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## SUGARCANE OUTGROWERS' VIEWS ON CONTRACT FARMING SERVICES QUALITY IN KILOMBERO VALLEY, TANZANIA

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### ABSTRACT

*Contract farming (CF) promises many benefits for sugarcane outgrowers in many cases. However, studies debate on whether sugarcane smallholder farmers get quality services from CF relations. As a response to the debates, this paper provides a systematic analysis of two issues critical to the performance of sugarcane contract farming in Kilombero Valley: the extent to which farmers are satisfied with the services received through farmers' associations and the satisfaction status of farmers on contract farming services the sugarcane buyer offers. The paper also determines the associations between farmers' views on satisfaction with CF services and their household characteristics. The paper adopted a cross-sectional study design in which 300 outgrower farmers were interviewed. Data were analysed using IBM Statistical Package for Social Sciences (SPSS) Statistics, and Microsoft Excel. The paper used SERVQUAL model, adapted to the sugarcane contract farming context. Through the model, five dimensions (tangibles, reliability, responsiveness, assurance and empathy) were tested to find gaps that exist among some smallholder farmers regarding perceived and expected quality in the CF services coordinated by farmers' associations. The results demonstrate that empathy was the most deficient dimension of contract farming services quality. Also, there were high deficiencies on quality control, price setting as well as weighing sugarcane consignments at the Mills' gates. Cross tabulation and chi-square test revealed that there was a significant relationship between satisfaction with the timing of payment for the sugarcane they sold and household size. It is recommended that empathy should be tackled first by the farmers' associations before other dimensions. Both farmers' associations and the buyer should be active initiators of cane supply agreements.*

**Key words:** Smallholder, contract farming, service quality, Kilombero Valley

**Paper type:** Research paper

**Type of Review:** Peer Review

### 1. INTRODUCTION

In spite of accelerated expansion in other sectors such as industry and services since the early 1990s as part of the liberalization process, agriculture remains the backbone of the Tanzanian economy. The sector employs more than 66.3% of Tanzania's labour and contributes an average of 30% to the Gross Domestic Product (GDP) (URT, 2018). Sugarcane farming is among the major cash crops in Tanzania and an important source of income and employment for sugarcane producers (Suleiman, 2018). Tanzania has four companies which commercially produce sugarcane: Kilombero Sugar Company (KSCL), Mtibwa Sugar Estates, Tanganyika Planting Company (TPC), and Kagera Sugar. All the companies were

privatised between 1998 and 2001. The government of Tanzania retained 25% stakes in two of them: KSCL, whose majority owner is the South African company Illovo Sugar; and TPC, whose majority owner is the Mauritian sugar group Alteo. Mtibwa Sugar Estates was acquired by the Tanzanian company Super Group, which also owns Kagera Sugar (Sulle *et al.*, 2014). The key reason to privatize the sugar industries was the inability of the government of Tanzania to expand the sector compared to the sugar demand in both domestic and international markets (Landesa, 2017; Ngirwa, 2010; Magongo, 2008). The sugar industry in Tanzania employs 30 000 people directly and accounts for about 75 000 seasonal employees in the outgrowers' schemes (Suleiman, 2018, *Bodi ya Sukari Tanzania*, 2018). For sugarcane, Kilombero Valley is the largest sugar-producing area in Tanzania. Sugarcane farming in the Valley combines estate with small scale outgrower production (Sulle *et al.*, 2014; URT, 2007). Sugarcane in Tanzania, like in other developing countries, is actively steered through contract farming (CF) (Oya, 2012; Prowse, 2012).

There is a growing recognition of importance of CF in many developing countries as a way to meet or increase production, quality, equity, and overcome supply and market failures (Glover and Kusterer, 1990; Singh, 2006; Oya, 2012; Prowse, 2012). CF and the formation of farmers' associations in developing countries have emerged to be the central part of a set proposal of the World Bank (WB) to promote commercially oriented smallholder farmers in these countries (WB, 2007; Magongo, 2008; Landesa, 2017). In the late 1980s, sugarcane farmers in Tanzania were advised by the government of Tanzania to start associations. The presence of sugarcane farmers' associations was envisaged that would enhance collective action and bargaining power for farmers. In view of that, in Kilombero Valley two organisations were established: the Kilombero Cane Growers Association (KCGA) and Ruhembe Outgrowers Association (ROA) while in Mtibwa, Mtibwa Outgrowers Association (MOA) was established. Since 1997/98 to date, these associations became the outgrowers' legitimate representatives. The associations have various functions: they act as spokespersons for the farmers, negotiate with the buyer for better contracts terms, source funds to extend loans to the farmers, provide education and training on improved cropping practices, and lobby for policy change to favour the sugarcane farmers (Ngirwa, 2010; Matango, 2006; Magongo, 2008).

