
**INFLUENCE OF COMMUNICATION IN BUYER-SUPPLIER
RELATIONSHIP AND THE PERFORMANCE OF MAIZE MARKETS IN
HAI DISTRICT TANZANIA**

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ABSTRACT

This study examined the Buyer-Supplier relationship (BSR) and the performance of maize markets in Tanzania, taking Kwasadala market in Hai District as a case in point. The study focused on determining the influence of communication in BSR on the performance of maize market. The cross sectional with survey approach was used, and a total of 65 respondents were involved in this study. Data collection methods involved the use of questionnaire, interview and documentary review. Data were analyzed by using descriptive statistics and Binary Logistic. The study findings revealed that, communication variables in BSR that influence the performance of maize markets include: Reliability of Information: Credibility of information: Timeline of information: Willingness to disseminate information as well as Responsiveness to share meaningful information. It is concluded that, communication has a significant influence on the performance of maize market at Kwasadala. The study recommended that corrective measures should be taken by maize buyer, suppliers, market officials and government to improve communication in BSR and the performance of maize market.

Keywords: Communication, Buyer-Supplier Relationship, Performance of Maize Markets, Hai District and Tanzania

1.0 Motivation

Buyer-Supplier relationship¹ has today become the “backbones of economic activities in the modern world” (Nagurney, 2010) and a focal point of organisational competitiveness, performance and long-term business success (Veludo, Macbeth and Purchase, 2006). This relationship plays a significant role in positively impacting market performance of different

¹ *Collaboration between two or more chain members (buyer and supplier) working together to create a competitive advantage through sharing business related information, making decisions together, and joint sharing of benefits that is realized from profitability of satisfying end customer needs than acting alone (Togar, 2002)*

products (Xiao *et al.*, 2010). Equally, Griffith and Myers, (2005) positioned the management of supplier-buyer relationships as a primary driver of both customer and shareholder value. Buyer-Supplier relationship is an important factor between members in the supply chain (Kwon and Suh, 2004; Xiao *et al.*, 2010).

The competitiveness and profit-generating capacity of the individual firm is highly dependent on its ability to handle the commitment in the BSR (Gadde and Hakansson, 2001). In Africa, the BSR are highly observed in agricultural products markets (Gyau and Spiller 2007), for instance: through collaborative Buyer-Supplier relationship in Ghana had influenced exportation of Ghanaian tomatoes products to different overseas markets. In Cameroon, the agreements and the exchange of transparent market information are the two most important criteria for the success and sustainability of BSR in Country's non-timber forest products (NTFP) sector (Foundjem-Titaet *et al.*, 2013).

In Tanzania, 80% of the population is mainly engaging in farming activities especially maize production for their livelihoods (URT, 2008). Maize is not only a staple crop in surplus regions in Northern Tanzania, but also it is a cash crop in different regions including Arusha and Kilimanjaro, as it is among of important maize growing areas, accounting for about 10% of the total national maize production (Ephraim, 2000). Small maize farmers and traders in Tanzania had been trying to form contractual and non-contractual relationships among themselves with intention of developing trust, commitment, dependence and good communication among them. However, this relationship had observed not only to bring benefits to buyers (maize traders) but also to the smallholder maize producers.

The presence of valuable BSR among maize sellers and buyers plays a significant role in raising individual incomes and contributing to the overall national income (Match Maker Associated, 2010). In Tanzania, BSR is not only observed in business organizations, but also in maize marketing system which is highly characterized by large number of small farmers and traders operating both from the main centres of production and from the major urban areas in Tanzania (Match Maker Associated, 2010). However, communication (information sharing) and product quality in any Buyer-Supplier relationship portray significant role in enhancing organizational and market performance. Other dimensions for instance commitment and trust in Buyer-Supplier relationship has additional importance as it enables farmers to always produce adequate kilograms of maize per period so as to be collected by traders and transported to the main trading market in Dar es Salaam, where brokerage between millers and traders, takes place (SAGCOT, 2010).

As a result of high production of buffer stock of maize in Northern zone particularly in Hai district Kilimanjaro, it had assisted the expansion of maize markets since 1990s'. For example, in the early 90s Tanzania estimated that, 25% of the overall maize produced from northern regions and other regions were traded. This is an increase of 5 percentage points from the 1983/84 estimate of 20%. Currently, it is estimated that the percentage of marketed share is 40% (MAFSC, 2015). It is a true fact that, the effectiveness of Kwasadala maize market performance depends on the effectiveness of the Buyer-Supplier relationship among maize producers and buyers.

