead time class. Telecommunication companies can apply this onto off-peak and on-peak customers so as to avoid congestion in the network. Therefore, price and the network design are determined simultaneously.

Logistics Network Design Using Consolidation Hubs

Lee, et al (2005), state that Logistics Network Design (LND) is concerned with maximizing utilization of a company's own network to support supply chains of multiple clients with intent to deliver good performance for each

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client. With this network design, telecommunication companies can provide customized services like telephone lines (chips) and mobile phones to its customers as well as consolidating freight and inventory using a single network for flexibility, dependability and timely response to its customers. This will help the telecommunication company to gain a competitive advantage over its competitors as well as building reputation.

Measurement of Customer Satisfaction

Oliver (1997) states that customer satisfaction can be measured by analyzing customers' emotional responses towards the company's product or service features, analysis of perception of quality by the customers, their attributions in comparison with the company's competitors products or services and perceptions of equity. Zeithaml, et al (1998), also argue that customer satisfaction can be measured through bridging the gap between perceived services and expected service by the customer. They (ibid.) stated that this gap can properly be closed by the company in question ensuring that they are reliable, responsive and empathetic to their customers as well as ensuring assurance to their customers. They (ibid.) further developed a model that can be used to measure customer satisfaction, the model is commonly referred to as the Servqual Model (Figure 2).

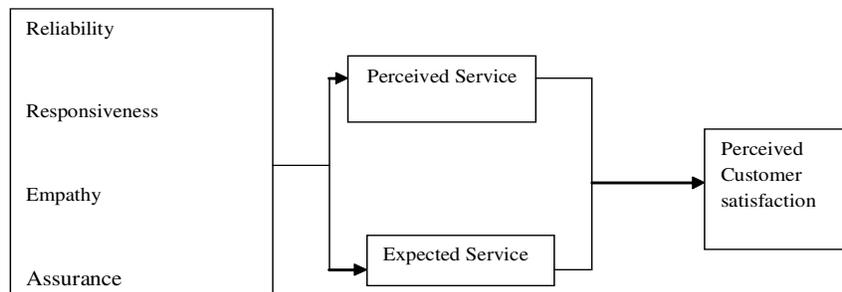


Fig. 2: *Servqual Model*

Source: *Parasuraman, Zeithaml and Berry (1998)*

From Figure 2, it is evident that customer satisfaction is attained at a point where expected services from the telecommunication company in question by the customer are equivalent to perceived services obtained (Zithaml, et al 1998). They (ibid.) argue that for these two concepts to be at the same level, the logistics department has to ensure that the company has enough physical assets (tangibles) for effective customer services, paying attention to customers (empathetic), ensuring customers safety (assurance), offering personalized services (customer responsive) and being quick in solving customers problems (reliable). This will ultimately offer perceived quality services to the customer and hence, realise customer satisfaction. Balunywa (2002), states that a product or service is very important in influencing customer satisfaction. The product is measured by performance, reliability and dependability. Customer satisfaction is also influenced by behavior of the internal customer (Haiyan, 1986). Customers want to feel good in any transaction consequently the behavior of people they come in contact with are important in determining the satisfaction. Customers always see everybody they deal with as the organization whether it is the security guard, chief executive or employees should always put on a smile for clients since it is important in influencing customer satisfaction (Ann, 2006). Livermore (1994), however, asserted that even if a good or service meets these needs, it may not necessarily result into customer satisfaction. The product may solve the problem but if it does not meet customer satisfaction, the customer will be dissatisfied. Therefore, meeting customers needs, does not necessarily create satisfaction. Customers may be satisfied if the product or service meets or exceeds their expectations. Customer satisfaction or dissatisfaction is a subjective feeling. However, it should be noted that customer satisfaction is not the direct opposite of dissatisfaction. Customers become dissatisfied if the product they want or the behavior of the sellers or their expectations are not met. When this occurs, the customer is likely to complain and take his business elsewhere (Nitin 2006). Feedback gathering from customers is also another important factor that influences

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customer satisfaction (Firdaus, 1996). Continuous customer satisfaction depends on how the customer feels. A customer may not tell the organization how he feels or whether there is a need for improvement in the product or service. Thus, it is important that the organization gets feedbacks from customers on a daily basis. This will help in understanding what a customer wants and whether he is satisfied because he is the best judge of his or her satisfaction.

Research Methodology

Kothari (2004) highlights descriptive research, analytical research, applied research, fundamental research, quantitative research, qualitative research, conceptual research and empirical research as the most used types of research. In this article, descriptive research was used to establish the state of affairs as they exist at Airtel telecom as far as logistics and customer satisfaction are concerned. He (Kothari, 2004) further identifies three main research designs; which are case study, Survey design and experimental designs. This research used a case study design because it was less time consuming and less costly as compared to survey and experimental research designs, this meant that the research was a descriptive case study design.