CF of sugarcane and the existence of farmers' associations has high potential for making smallholder sugarcane farming competitive and a productive employment for all, including women and young people (URT, 2018; Landesa, 2017; Magongo, 2008). Literature highlighted an increasing debate on whether sugarcane smallholder farmers get quality services from contract farming relations (Landesa, 2017, Oya, 2012; Ngirwa, 2010; Chongela, 2008; Mshiu, 2007). A study by Amrouk *et al.* (2013) reports that sugarcane yields per hectare in the study area for the bottom quintile were 12 tons lower than the overall average (50 tons per ha). Basing on the yield evidence, it is questionable on the contractual services coordinated by the farmers' associations and the buyer since the yields in the study area were still lower than the Tanzania potential sugarcane yields of 120 tons/ha (Baarn, 2012) despite the contractual services being offered. This paper is written with the realization that contractual services of the associations and the buyer determine farmers' expectations in the sugarcane business. Service quality, as asserted by Asubonteng *et al.* (1996), measures the extent to which a service meets customers' needs or expectations and therefore assessing how farmers perceive the service quality will offer farmers' associations and the buyer ability to locate quality related problems and establish clear standards for service delivery (Osei *et al.*, 2012).

It has to be noted that theorists on CF offer different stances, for example, Rehber (2007) states that CF is a principal-agent game whereby a firm (the principal) and a grower (the agent) work jointly to produce a

crop, while Prowse (2012) views CF as ability to create, and sustain operations through the use of skills and experience of staff in an organisation. The first theorist brings an agendum of roles between two parties involved in the CF, and the latter brings us to an attention to the essential conditions for the staff involved in the CF. The two agenda are tested in this paper by examining the extent to which farmers are satisfied with the services received through sugarcane farmers' associations and through the buyer.

The paper uses SERVQUAL model to measure the contract farming services quality. The model was developed by Parasuraman *et al.* (1985, 1988). The model was chosen for this paper since it has extensively been used and tested across a range of public and private sectors to measure service quality (Zafiroopoulos and Vrana, 2008; Osei *et al.*, 2012; Rana *et al.*, 2013). The paper used the SERVQUAL model, adapted to the sugarcane contract farming context. It finds the gaps in terms of views that exist among some smallholder farmers regarding perceived and expected quality. One may ask: Why should service quality be measured? It is clearly stated in a work by Osei *et al.* (2012) that measurement allows for comparison before and after changes, for the location of quality related problems and for the establishment of clear standards for service delivery. Similarly, Edvardsen *et al.* (1994, cited by Osei *et al.* 2012) state that the basis of developing quality in service industries is analysis and measurement. Therefore, the SERVQUAL approach, which is used in this paper, is one of the effective methods for measuring service quality.

The SERVQUAL model consists of five dimensions or factors of service quality as suggested by Parasuraman *et al.* (1991). Primarily, the model was centred on 10 dimensions of service quality and later reduced to five dimensions. These dimensions are: (i) Tangibles: physical facilities, equipment and appearance of personnel; (ii) Reliability: ability to perform the promised service dependably and accurately; (iii) Responsiveness: willingness to help customers and provide prompt services; (iv) Assurance: knowledge and courtesy of employees and their ability to inspire trust and confidence and (v) Empathy (including access, communication, understanding the customer): caring and individualized attention that a firm provides to its customers. The specific objectives of this paper were to: (a) assess the extent to which farmers are satisfied with the services received through farmers' associations, (b) evaluate contract farming services provided to sugarcane outgrowers by the sugarcane buyer, and (c) determine associations between farmers' views on satisfaction with CF services and their household characteristics, particularly number of years a farmer was engaged in CF, age of farmers, household size, marital status and education of farmers.