Despite the establishment of different informal buyer-supplier relationship among maize producers and maize buyers at Kwasadala village since liberalization of markets, in larger part these Buyer-Supplier relationship was experiencing inefficiency due to difficulties associated with communication constraints between practitioners and insufficient quality of maize produced by maize suppliers (farmers), which in turn resulted to poor performance of maize market. Despite this, few research studies have been conducted to determine influence of communication in buyer-supplier relationship and the performance of maize market focusing on local grounds levels. This study intended to determine the influence of communication in Buyer-Supplier relationship and the performance of maize market based at Kwasadala market in Hai district.

2.0 Literature Review

2.1 Theoretical Literature Review

In assessing the Buyer-Supplier relationship and the performance of maize markets in Tanzania, the study used the following theories:

Transaction Cost Economics (TCE) theory

According to this theory, collaboration in a BSR (in this study: Buyer-Supplier relationship in maize market) is based on the lowest transaction costs (Claro *et al.*, 2004). Williamson (1985) proposes that at high levels of collaborations Buyer-Supplier relationships will be closer to the vertical integration extreme of the Buyer Supplier-relationship forms(collaboration partnership) and lower levels of collaborations to the other extreme which is the spot-market transaction (adversarial). However, transaction costs are usually difficult to measure, hence transaction specific investments is used to measure the transaction costs.

Transaction specific investments involve human and physical assets that are committed to particular relationships and cannot be removed. Such assets can be in human knowledge and skills and in physical assets. Even if strategic management postulates that investment in assets is a source of competitive advantage, high levels of transaction specific investments (TSI) would affect the Buyer-Supplier relationship negatively by promoting dependence and other governance hazards, such as opportunism, however this is commonly observed even in Buyer-Supplier relationship in maize markets as portrayed by (Claro *et al.*, 2004).

The advantages of TSI include assurance that counterparts will honor obligations thus avoiding opportunistic behavior as TSIs are a form of an exit barrier. TSI is therefore an imperative means of achieving closeness in a Buyer-Supplier relationship (for this case in maize markets) because the exit barrier brought about by the purposeful creation of specific assets confers a sufficient reason for maize buyers and suppliers to continue with the collaboration and ensures that counterparts subsist to their promises. Likely, this collaboration ensures increased commitment between the parties involved in maize trade. Usually small maize farmers and maize traders expects to obtain the benefits of establishing the partnership, without fully committing to acting in each other's best interests in order to bring about the desired results (Drake and Schlachter, 2008). Long term commitment is a basic requirement for successful supply chain implementation (Kwon and Suh, 2005).

The Relational Exchange Theory

Buyer-Supplier relationship has also been studied using the relational exchange theory. The theory meets some of the shortcomings of the TCE theory, whereby: Buyer-Supplier relationship exchanges collaboration characteristics in which individuals' effectiveness are considered by the overall effectiveness of the system and individual decision makers adopt a joint action orientation (Claro *et al.*, 2004), and this is observed to have greater effects in Buyer-Supplier relationship performance (in this study: on maize market performance). The extent buyer-supplier literature reveals numerous ways in which relationships have been characterized and hence making them to be of greater effects on markets performance, these includes: relationship strength (Martin and Gerbac, 2003; Benton and Maloni, 2005), closeness, or physical proximity (Narasimhan and Nair, 2005), from the buyer's perspective supplier's perspective (Maloni and Benton, 2000), and dyadic perspectives (Johnston, McCutcheon, Stuart, and Kerwood, 2004). Such research has revealed several common underlying fundamentals of these relationships: coordination, collaboration, quality, commitment, communication, trust, flexibility, and dependence.

Buyer-Supplier relationship and the performance of maize markets in Tanzania can be explained by a combination of mentioned theories which together form a body of knowledge to the subject, whereby: the theory of Transaction Cost Economics (TCE) provide the foundation of collaboration between parties (small maize producers and the small maize buyers). With reflect to theory, collaboration is formerly based on lowest transactional costs which is measured by transaction specific investments explained in terms of human assets (collaborators perspectives and skills) and physical assets (buyers' money v/s producers' products).

On other hand, the relational exchange theory provides the basic characteristics of collaboration that have greater effects on Buyer-Supplier relationship, some other characteristics include: product's quality, actors' communication, trusts, flexibility, and dependence. Basing on the strength of relational exchange theory on the Buyer-Supplier relationship on maize market performance, this study focused much to test the relational exchange theory.

2.2 Empirical Literature Review

The study by Sanders *et al.* (2011) on the influence of communication in Buyer-Supplier relationship on maize market performance revealed that, frequent and timely communication together with credibility of exchanged information are important parameters in for effective communication because it assists in resolving disputes and aligning perceptions and expectations of maize actors. The study showed that, communication can be formal as well as informal sharing of meaningful and timely information between parties involved in partnership. Moreover, effective communication is therefore essential for successful collaboration of any relationship (Mohanty and Gahan, 2012).