In this research, the population included all telecommunication companies operating in Tanzania. According to Tanzania Communications and Regulatory Authority report of 2006, there are five licensed telecommunication companies operating in Tanzania, they include Vodacom, Airtel, Tigo, ZANTEL and Sasatel Tanzania. In this research, researchers used both probabilistic and non probabilistic sampling techniques. Non-probabilistic sampling technique was employed in selection of the telecommunication company to be studied as well as in the selection of Airtel customers with relevant information. Judgmental/ Purposive sampling procedure (a non-probabilistic sampling technique) was used to select the telecommunication company (Airtel) that was included in the sample and the specific departments that are directly or

indirectly related to the logistics of the of the company that was studied. Simple random sampling procedure (a probabilistic sampling technique) was also used to select the company's customers to respond to the questionnaires.

The researchers administered a total of 150 questionnaires to Airtel customers and interviews to 20 Airtel employees in order to determine factors influencing effectiveness of logistical operations at Airtel as well as establishing the relationship between perceived logistics effectiveness and customer satisfaction. This sample was a true representative of the total population of Airtel employees who are directly or indirectly involved in the logistics of the company because only employees with wide and relevant information like managers, heads of department and company agents were interviewed.

This research used questionnaires as a data collection method, whereby the sampled Airtel customers were supplied with questionnaires. It was ensured that they were filled in the researchers' presence or given an appointment of not more than four days in order to meet research deadline.

Quantitative data were processed and analyzed with the aid of Statistical Package for Social Sciences (SPSS 16.0) software. This helped researchers to run a coefficient of correlation and coefficient of determination in order to establish the relationship between the perceived logistics effectiveness factors and customer satisfaction in Airtel Telecommunication Company. Qualitative data were analyzed by using researchers' content analysis and data interpretation whereby the researchers thoroughly went through the collected qualitative data and read them conceptually and tried to combine different ideas to get the right meaning/message from them. Most of the quantitative data were presented in form of graphs, percentages, charts and tables. Data analyzed in this article were collected from 20 Airtel employees and 130 Airtel customers out of a total of 170 questionnaires that were administered with a response rate of 100%. Data describing the

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effective logistical factors at Airtel were analyzed through content analysis from interview responses and through a descriptive analysis. Quantitative data was collected to run a coefficient correlation and coefficient of determination that guided the study in order to draw conclusions and this was enabled by the use of a statistical package for social sciences (SPSS). Data collected from secondary sources and experienced surveys were used by the researcher to supplement areas where the case study data were insufficient to give an answer to the research problem.

Perceived Factors for Effective Logistics at Airtel

As elucidated in the literature review earlier, the findings also revealed that the perceived factors for effective logistics in a telecommunication industry are excellent customer care whereby 100% of the respondents strongly agreed that it is a very crucial factor for effective logistics, 70% of the respondents consider promptness in delivering services by the company, 90% considers clear network, 95% looks at the ability of the company to provide customized services, 70% of the respondents prefers being offered with warranties and guarantees while a number of the Airtels staff that were interviewed also perceive marketing and promotions, procurement and pricing as very important factors for effective logistics in any competitive environment.

Relationship between Perceived Factors for Effective Logistics and Customer Satisfaction at Airtel

In this study, in order to establish whether or not there is a relationship between perceived factors for effective logistics and customer satisfaction at Airtel, the researcher administered 150 questionnaires to Airtel customers. Out of 130 responded to the questionnaires about their perceptions on different perceived factors for effective logistic services / products at Airtel. Thereafter, a Coefficient of Correlation was run on the

SPSS software in order to establish whether or not there is a relationship between these factors and customer satisfaction.

Measurement of Satisfaction Levels

In this study, the level of customer satisfaction was measured by using different measures of service satisfaction. These measures were; customer care whereby 81% of the customers said that it is the reason they are still sticking to the company, empathy whereby 61% of the customers said that they feel valued when they are given attention, assurance whereby 85% of the respondents considered safety while dealing with the company. The 89% of the customers said that they were satisfied when their needs were responded to as soon as possible while 89% feel satisfied when the company the company they are dealing with is reliable just like Airtel does.