## **2. METHODOLOGY**

### **2.1 Description of the Study Area**

The research was conducted in Kilombero Valley, which is located in two districts (Kilombero and Kilosa) in Morogoro Region. The valley was selected because it constitutes the largest sugar-producing area in Tanzania with the largest number of outgrowers (Landesa, 2017, Suleiman, 2018). The valley has about 7 000 sugarcane outgrowers with about 15 000 ha under cane production (Landesa, 2017, Suleiman, 2018). The research was confined to six wards (Kidatu, Sanje, Mkula, Ruhembe, Kidodi, and Ruaha) where six farmers' associations were involved.

### **2.2 Research Design, Sampling Procedures and Sample Size**

The study adopted a cross-sectional study design. Under this design, data on the variables of interest were collected more or less simultaneously, examined once, and the relationship between variables was determined (Bryman and Bell, 2011). The wards were purposively selected since they were within 40 kilometres' radius from the two sugar Mills. The second reason was that, in the wards, there were

farmers with farm sizes which ranged from 0.9 to 3.0 hectares (URT, 2013). A similar approach was used to select farmers' associations. This was done by the help of KSCL Outgrowers Manager who actually manages sugarcane outgrowers' supply records. Farmers' associations administrative secretaries facilitated to get farmers' register books.

Using the books, lists of sugarcane smallholder farmers were established (0.9 to 3.0 hectares). From each farmers' association list, a simple random sampling (SRS) technique was employed to select few smallholder farmers to represent others. Smallholder farmers' names were each written on an individual piece of paper, and the pieces were placed in a box (lottery technique) from which picking of names of farmers to be interviewed was done. The use of SRS helped to accomplish this task in a manner which was not biased. In total, therefore, 375 smallholder sugarcane contract farmers were randomly selected. The sample size was determined by employing Yamane's formula as detailed below:

$$n = \frac{N}{1 + N e^2}$$
$$= \frac{5985}{1 + 5985 (0.05)^2} = 375 \text{ (Yamane, 1967 cited by Israel, 2013)}$$

Where:

- n = the sample size
- N = the population size
- e = the level of precision

However, 300 (80%) of the 375 farmers were interviewed, due to difficulty in getting other potential respondents. To improve quality of the results, the study involved 14 key informants based on their positions. These were six administrative secretaries of six farmers' associations, six ward executive officers (WEOs), one member from the Sugar Board of Tanzania (SBT) and one KSCL) Outgrowers Manager.

### **2.3 Instruments and Data Collection**

Copies of a questionnaire and of a key informant interview guide were the instruments used for data collection. Both qualitative and quantitative data were collected. Before actual data collection, the research instruments were calibrated by conducting a pilot survey to check their validity. In this study, quantitative data were collected using a structured questionnaire in which both closed and open-ended questions were used. In view of assessing the extent to which farmers were satisfied with the services they received through farmers' associations, 16 statements of service quality in relation to the sugarcane contract farming were tested.

The origin of the statements was basically the five dimensions suggested by Parasuraman *et al.* (1991). To respond to the statements, the respondents had to choose one service quality scale option (1 = satisfactory, 2 = good and 3 = very good) for each statement to indicate their perceptions and expectations on sugarcane contract farming services. Literature indicates that the difference between perceptions and expectations is called a quality gap. If (Perceptions - Expectations) < 0, the quality is unacceptable; if the answer is 0, the quality is satisfactory; and if the answer > 0, the quality is acceptable (Parasuraman *et al.*, 1990, 1991). This statistical conclusion by Parasuraman *et al.* (1990, 1991) was used to generate empirical conclusion of this paper. Qualitative data were collected through face to face interviews with 14 key informants. The interviews focused on how the sugarcane CF services were provided in the study area,

the progress, barriers and their future views on the services. Detailed explanations and some evidence were provided to validate their explanations. The information was documented in relation to the specific objectives of this paper.