Biggeman (2012) identified three aspects of communication behavior that are important to successful Buyer-Supplier relationship in maize market performance: willingness of parties involved to disseminate meaningful information, communication quality, extent of information sharing between partners and participation in planning and goal setting. Communication quality includes the accuracy, timeliness, adequacy, and credibility of information exchanged. Participation refers to the extent to which partners engage jointly in planning and goal setting. Information sharing is a form of collaborative communication that promotes trust and supports Buyer-Supplier relationship in cereal markets. Information sharing is the ability to synchronously share real-time information with supplier and customers (Biggeman, 2012; Meacham, 2013).

Ruyter *et al.* (2001) revealed that, formal and the informal sharing of information through frequent two way dyadic inter-changes, also plays an important role in realizing the benefits of Buyer-Supplier relationship in maize markets. This agrees with study conducted by (Sanders *et al.*, 2011) who reveal that processes of information acquisition, assimilation and conversation have become increasingly critical for relationships development in agricultural products. According to Sanders *et al.*, (2001), through intense and frequent sharing of accurate information with suppliers, the buying firm harmonizes a competitive market force which leads to commitment in Buyer-Supplier relationship.

Upon reviewing different empirical literatures, it has been observed that many studies have been conducted concerning the Buyer-Supplier relationship basing on the ordinary perspectives, where these relationships is based on formal contractual relationship. Also literature has discussed much about the determinants of BSR, prospects of effective market performance to the community, and different types of BSR. However, in Tanzania: particularly in the study area, there are few studies conducted on issues related to the communication in buyer-supplier relationship and the performance of maize markets in Tanzania. It is this gap that has motivated the undertaking of the current study to fill this pertinent knowledge gap.

2.3 Conceptual Framework

Independent variables of this study include communication in BSR, which includes: Reliability of Information, Willingness to disseminate meaningful information, Timeline of information, Credibility of Information and Responsiveness to share information and its influence on maize market performance. On other hand, the dependent variables for the study are maize market performance, which is measured in numerous ways: sales, profit, productivity, revenue, market growth, price, improvements in product/process design as well as other financial ratios (Lee and Bose, 2002). However, market performance under this study was measured through: profitability, sales volume, market growth and sales revenue. This is clearly illustrated in figure 1.