Relationship

To establish whether or not there is any relationship between the perceived factors for effective logistics and customer satisfaction, the Researcher used a coefficient of correlation and a coefficient of determination using the SPSS software. The predictors were basically measures of customer satisfaction in relation to perceived factors for effective logistics. These predictors were drawn from customers perceptions about these measures for customer satisfaction and included; reliability of the staff in delivering services / products, the employees' responsiveness to customers requests, assurance which is basically a function of reputation building and instilling confidence in customers as well as ensuring safety to customers. Lastly empathy that is concerned with giving attention to the company clients and the measures for perceived factors for effective logistics which were marketing and promotion, pricing, procurement, customer care, warranties and guarantees, customized services and clarity of the network. The findings from the study are as presented in the following table.

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Coefficient of correlation table

Model Summary

<i>Model</i>	<i>R.</i>	<i>R Square</i>	<i>Adjusted R Square</i>	<i>Std. Error of the Estimate</i>
1	.625 a	.391	-.023	.54475

Source: SPSS Output on field data, 2010

From Table 16, findings shows a coefficient of correlation (R) of 0.625 and a coefficient of determination $R=r$ (squared) of 39.1%. The coefficient of correlation (R) of 0.625, shows that there is a strong relationship between perceived factors for customer satisfaction and customer satisfaction at Airtel. In the same way, the coefficient of determination of 39.1% shows that 39.1% in the variations of customer satisfaction are being explained by the perceived factors for effective logistics considered in this case, whereas the remaining 60.9% are being explained by other factors not considered in this case.

Discussion of Findings

Results from the study reveals, a ploy upon which strategic telecommunication companies can lean on for a greater competitive edge over the competitors. The study examined the relationship between perceived factors for effective logistics and customer satisfaction in the telecommunication industry and having Airtel telecom as the case study. The SPSS output was a coefficient of correlation of 0.625 and a coefficient of determination of 39.1%. This means that for a telecommunication company to attract, retain and excite customers, it must be in a position to offer an exceptional customer care, prompt distribution and transportation of services, excellent after sales services like fulfilling promises concerning

warranties, having an efficient and effective procurement department to ensure value for money as well as an efficient marketing department. They established to be perceived factors for effective logistics in a telecommunication industry. Despite the fact that the coefficient of correlation shows a strong relationship between these perceived factors for effective logistics and customer satisfaction, it is imperative to note that the coefficient of correlation of 39.1% is relatively low meaning that other factors that are not considered in this case are also important in a bid to ascertain customer satisfaction. Therefore, this should act as an eye opener to management of these companies to also carry out further research on other logistical and non-logistical factors that compliment the above mentioned perceived factors for effective logistics in a bid to attain customer satisfaction in the industry. Although it was vital for this study to incorporate all factors including even those not considered in this case, it was not possible because the study lacked enough resources in terms of finance and time was not really enough to study all factors.

However, much as this study is somewhat similar to some studies that were discussed in literature review of this study, for instance like John (2008) who carried out a study on “Marketing Competition in the Tanzanian telecommunication Industry” who with the aid of chi-square test, found out that free and open competition benefits individual consumers and the global community by ensuring low prices, new and better products. Others included services and greater consumer choice than occurs under monopoly conditions and subsequently recommended that companies should invest collectively in network expansion. This like one of the recommendations of this study and Humphrey (2009) who also carried out a study on “Factors influencing customer’s acceptability of mobile services in Tanzania, a case of Tanzania Telecommunications Company Ltd” used a descriptive study design. It is like this study and stratified sampling. It was found out that service acceptability is influenced by customer preference, wide

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coverage and mobile service delivery. It is somehow a similar case in one of the findings from this study. This study was unique from all these studies because it concentrated on perceived factors for effective logistics in the same industry (telecommunication) as well as their relationship to customer satisfaction as opposed to the mentioned studies that only looked at individual factors of logistics in the industry. In addition, the other studies used chi-square test in data analysis, whereas this study used linear regression to establish the relationship between the perceived factors for effective logistics and customer satisfaction.

In a nutshell, policy makers more especially, Tanzania Communication and Regulatory Authority (TCRA) and the management should use this study as a cornerstone for the planning process for policy executions. A coefficient of correlation of .625 shows a strong relationship between perceived factors for effective logistics that have been discussed extensively in this study and customer satisfaction. It means that the remaining factors contribute only .375 to customer satisfaction. The fact that a customer determines a company's existence, they need to be satisfied and this calls for the logistics departments in the industry to consistently monitor these perceived factors for effective logistics considered in this case and give them priority in the planning process.