#### **2.4 Data Processing and Analysis**

Primary data were checked for completeness before being coded, entered in the computer and verified for analysis. Quantitative data were analysed using IBM Statistical Package for Social Sciences (SPSS) Statistics, and Microsoft Excel. The extent of farmers' satisfaction with the sugarcane CF services received through farmers' associations was determined by calculating the service quality using the following steps: (i) Using the tailored SERVQUAL questionnaire the score for each of the 16 expectation statements as well as each of the 16 perception statements were obtained from each respondent. (ii) The Gap Score = Perception – Expectation (Table 1). (iii) The average gap score for each dimension of service quality was obtained by assessing the gap scores for each of the statements that constituted the dimension and dividing the sum by the number of statements making up the dimension (Table 1). (iv) The calculated average for each of the five dimensions was summed up, and the result divided by five (total number of the SERVQUAL dimensions) to obtain the average SERVQUAL score, which represents the unweighted measure of service quality for the sugarcane CF farmers' associations in the study area. (v) Respondents were also asked to allocate 100 points among the five service quality dimensions. This gave an indication of the relative important weights of each of the five dimensions making up the SERVQUAL scale (Table 2). (vi) The weighted average SERVQUAL score for each of the five dimensions of service quality was calculated by multiplying the averages calculated in step three by the weighted scores calculated in step five (Table 3). Multiple responses was employed to analyse the satisfaction status of farmers on the services offered/coordinated by the farmers' associations and the sugarcane buyer.

### **3. RESULTS AND DISCUSSION**

#### **3.1 Service quality received by farmers through farmers' associations**

The findings in Table 1 reveal that empathy was the dimension with the highest gap score (-19.0), followed by assurance (-14.75) and responsiveness with the least gap score (-8.0). This means that empathy was the most deficient dimension and which farmers were mostly dissatisfied with, as a measure of service quality received by farmers through farmers' associations.

For triangulation purpose and identification of the relative important weights placed by farmers to each of the five dimensions, the respondents were asked to allocate points summing up to 100 among the five dimensions. The findings in Table 2 indicate that empathy was deemed very important by the respondents; it had the highest weight (24%), followed by assurance (23%), then tangibles (21%), reliability (17%) and responsiveness that was given the least weight (15%).

**Table 2: Percentage point allocation for dimensions (n=300)**

<b>Dimension</b>	<b>Average percentage points (Weight)</b>
Tangibles	21
Reliability	17
Responsiveness	15
Assurance	23
Empathy	24
<b>Total</b>	<b>100</b>

Since the weighted SERVQUAL score for the various dimensions explains the degree and magnitude of satisfaction or dissatisfaction as compared to the gap score, therefore, it was calculated by multiplying the average scores of each dimension (Last column in Table 1) by their weights (in Table 2). With the weighted SERVQUAL score, empathy (-4.56) again emerged the most deficient dimension followed by assurance (-3.39), then tangibles (-2.17), reliability (-2.00) and responsiveness being the least deficient (-1.20). The values for the SERVQUAL weighted score show how much each dimension was deficient in contributing to the satisfaction of farmers.

**Table 3: Calculation of gap score and weighted average SERVQUAL score (n=300)**

<b>Dimension</b>	<b>Average score</b>	<b>Weight</b>	<b>Weighted score</b>
Tangibles	-10.33	0.21	-2.17
Reliability	-11.75	0.17	-2.00
Responsiveness	-8.00	0.15	-1.20
Assurance	-14.75	0.23	-3.39
Empathy	-19.00	0.24	-4.56
<b>Weighted SERVQUAL Score</b>			<b>-13.32</b>

The overall weighted SERVQUAL score was -13.32 (unacceptable quality). This means that farmers who received services from sugarcane farmers' associations were highly dissatisfied with the services received. The findings in Tables 1 and 3 both indicate that empathy was the most deficient dimension.

The findings imply that the contractual services offered/coordinated by farmers' associations generally were of unacceptable quality. Likewise, a study by Osei *et al.* (2012) which assessed the extent to which farmers were satisfied with the agrochemical inputs received in Ghana had similar observation. When quality of services is unacceptable, it means, the standards of service delivery in the study area requires serious improvement so that CF services to work as envisioned.

Furthermore, the findings in Table 4 indicate that 65.5% of farmers were satisfied a little with the contractual services offered/coordinated by farmers' associations, followed by 33.3% who were not satisfied at all with the services and only 1.2% who were satisfied very much with the service. The dissatisfaction was high on price negotiation (49.3% of the respondents) capacity followed by extension services (38.7% of the respondents) and transport arrangements being the third item with 32.7% of the respondents. This implies that there was deficiency in the coordination of the CF services. The finding agrees with the weighted SERVQUAL scores in Tables 1 and 3 which indicate dissatisfaction (unacceptable quality) on the service quality coordinated by farmers' associations. The findings in Table 4 are also consistent with evidence reported by Amrouk *et al.* (2013). In their study, sugarcane farmers in Kilombero and Mtibwa were reported being dissatisfied with the cane price; availability of farm inputs; infrastructure especially rural roads used for transporting cane to the mills and the extension services.