Independent Variables

Dependent Variable

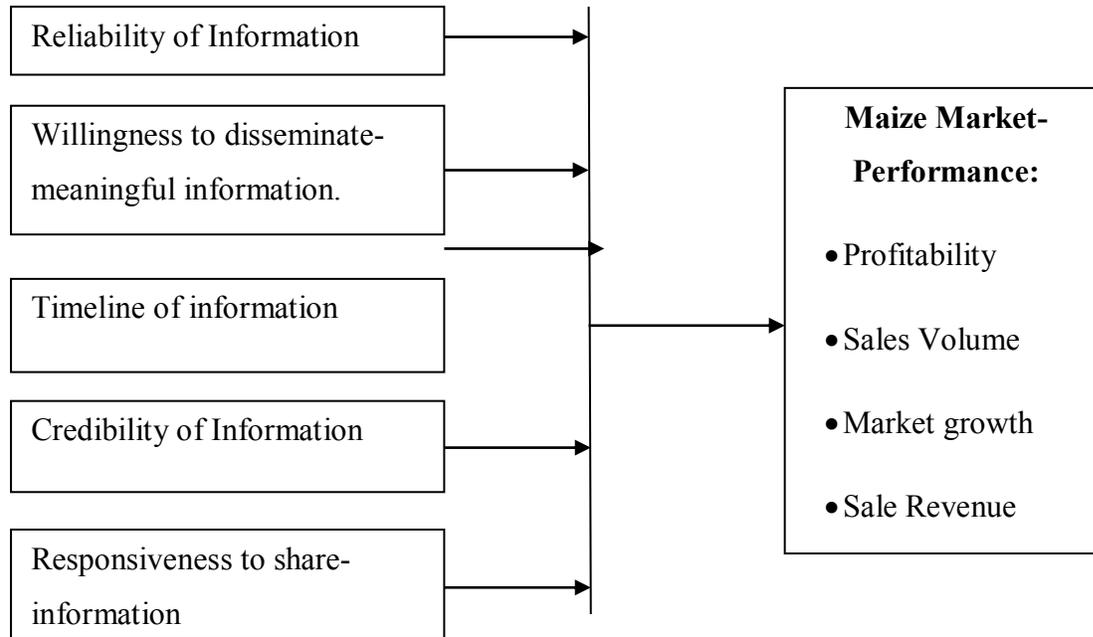


figure 1 : Conceptual Framework

3.0 Methodology

A cross sectional design with survey strategy was adopted as it the appropriate strategy for research projects undertaken for academic courses with time constraints (Saunders, 2009). Since Cross-sectional studies often employ the survey strategy (Easterby-Smith *et al.*, 2008), it was an important approach in describing the incidence of a phenomenon and the relationship between factors regarding to communication in BSR, and the performance of maize market. Likely it was an appropriate method as it allowed the use of both quantitative and qualitative methods in the study. The study was conducted at Kwasadala market in Hai district Kilimanjaro Tanzania. The market is an excellent centre for maize trade that feed not only the near by markerts but also other markerts in Arusha, Moshi, Tanga, Dar-es-aalam and other East African Markets in general. The market is observed to contain many maize farmers who deliver the products from farms and maize mechants who collects them for sale, hence there is establishment of some relationships between these parties involved. Therefore, this are afostered good population of the study that had scientifically been representative of the picture of Buyer-Supplier relationship on maize market performance in Tanzania.

Primary data was collected directly from maize producers, maize traders and market committee members (market officials) through the use of questionnaires and interviews. Secondary data was collected from different statistical data and documentation available. The interviews were conducted to some maize suppliers and buyers who had limited time when filling their questionnaire. Self-administered questionnaires were provided to market officials, maize buyers and maize supplier to enabled respondents to fill in their times of convenience. The questionnaires were designed according to the objective and the variables of objectives 1, 2 and 3 of the study. The responses to the questions were anchored on a five (5) point Likert scales ranging from 5= strongly agree to 1= strongly disagree. Different existing information from statistical data and documentation available like books, journals and publications including: Kannan (2006), on impact of buyer supplier-relationship Szwejczewski(2005) on supplier Relationships, Dobler(2003) on Buyer-Supplier relationships performance, and other documents were reviewed to determine the influence of communication in Buyer-Supplier relationship on maize market performance.

The study expected to cover 96 respondents as it was arrived through formula provided by Poduri (2000) (see appendix I). The targeted respondents in this study were market officials, buyers, and suppliers. A total of 65 respondents participated while the rest just could not participate at the time. This resulted in a response rate of 68%. Babbie (1990) stipulated that a response rate of 50% is adequate whilst Bailey (1987) posit an adequate response rate of 75%. Mugenda (2008) affirm that a response rate of 50% is adequate, 60% and above good, and above 70% very good. Thus a response rate of 72%, obtained in this study is quite adequate. The response was higher among the suppliers than in the other categories. This was accounted by reluctance and inaccessibility among the buyers and market officials. The sample size distribution is summarized in Table 1.

Table 1: Sampling Distribution

| S/No. | Category | Population | Sample size (10%) |
|--------------|------------------|-------------------|--------------------------|
| 1. | Market Officials | 50 | 5 |
| 2. | Buyers | 280 | 28 |
| 3. | Suppliers | 320 | 32 |
| 4. | Totals | 650 | 65 |

Purposive sampling technique was used to target respondents who included maize buyers, suppliers and market officials at Kwasadala market. Simple random technique was then used to select sample from a list of maize buyers provided from the office of the kwasadala market.

Simple random sampling allows the researcher to select sample without bias (Saunders *et al.*, 2009). Data found from the sample selected were then generalized to a larger population. To ensure validity of data, the study employed the triangulation process which involved the process of collecting data using multiple sources whereby the facts obtained from each source were supporting each other. Cronbach's Alpha as a measure of internal consistency was used and result from the field indicated the Cronbach's Alpha value was 0.781 which was acceptable. This corroborates with George and Mallery (2003) that the study is reliable if a Cronbach's Alpha scale of 0.7 and above is obtained. Hence basing on scale by George and Mallery (2003): strong excellent ($a \geq 0.9$), good ($0.8 \leq a < 0.9$), acceptable ($0.7 \leq a < 0.8$), questionable ($0.6 \leq a < 0.7$) and poor ($0.5 \leq a < 0.6$) the study was observed to be reliable.

Both qualitative and quantitative techniques were used to analyze the data. Descriptive statistics like means, percentages and standard deviations were used. Tables and charts were used to present the study results. Data were entered and analyzed aided by Statistical Package for Social Scientists (SPSS) Version 20 and Microsoft Excel. The study focused on to identify the influence of communication in Buyer-Supplier relationship and the performance of maize market. Logistic regression technique was quantitatively used to analyze and to explain this relationship. However, the study adopted the following logistic regression model to describe the expected relationship between the variables:

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e \dots \dots \dots (1)$$

Table 2: Definition of Model Variables

| Variable | Variables definitions and Units of measurement |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------|
| Dependent variable Maize market performance | Dichotomous = High score: Good market performance Low score: Poor market performance |
| Independent Variables | |
| a = | Y intercept when X is zero |
| β's = | Regression Coefficients |
| ROI (X ₁) = | Reliability of Information, Dummy: (0=don't share RI, 1=shares RI,) |
| COI(X ₂) = | Credibility of information, Dummy: (0= low, 1= high) |
| MD (X ₃) = | Timeline of information, Dummy: (0= don't share TI, 1=shares TI) |
| WDI (X ₄) = | Willingness to disseminate information, Dummy: (0= no, 1=yes) |
| RTI (X ₅) = | Responsiveness to share information, Dummy: (0=no, 1=yes) |

4.0 Findings and Discussion

4.1 Socio-Demographic Characteristics of the Respondents

The discussion of the background of socio and economic characteristics of the respondents in this study is presented by using tables and charts based on variables like sex, age, education level, marital status, working experience and occupation of the respondents. Results in table 4 show evidently that majority of the respondents were male 52.3% while the females constituted 47.7%. As for education level of the respondents, findings in table 4 revealed that, 46.2% have primary education level, 23.1% have secondary education level. The study also revealed that, 20.0% have got no education while, 10.8% of total respondents have more than secondary education. This indicates that rural areas still face the problem of lack of education, and most of maize farming and trade activities in local areas including Kwasadala village are still undertaken by personnel who have low education level as compared to urban areas. However, some of respondents have the more than secondary education, which reveal that they are likely to engage in long term Buyer-Supplier relationship because of the realized advantages. Kamarulzaman (2008) prove that, the level of education has influenced the maize growers (suppliers) and the maize traders (buyers) to engage in a long-term relationship. The maize growers and traders who received high school education were more likely to engage in a longer term relationship.

Furthermore, the study findings revealed that, 49.2% were maize farmers (suppliers) while 43.1% were maize traders (buyers). This indicates that, buyers and suppliers are more dominating the maize market, and that agriculture is the most economic activity that attracts many people in Hai district as compared to maize trade and office employment. This is also motivated by the reason that maize is observed to be the most staple food most of Tanzanians, hence it provides nutrition to the farmer’s families.

Table 3: Socio-demographic characteristics of respondents

| Demographic variable | Category | Frequency (n= 65) | Percent (%) |
|-----------------------------|------------------|--------------------------|--------------------|
| Gender | Male | 34 | 52.3% |
| | Female | 31 | 47.7% |
| Education level | No school at all | 13 | 20% |
| | Primary | 30 | 46.2% |
| | Secondary | 15 | 23.1% |
| | Others | 7 | 10.8% |

| | | | |
|------------|----------------------------|----|-------|
| Occupation | Market Official | 5 | 7.7% |
| | Maize trader/buyer only | 28 | 43.1% |
| | Maize farmer/supplier only | 32 | 49.2% |

4.2 The Influence of Communication in Buyer-Supplier Relationship and the Performance of Maize Markets

Findings in figure 2 indicates that, majority of respondents (68%) disclosed that the nature of Buyer-Supplier relationship that exist at Kwasadala maize market is collaborative, while the rest (32%) portrayed that, the nature of BSR in the maize market is adversarial nature of relationship. This was indicated by both parties to have the power to shape their future direction over time, not only of this but also presence of mutual commitment among themselves for future and balanced power relationship while developing mechanisms for managing conflict rising among maize buyers and suppliers. Therefore, the study indicate that: the majority of maize buyers and suppliers practice the collaborative (long-term) nature of Buyer-Supplier relationship. This indicates that the long term relationship between maize suppliers and maize buyers is assisted by communication focusing on shairng of information regarding to maize markets. This is in line with the observation by Biggeman (2012) that communication assists collaborative information sharing hence promoting trust and supports business growth.