Conclusions and Recommendations

Conclusions

This study had two main specific objectives; one being to establish the perceived factors for effective logistics and the other to examine whether there is any relationship between perceived factors for effective logistics and customer satisfaction at Airtel. The study found out that the perceived factors for effective logistics at Airtel are customer care, efficient distribution centers, after sales services, marketing, procurement and customer friendly

tariffs in terms of prices. After a thorough analysis of the study, it can be concluded that, in today's stiff competition existing in the telecommunication industry, for one to gain and retain a competitive advantage over its competitors, all these factors stipulated herein must be given maximum attention. However, it must also be noted that much as the above mentioned perceived factors for effective logistics are very pertinent for any telecommunication to sustain its competitiveness by attracting and retaining customers, they cannot work in isolation from other factors, for example, well streamlined policies, organized organization structures, good political climate, topographical factors and other socioeconomic-factors. As noted from the findings, it can also be concluded that a coefficient of correlation (R) of 0.625 portrays a strong relation between perceived factors for effective logistics and customer satisfaction at Airtel. This means that for a telecommunication company to compete favorably in the current dynamic market, it must seriously concentrate on effective distribution of services/products, ensure efficient customer care through workshops, seminars and consultancies, offering after sales services to customers, effective procurement and disposal of company assets through value for money as well as implementing strategic marketing strategies. This is also supported by the coefficient of determination of 39.1% that was got in the findings of this study by running the statistical package for social sciences (SPSS) software. This meant that all 39.1% in the variations of customer satisfaction are explained by the perceived factors for effective logistics considered in this particular case. The remaining 60.9% are explained by other factors like government policies, organizational structure, political climate, socio-economic factors and topographical factors among others that were not considered in this particular study.

Recommendations

Despite the presented perceived factors for effective logistics that are currently being exercised at Airtel Telecom in a bid to out serve their

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customers as well as attract more, the researcher found out that there are some logistical areas that need serious improvements. It is imperative for the telecommunication companies to note that “too much of anything is always bad” and consequently some customers are complaining of the company over sending promotional messages to them. This perturbs them so much and therefore calls for an immediate strategy of ensuring that customers get messages without necessarily being irritated. This is very possible if for example Airtel programs their systems to at least be sending a message to each customer once a day. This is good enough to inform customers about the latest on the market without overcrowding their phones with messages as well as disturbing their peace.

During the study, it was also found out that many customers have internet related problems. Complaints range from some of them not accessing internet because they hold Chinese phones, modems still expensive for low income earners and having poor networks upcountry. This research recommends that Airtel should strongly put emphasis on improving their internet basing on the three internet related complaints from customers. However, much as these problems are directed to Airtel telecommunication company, internet is a social issue of which it is the government obligation to provide social infrastructures to the public. Hence it should not be an issue only to the company in isolation of the government, but also the government should give a hand. For example, in tax exemptions and tax holidays to internet service providers so that it can help them to lower their tariffs to the public.

Although the company says it is very keen on its customer care, some customers are dissatisfied with Airtel's customer care, much as the percent of the customers who are not satisfied with the company's care is only 16% we cannot completely neglect their complaints. Some claimed that in most cases when they called customer care center, they either took long to pick the call or they did not pick at all. Other customers claimed that

there are some customer care personnel who do not know their work. For instance, a customer enters sits down and the personnel pretend to be busy. As Kotler (1994) stated, “a customer is the reason why companies exist and therefore he is the King”. Thus, this therefore calls for an immediate action by the management. The company should devise means for calling customers back in case they are busy to pick their calls at the moment they are calling customer care. They should also conduct training, consultancies, workshops and seminars aimed at improving customer care.

The company can conquer a great competitive advantage, if it can introduce uniform rates for Airtel to Airtel internationally. This should go hand-in-hand with network clearance internationally since some customers from Malawi and Zambia complained that sometimes while calling home, the networks have some disturbances though they prefer Airtel to other companies. In addition, they should also introduce the service of “nipigie” in case the caller has no enough credit like Tigo does. Some customers feels that it is a pertinent service since sometimes one can get a problem at a time when he/ she does not have airtime and may be at a time he/she cannot even access the airtime like at night.

Limitation of the Study

The study was confined to assessing the relationship between the perceived factors for effective logistics and customer satisfaction in Dar es Salaam, because the headquarters of Airtel as a case study are in Dar es Salaam. Time and resource (Finance) constraints compelled the study to use a small sample from the whole population of Airtel customers. Also, the intended interview with Airtel’s top management was not very successful for most of the time some of them claimed they were too busy to attend the interviews

Suggestions for Further Research

For an intensive and comprehensive understanding of the area of study,

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researchers recommend the following areas to be further researched in future:

- ◆ An evaluation of the influence of reverse logistics and customer sustainability in the telecommunication industry;
- ◆ The effect of logistics onto customer loyalty;
- ◆ How logistics management can be used as a competitive tool in a telecommunication company;
- ◆ Contribution of logistics towards the company's performance; and
- ◆ Attributes of effective logistics for a competitive telecommunication company.

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