**Table 4: Status of farmers' satisfaction on the CF services offered/coordinated by farmers' organization (n=300)**

Type of Service	Levels of Satisfaction		
	Satisfied very much (%)	Satisfied a little (%)	Not Satisfied at all (%)
Price negotiation	1.0	49.7	49.3
Credit facilitation	0.7	72.3	27.0
Farm inputs facilitation	0.7	73.3	26.0
Extension service	1.0	60.3	38.7
Harvesting arrangements (harvesting plan and implementation)	2.0	65.3	32.7
Sugarcane transportation arrangements (engagement of contractors and follow up)	1.3	67.7	31.0
Payments follow up	2.0	69.7	28.3
Average percentage	1.2	65.5	33.3

The discussion with the six ward executive officers (WEOs) in the study area on farmers' associations' services indicated that all were not satisfied at all with the services provided by the farmers' associations. They pointed out some limiting factors toward the service quality expected being the fact that some leaders in the farmers' associations own companies (using names of other people) for cane cutting, cane loading and transportation which easily get contracts/tenders in the associations to offer services. The reported practices severely impinged on the performance of the farmers' associations' service provision. Furthermore, they commented that inadequate education among democratically elected leaders and employees in the associations had made them unable to assess critically contracts they entered with contractors on behalf of farmers. However, the Sugar Board of Tanzania (SBT) representative claimed to have trained leaders on contract negotiations, but no records were found in the farmers' associations. It was also reported by the WEOs that inadequate farm inputs, extension education and poor harvesting arrangements had resulted to the introduction of new cane growers' associations in the study area. Previously, Kilombero Valley had two associations (RCGA and KCGA) but up to February 2014 there were eight (8) associations.

Responding to the question on how CF services were coordinated in the study, the six farmers' associations' administrative secretaries and the KSCL Outgrowers Manager reported that farmers' associations had full control of the scrutiny and supervision of contractors. Contractors were reported to offer services from cutting, loading and transportation of sugarcane to the mills while procurement and supply of inputs like fertilisers and tillage operations were made by individual farmers in the study area. However, they agreed that farmers' associations still had the obligation to facilitate farmers to get farm inputs and reliable tillage operations. The limiting factor pointed out by the administrators was insufficient funds to buy in bulk the farm inputs. It was expected that farmers' associations in the study area would have offered maximum/acceptable services to their members than the situation indicated in Table 4 and 5.

The sugarcane CF services' arrangement in the study area was observed to be very different from that of neighbouring countries like in Kenya where sugarcane companies have absolute control of the procurement and supply of key inputs to farmers like fertilisers, tillage operations, harvesting and transportation costs. The sugarcane CF services in Kenya are acknowledged as being reliable (Kweyu,

2013). However, Kenya sugarcane farmers face challenges of costs being higher than the normal retail prices on the market when prices are determined by sugarcane companies (Waswa *et al.*, 2012).

### 3.2 Farmers' satisfaction with the CF services offered by the sugarcane buyer

The respondents in the study area were asked on the extent of satisfaction with the CF services coordinated by the sugarcane buyer. The results are presented in Table 5 and indicate that 59.7% of the respondents interviewed were not satisfied at all with the services. About two-fifths (40.2%) of the farmers were satisfied a little with the contractual services and only 0.1% were satisfied very much with the services. Among the services with which the farmers were not satisfied at all were quality control which was ranked high (80.3% of the respondents), followed by price setting (78% of the respondents) and the third was weighing (76.3% of the respondents). This implies that there was more inefficiency on the stated services. However, KSCL Outgrowers Manager views on the quality control were different; he pointed out that the buyer (KSCL) ensured all canes supplied by association growers (registered farmers) to the two mills (K1 and K2) were varieties of cane approved by the SBT (but monitored the farmers' associations); cane which was in a good, clean and fresh condition substantially free from trash, tops, dirt and roots collectively, and would in all respects be suitable and ready for milling and processing.