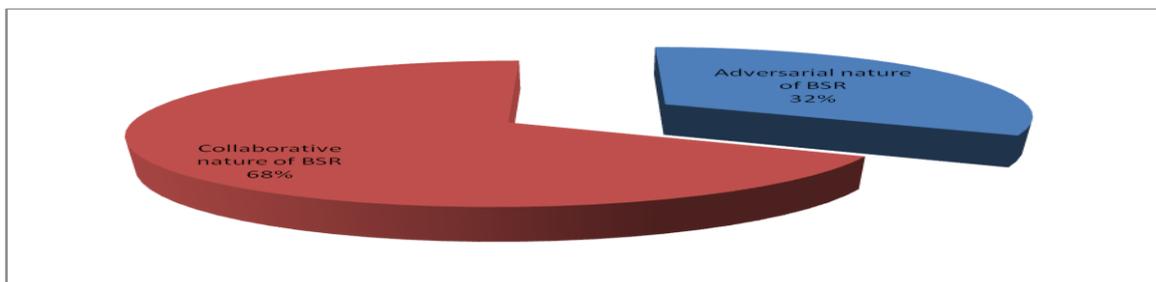


Figure 2: Nature of Buyer-Supplier relationship at Kwasadala Maize Market

In the same, Muhwezi (2010) noted that information sharing is important for any collaborative BSR. Thus information sharing also reduces opportunistic behavior, increases commitment and fosters the establishment of long-term relationships between buyers and sellers of agricultural products (Sanders *et al.*, 2011 as cited by Biggeman, 2012). Basing on these facts, it is true that: collaborative nature of Buyer-Supplier relationship in maize markets is highly promoted by communication and information sharing between maize buyers and suppliers. However, the existence of collaborative Buyer-Supplier relationship implied existence of long term

commitment between buyer and sellers at Kwasadala maize market, also it revealed establishment of mutual goals and shared benefits among them while ensuring high sale volume and reasonable prices that leads to profitability as a result better maize market performance.

4.3 The influence of communication in buyer – supplier relationships on the performance of maize market

In order to determine the influence of communication/information sharing in buyer – supplier relationships on the performance of maize market, the researcher administered a set of questionnaires to maize buyers and sellers to determine the first hand information. Then a researcher conducted a logistic regression analysis to explain the influence of communication in Buyer-Supplier relationship on the performance of maize market. The study adopted the following logistic regression model to describe the expected relationship between the variables: $Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e$. Where: Y= Maize market performance (yes = 1 if there is good market performance, no = 0 if there is poor market performance).

Table 5: Definition of Model Variables

| Variable | Variables definitions and Units of measurement |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------|
| Dependent variable Maize market performance | Dichotomous = High score: Good market performance Low score: Poor market performance |
| Independent Variables | |
| a | Y intercept when X is zero |
| β's | Regression Coefficients |
| e | Error Term |
| ROI (X ₁) | Reliability of Information, Dummy:(0=don't share RI, 1=shares RI,) |
| COI(X ₂) | Credibility of information, Dummy:(0= low, 1= high) |
| MD (X ₃) | Timeline of information, Dummy: (0= don't share TI, 1=shares TI) |
| WDI (X ₄) | Willingness to disseminate information, Dummy: (0= no, 1=yes) |
| RTI (X ₅) | Responsiveness to share information, Dummy:(0=no, 1=yes) |

Maize market performance was measured using the responses on the effect of various established communication variables in buyer–supplier relationship: a= the Y intercept that is the value of Y when X is zero: β₁, β₂, β₃, β₄and β₅, are regression coefficients of the following variables

respectively: X_1 = Reliability of Information: X_2 = Credibility of information: X_3 = Timeline of information: X_4 = Willingness to disseminate information: X_5 = Responsiveness to share meaningful information. All the five independent variables were also measured using the response son each of the variables obtained from the respondents. The definition and measurement of model variable are indicated in Table 5.

Basing on the established regression model, logistic regression was used to predict whether communication variables in BSR influence the performance of maize market or not. Binary logistic regression was carried out to determine the influence of communication variables namely: Reliability of Information, Credibility of information, Timeline of information, Willingness to disseminate information, and Responsiveness to share meaningful information, on the performance of Kwasadala maize market. The result presented in the model summary revealed that it was statistically significant where: $\chi^2 (5) = 15.23$, $p < 0.05$. The established model explained (Nagelkerke R^2) of 20.8% of the observed variance on communication variables in Buyer-Supplier relationship (BSR) and its influence on the performance of Kwasadala maize market.

In order to determine the probability of communication variables in BSR on influencing the performance of maize market at Kwasadala, the researcher used binomial logistic regression to estimate this probability. Additionally, the researcher made description of percentage accuracy in classification of: sensitivity of prediction, specificity of prediction, the positive predictive value as well as negative predictive value. These were assisted by the use of SPSS set threshold of 0.05 in order to predict the influence of communication variables in BSR on the performance of maize market. Table 11 indicates the classification table. The study identified the sensitivity of the model where: the sensitivity is the percentage of the group that agrees with the statement that has been accurately identified by the model: on other words it is called the true positives. Results in the table revealed that, the sensitivity of prediction resulted into correct prediction that, 71.9% of the respondents revealed that communication in Buyer-Supplier relationship influence the performance of maize market at Kwasadala.