The cane supply agreement (2010) between KSCL and KCGA and RCGA asserts the same. Accordingly, it adds that if the time period between time of burning the cane farm and delivery of canes to the mills exceeds or will exceed five days (120 hours), as monitored by the Operations Board (committee comprising representatives of the company and the growers), the cane consignment will be rejected. An interesting observation on the quality control is that the association growers did not meet the sugarcane qualities stated under the sugarcane supply agreement of 2010. The findings indicated that 40.7% of the farmers had experience of their cane being rejected by the mills in the previous two harvesting seasons (2012/13 and 2013/14) and 59.3% had no experience. This denotes that there was significant percentage of rejection cases in the study area.

**Table 5: Status of farmers' satisfaction on the CF services offered/coordinated by the sugarcane buyer in Kilombero Valley (n=300)**

Type of Service	Levels of Satisfaction		
	Satisfied very much (%)	Satisfied a little (%)	Not Satisfied at all (%)
Price setting	0	22.0	78.0
Quality control	0	19.7	80.3
Weighing at the Mills gates	0.7	23.0	76.3
Effecting payment timely	0	42.3	57.7
Communication in case of payment delay	0	83.0	17.0
Social services (e.g. health care, education)	0	55.3	44.7
Agricultural training to farmers	0	32.0	68.0
Management of farmers' sales record	0	35.7	64.3
Leadership accountability	0	48.7	51.3



It is not surprising to find farmers being not satisfied at all (80.3%) with the quality control while the coordination of sugarcane CF services by farmers' association was satisfactory (farmers satisfied a little) as ranked by farmers (Table 4). Assessing the findings critically, one can see that farmers failed to understand that the buyer was working on the basis set in the cane supply agreement, and the decisions made against their canes were basically emanating from the agreement. Buyer's quality controls were essentially done at the mills' gates and not at the farm level, although the cane supply agreement allowed the buyer to make follow up even before harvest. The problem was noted to be the pre-quality controls.

The potential establishment of sugarcane contract farming arrangements in the late 1990s was farmer discontent over prices. Even after about 24 years of CF in practice in the study area, farmers, to a large extent, were still dissatisfied with the price setting (Table 5). A similar situation was observed in Mtibwa as per PADEP (2006) report. The report indicates that the buyer still anticipated to be the initiator of the contract documents (similar practice noted in Kilombero) due of her high level of understanding of the market requirements. This resulted into a mistrust relationship for years between farmers' associations and the sugar miller. The association growers felt that their canes were not graded honestly, that the weighbridge is tampered with, and that the millers often delay payments. In Kilombero Valley, like in Mtibwa, cane price varies with the sucrose content of the cane. The sugarcane is delivered to the millers soon after harvesting, and growers are paid based on the quality of the cane as determined by the Mills' laboratories (PADEP, 2006; Cane Supply Agreement, 2010). The discussion with farmers' associations' administrative secretaries revealed that, the basis for farmers' dissatisfaction was the determination of sugarcane quality, which is solely monopolized by the Mills' laboratories' technicians.

Farmers' being dissatisfied in Kilombero Valley leaves a big question; will smallholder farmers' get benefits from sugarcane? Literature has indicated that sugarcane production in Kilombero Valley has had benefits for farming households. However, unsustainable expansion and governance issues in the outgrowers' scheme have created new risks which were essentially aggravated by the importation of foreign sugar into the Tanzania. For the sugar industry to provide its maximum benefits to the economy and to the household, a policy, legal and institutional framework are needed to provide greater efficiency, accountability and transparency, as well as greater security for all participating stakeholders (Sulle *et al.*, 2014).

### **3.3 Theoretical Results on Agency Theory**

In this paper, among other things, it was intended to test the contractual relations between farmers' associations and the sugarcane buyer, examine if the relationship favoured both parties or if it was skewed to one between the two parties. The idea tested originated from the theoretical claim that contract farming is a principal-agent game whereby a firm (the principal) and a grower (the agent) work jointly to produce a crop. In an agency relationship, the agent (e.g., the farmer/farmers' association leaders) is expected to behave in accordance with the goals of the principals (e.g. lenders, processors) (Rehber, 2007). In order to determine that relationship existed, farmers were asked on how they perceived the relationship between their association and the sugarcane buyer; the findings indicated that 85.8% of the farmers interviewed responded that it was bad; only 14.2% indicated the relationship to be good. They further indicated that the relationship was skewed to the advantage of the sugarcane buyer only (90%); five percent (5%) agreed that the relationship favoured both parties, and five percent indicated that the relationship favoured the advantage of farmers only. On the other hand, the results in Table 4 indicate that leaders from farmers associations failed to negotiate strongly on sugarcane prices (49.3%) with the sugarcane buyer, implying that farmers' representation had less power to bargain for their sugarcane related matters.