Table 4: Classification Table

| Observed | | Predicted | | | |
|-----------|---------------------------------------------------------|---------------------------------------------|-------|--------------------|--------|
| | | Buyer-Supplier relationship in maize market | | Percentage Correct | |
| | | 0 No | 1 Yes | | |
| Step 1 | Buyer-Supplier relationship in maize market-recorded 01 | 0 No | 14 | 31 | 36.2% |
| | | 1 Yes | 11 | 9 | 71.9% |
| Overall % | | | | | 54.05% |

a. The cut value is .500

Moreover, the study intended to determine the specificity of the model, which indicates the percentage of the group without the agreement with statement been accurately identified by the model and this is (true negatives). The result of analysis was correctly predicted that, 36.2% of respondents did not accept that communication in BSR influence the performance of maize market at Kwasadala. Furthermore, the study sought to determine the positive predictive value. However: Peat (2001) defined a positive predictive value as the percentage of cases that the model classifies as having the characteristic that is actually observed in the group.

The results revealed in Table 6 indicated the positive predictive value of 77.5%. This was calculated by dividing the number of cases in the predicted = yes cell (31), and observed = yes cell (9) by the total number in the predicted = yes cells (31 + 9 = 40) and multiplying by 100 to give a percentage. This gave us $31 \div 40 \times 100 = 77.5\%$. However, this result implied that among the people predicted that the named communication variables in Buyer-Supplier relationship influence the performance of maize market, the model accurately picked 77.5% of them.

The study also intended to determine the negative predictive value, and this was calculated by dividing the number of cases in the predicted = no cell (14), and observed = no cell (11) by the total number in the predicted = no cells (14 + 11 = 25) and multiplying by 100 to get a percentage. This give us $14 \div 25 \times 100 = 56\%$. Basing on the negative predictive value of 56%, the implication of this result is that, among the people predicted that the performance of maize market at Kwasadala is not influenced by the named predictor variables of communication in BSR the model accurately picked 56% of them. On other hand, the results in Table 12 indicate

the logistic regression coefficient, Wald test as well as Odds ratio for each of the predictor variables.

Table 7: Binary Logistics Regression Predicting the Influence of Communication/Information Sharing in Buyer-Supplier relationship on Maize Market Performance

| Predictor Variables | B | Wald x² | P | Odds Ratio |
|-----------------------------------------------------------------------------------------|----------|---------------------------|----------|-------------------|
| Reliability of information | 0.831 | 3.178 | 0.140 | 2.316 |
| Credibility of information | 1.690 | 4.611 | 0.231 | 2.491 |
| Timeline of information | 0.137 | 3.340 | 0.164 | 2.274 |
| Willingness to disseminate information | 1.791 | 5.618 | 0.341 | 3.186 |
| Responsiveness to share information | 1.730 | 5.207 | 0.396 | 3.508 |
| Number of observation= 65, Negelkerke R ² = 0.208, -2Long likelihood=102.130 | | | | |

With reflect to 0.05 criterion of statistical significance, reliability of information, credibility of information, timeline of information, willingness to disseminate information, and responsiveness to share meaningful information in BSR had significant influence on the performance of maize market at Kwasadala. The odds ratio for reliability of information indicated that when all other variables are kept constant, communication in BSR has 2.316 times likely to influence the Buyer-Supplier relationship. The odds ratio for Credibility of information in BSR revealed that, for each unit increase of this predictor variable, there are 2.491 of the odds that the performance of maize market will be good given that this variable is 2.491 times more likely to influence the performance of maize market at Kwasadala. The odds ratio for Timeline of information in BSR revealed that, for each unit increase of this predictor variable, there are 2.274 of the odds that the performance of maize market will be good. The odds ratio for willingness to share information in BSR revealed that, for each unit increase of this predictor variable, there are 3.186 of the odds that the performance of maize market will be good. Additionally, the odds ratio for responsiveness to share information in BSR revealed that, for each unit increase of this predictor variable, there are 3.508 of the odds that the performance of maize market will be good. The findings indicated the Negelkerke (R²) values is 0.208, since it is in the acceptable range of between 0.2 and 0.6, however this implies that the modal was strong. The results also indicate that, communication variables in Buyer-Supplier relationship including: reliability of information, credibility of information, timeline of information, willingness to disseminate

information, and responsiveness to share meaningful information have strong influence on establishment of good maize market performance at Kwasadala.

The study findings generally indicated that, for every unit increase in measure of communication variables in Buyer-Supplier relationship at Kwasadala market, it causes the measure of maize market performance (in terms of profitability, sales volume, market growth and revenue) to increase which implies good market performance. The study by Sanders *et al.* (2011) on the influence of communication in BSR on maize market performance revealed that, frequent and timely communication together with credibility of exchanged information are important parameters in for effective communication, hence this study slightly complies the generated field findings. Likely, the study by Mohanty and Gahan (2012) revealed that effective communication in terms of sharing credible information, timeline information and reliable information are essential for successful collaboration of any Buyer-Supplier relationship, additionally the this study agrees with study conducted by (Sanders *et al.*,2011) who reveal that processes of information acquisition, assimilation and conversation have become increasingly critical for relationships development in agricultural products.