The opinion collected from one female respondent at Ruhembe village on the relationship between farmers and the sugarcane buyer was that farmers were not aware of the contents of the sugarcane supply agreement which farmers associations enter with the buyer; the farmers said:

“...I know our association enters into contract with the sugarcane processor, but I do not know the details of the contract/agreement either from my farmers' association or from the buyer. However, I am obliged to follow.....this is a big problem to me because we sometimes face rejection of our sugarcane harvests...” (Interview, Ruhembe, 22 February 2014).

Basing on the findings, the theoretical claim stated by Rehber (2007) that in an agency relationship the agent is expected to behave in accordance with the goals of the principal agrees with the empirical findings of this paper. Farmers in the study area, regardless of their ignorance of the sugarcane supply contract/agreement, were forced to comply with bonds entered by their leaders. These results and those shown in Tables 1, 3, 4 and 5 indicate that the contractual services offered in the study area did not meet their expectations. Therefore, it was logical for them to perceive the relationship between farmers/farmers' associations to be bad and skewed for the advantage of the buyer.

### **3.4 Association between farmers' views on satisfaction with CF services and their household characteristics**

The paper aimed to determine associations between farmers' views on satisfaction with CF services and their household characteristics, particularly number of years a farmer was engaged in CF, age of farmers, household size, marital status and education of farmers. The results in Table 6 show that there was a significant relationship between household size and farmers' views on the timing of payment for sugarcane they sold (chi square = 6.232,  $p \leq 0.05$ ). About a half (47.3%) of the farmers belonging to medium households were not satisfied at all with the timing of payment for sugar cane they sold. However, 45.7% of the households belonging to medium households were satisfied a little with the timing of payment for sugar cane they sold. The findings imply that there was more dissatisfaction from households with three up to seven members in the study area. Cross-tabulation and chi-square test were also used to determine the association between satisfaction with the sugarcane harvesting arrangement and household size. The results show that there was a significant relationship between household size and farmers' views on the sugarcane arrangement (chi square = 13.127,  $p \leq 0.05$ ). About one third (32%) of the farmers belonging to medium households were satisfied a little with the sugarcane harvesting arrangement made by farmers' associations. However, 14% of the households belonging to medium households were not satisfied at all with the sugarcane harvesting arrangements. The findings imply that there was more dissatisfaction from households with three up to seven members in the study area. It has to be noted that the average household size in Morogoro region is 4.3 (URT, 2014); therefore, it is not surprisingly to find an overriding number with three up to seven household sizes in the study area. On the other hand, households with three and more members were expected to be impacted negatively by the delay of payment and harvesting arrangements because they had dependants who required more financial attention from the households' heads.

The results, as detailed in Table 6, show that there was a significant relationship between age of farmers and farmers' views on the leadership accountability shown by the sugarcane buyer (chi square = 7.965,  $p \leq 0.05$ ). About one-fifth (20.1%) of the farmers belonging to 36 – 50 age group were not satisfied at all with the buyer's leadership accountability. However, 23.4% of the farmers belonging to the 36 – 50 years group were satisfied a little with the buyer's leadership accountability. The findings imply that there was more dissatisfaction from farmers aged between 36 – 50 years (43.5%) in the study area. The probable reason

for dissatisfaction from farmers aged between 36 – 50 years could be the fact that this was the productive age group (URT, 2014), which is expected to experience leadership accountability from the sugarcane buyer to further their investment plans. The participation of farmers aged between 36 and 50 years in airing out their views on sugarcane CF services was positively noted also in a study on sugarcane outgrowers undertaken at Numan local government area Adamawa State in Nigeria by Girei and Giroh (2012).