The study went further to identify the verification of the statistical significance of the predictor variables, the regression result on the table 10 indicated that, all predictive factors including: Reliability of information ($p=0.140$), Credibility of information ($p=0.231$), Timeline of information ($p=0.164$), Willingness to disseminate information ($p=0.431$), as well as Responsiveness to share information ($p=0.396$) were statistically significant as they have the p-value greater than 0.05. Therefore, basing on objective number one aimed at determining the influence of communication/information sharing in Buyer-Supplier relationship on the performance of maize market at Kwasadala, it was revealed that the results generated confirms with the relation exchange theory, which generally states that: among underlying fundamental for effective Buyer-Supplier relationship and the performance of markets communication plays significant role.

5.0 Summary, Conclusion and way forward

From the findings of this the study, it has been revealed that despite the fact that the established communication in Buyer-Supplier relationship at Kwasadala market was informal based relationship, it was established that collaborative nature of BSR was dominating (68%) as compared to adversarial nature of relationship which constituted only 32%. The study indicated that, among different measures of maize market performance at Kwasadala, profitability and sales volume was observed as the most important factors that measure the market performance as they constituted the mean score of 4.4036 and 4.4585 respectively.

It was also observed that, communication in BSR has a greater influence in the performance of maize market. However, the established communication variable to measure its influence on the performance of maize market at Kwasadala was observed to be statistically acceptable as the KMO test revealed 0.620, which comply with the argument by Keyser (1974) who recommend that accepting the value greater than 0.5 is acceptable otherwise more data should be collected or researcher should rethink on the variables to include. Importantly, the study findings revealed that the established communication variables: reliability of information in BSR, timeline of information in Buyer-Supplier relationship, willingness to disseminate meaningful information in Buyer-Supplier relationship as well as responsiveness to share information in Buyer-Supplier relationship were significant predictor variables of maize market performance at Kwasadala.

Again, the study indicated that for every unit, increase of the communication variable in Buyer-Supplier relationship brought the increase in unit measure of maize market performance in terms of profitability, sales volume, market growth and revenue as it was discussed on the findings. It is therefore concluded that for maize buyers and sellers to ensure that they share reliable information, timeline information while ensuring they have quick response in sharing information. By doing this, it will bring about good performance of the maize market at Kwasadala market.

Basing on the research objectives and the findings, the study recommends different measures to be taken by maize buyers, maize suppliers, market officials and the government so as to enhance Buyer-Supplier relationship and the performance of maize market. These include: The need for maize buyers and sellers to recognize the relative importance of communication by ensuring that they share reliable, timely, and credible information among the parties to the maize supply chain and systems.

To ensure better maize market performance, the study also recommends the need for both parties to ensure equal distribution of revenue between them by avoiding all actions that suppress the voice of either of the party, example setting too high price (by sellers) or too low price (by buyers). If this is observed, then sustainable BSR and the better performance of maize market at Kwasadala will increase. Finally the study recommends market officials to register all maize buyers and supplier involved in the maize trade and to encourage them to form different groups that will strengthen their communication channels which will help them to have the benefits of effective Buyer-Supplier relationship like a common say regarding the price issues and trends.

6. Areas for Further Research

Based on the study objectives, theoretical empirical literature review and the study findings, a number of critical gaps have been generated in the areas of Communication in Buyer-Supplier Relationship and the Performance of Maize Markets. This brings us to the need for further examination on some key aspects related to this subject matter. A comprehensive study can be done in the role of the government in promoting BSR in maize markets. Another interesting area on which researchers may embark on is on the dimensions of maize quality and buyer-supplier relationship in the maize markets in Tanzania. There is also a need for a baseline survey in the four main maize-producing regions situated in the south-west of the country (The big four: Iringa, Mbeya, Ruvuma, and Rukwa) that will come with accurate and formative data on challenges of communication in buyer-supplier relationship on maize markets and structure performance.

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Appendix I: Sample Size Calculation

$$n = \frac{NZ^{2\alpha\beta}}{Z^2\alpha\beta + 4(N-1)E^2}$$

- Where n= sample size
- N= the sample population
- Z= is the standard normal distribution at 5% level
- E= the precision error, which is assumed to be 10% (0.1)

NB. 119 is the total number of registered number maize buyer and suppliers at Kwasadala market (Market report, 2016)

10 is the number of market officials at Kwasadala market

129 (119+10) is the total sample population.

Therefore

| |
|----------------------------------------------------------------------------------------------------|
| $n = \frac{129 \times (1.96)^2}{(1.96)^2 + 4(129 - 1) \times (0.1)^2}$ <p>n= 96.124 equivalent</p> |
|----------------------------------------------------------------------------------------------------|