**Table 6: Farmers' views on satisfaction with CF services and their household characteristics (n=300)**

Household characteristics	Type of service	Not satisfied at all (%)	Satisfied a little (%)	Pearson Chi-Square	P-Value
Small household (1 - 2) (%)	Satisfaction with the timing of payment for sugar cane sold by farmers	14.5	25.2	6.232	0.044
Medium household (3 - 4) (%)		47.3	45.7		
Large household (5 – 7) (%)		38.2	29.1		
Small household (1 - 2) (%)	Satisfaction with the sugarcane harvesting arrangement coordinated by farmers' associations	4.0	15.0	13.127	0.011
Medium household (3 - 4) (%)		14.0	32.0		
Large household (5 – 7) (%)		14.7	18.3		
21 – 35 age group	Satisfaction with the buyer's leadership accountability	17.1	15.7	7.965	0.047
36 – 50 age group		20.1	23.4		
51 – 65 age group		9.4	8.7		
66 – 81 age group		4.7	1.0		

It has to be noted that cross-tabulation and chi-square test results indicated that education, number of years a farmer was engaged in CF, marital status and education of farmers had no significant relationship with the satisfaction views of farmers on various services coordinated by the sugarcane buyers and that offered by the farmers' associations.

#### 4. CONCLUSIONS AND RECOMMENDATIONS

This paper has provided empirical evidence showing that farmers who received services from sugarcane farmers' associations in the Kilombero Valley were highly dissatisfied (unacceptable quality) with the CF services received. Basing on the finding, it is concluded that empathy was the most deficient dimension in the study area. Therefore, it is recommended that empathy should be tackled first by the farmers' associations and the other dimensions should follow suit. In tackling the dimensions, farmers' associations should employ extension officers (to guide association growers), agri-business experts (to manage associations' business) and legal officers (responsible for associations' legal/contract matters). This will enhance associations' services quality. Training to associations' staff and leaders on customer care, and leadership skills should regularly be provided by the farmers' association in collaboration with the National Sugar Institute (NSI).

Given the evidence in the findings, it is concluded that there were many deficiencies in quality control, price setting as well as weighing sugarcane consignments at the Mills' gate. Therefore, it is recommended that both farmers' associations and the buyer should be active initiators of cane supply agreement (even sub-contracting law firms to initiate). In collaboration with NSI, farmers' associations should educate and ensure farmers' access the cane supply agreement. This will create a smooth business environment between farmers and the buyer. The government of Tanzania, through the SBT, should ensure the presence of essential services to support sugarcane farmers and buyers (e.g. restrict illegal importation of foreign sugar). The SBT should guide associations' formation, structure and legislation or advise associations adopt *co-operative + CF model*. Smallholder farmers should be facilitated by the SBT to build up their associations suitable to their business needs. In addition, it is concluded that service delivery inefficiencies experienced by smallholder farmers from the contractors caused more dissatisfaction among farmers. It is therefore recommended that ministries responsible for agriculture and trade should ensure greater security to all stakeholders participating in the sugar industry (facilitators, farmers, buyers/Millers) in terms of restricting illegal importation of sugar and price setting.

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**Table 1: Calculation of gap score and unweighted average SERVQUAL score (n=300)**

Dimension	Statement	Perceptions score	Expectations score	Quality gap (P-E)	Mean for dimension
<b>Tangibles</b>	Adequacy of farming inputs	493	520	-27.0	-10.33
	Adequacy of farmers' association service equipment	515	531	-16.0	
	Communication service from farmers' association office(s)	616	604	12.0	
<b>Reliability</b>	Providing services to smallholder farmers as per existing constitution	530	551	-21.0	-11.75
	Dependability on service provision	535	552	-17.0	
	Providing contractual services at the agreed time	525	537	-12.0	
	Keeping farmers informed	596	593	3.0	
<b>Responsiveness</b>	Readiness of farmers' association personnel to promptly provide contractual services	558	567	-9.0	-8.00
	Willingness of farmers' association personnel to assist smallholder farmers	569	575	-6.0	
	Readiness of farmers' organization personnel to respond to smallholder farmers' needs	559	568	-9.0	
<b>Assurance</b>	Farmers' association leaders' confidence	544	553	-9.0	-14.75
	Making farmers feel safe during contractual service delivery	532	547	-15.0	
	Consistency of Farmers' association leaders on contractual services delivery	504	515	-11.0	
	Farmers association staff's knowledge in providing contractual services	542	566	-24.0	
<b>Empathy</b>	Farmers association staff's customer care to farmers	596	604	-8.0	-19.00
	Farmers association staff's response to the needs of smallholder farmers	584	614	-30.0	
<b>Unweighted average SERVQUAL Score</b>					<b>-12.77</b>