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## The Extent to Which Sugar Companies Use Internet Services in the Promotion of Sugar Sales

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### **Abstract:**

*This Study sought to establish the extent to which sugar companies use internet services in the promotion of sugar sales. The specific companies covered in the study were Mumias, Nzoia and West Kenya Sugar companies. The study population was the employees of the corporations within the respective marketing departments. The accessible population was the managers of the marketing departments. A randomly selected sample of 120 respondents were used on the basis of subgroups of each specific sugar company with equal representation. Multi-stage sampling was applied in the study because it is the best technique for studies dealing with subgroups like this one. Cross-sectional survey was purposively chosen because it facilitates collection of data from a large population at one point in time. It is also appropriate for studies dealing with large geographical areas and subgroups of respondents like this one. Data was collected using questionnaires and interview schedules after piloting the instruments in the Sony Sugar Company. Simple random sampling was applied to select individual respondents during data collection. The data was coded, edited and analyzed by both descriptive and inferential statistics. A chi square test was used to establish differences in responses. The results were presented using tables, charts and graphs. The study findings revealed that internet was being used by sugar companies in the promotion of sugar sales and this had a positive influence on the volume and speed of sugar sales.*

**Keywords:** Internet, sugar sales

### **1. Introduction**

In the world today the gap between supply and demand of sugar makes sugar marketing an essential sub-sector of agriculture (Kenya Sugar Board, 2002). This accounts for the development of several global and regionalized marketing initiatives to manage agricultural marketing and more particularly sugar marketing (Stienen, Bruimas & Neuman, 2007). These include the Common Market for Eastern and Southern Africa (COMESA) and the Common Market Protocol initiated recently to serve the East African Region (Bosco, 2010). Apart from these, every government has set up mechanisms like ministries in-charge of sugar marketing. In Kenya, the Ministry of Agriculture through the Kenya Sugar Board (KSB) is the mandated manager of sugar marketing (KSB, 2000).

The Kenya National Trading Corporation (KNTC) used to be in charge of sugar sales in Kenya. However, from the early 1990s, the sugar market underwent liberalization and the authority to control sugar sale transactions shifted to the Kenya Sugar Board (KSB, 2003). Liberalization also introduced a high level of competition in sugar marketing by giving companies the freedom to sell sugar through channels of their choice. As a result, they have adopted a number of approaches that include different agents, retailers and even individuals. According to KSB (2002), there are now more than 5,000 private wholesalers who buy sugar directly from the companies.

According to Darch *et al*, 2002, a modern web knowledge system, fundamental understanding of all the target micro and macro-customers is the heart of successful marketing initiatives. This is attainable if the marketers apply appropriate market information systems (Www.caricom.org. Projects, 2010). This defines the entry and the role of information and communication technologies (ICTs) in sugar marketing initiatives.

The role of information and technology (ICTs) in agricultural marketing is increasingly gaining recognition across the world and was officially endorsed at the World Summit on the Information Society (WSIS) 2003-2005. This includes the use of computers, internet, geographical information systems (GIS), mobile phones, as well as traditional media like postal box, fixed telephone, fax machines, radio and televisions (Adams, Nelson & Todd, 1992).

Although it is a relatively new phenomenon, the evidence of the influence of ICTs to agricultural marketing is increasingly available (Broadbent, Weil and Char 1999). According to Grover (1986), there is no doubt about the potential of ICTs as they have a variety of

strategies for development of information systems. These include recent developments in electronics, telecommunication, multimedia and internet technologies. Jackson, chow & Leitch (1997), established that awareness of up-to-date market information on prices of commodities, inputs and consumer trends can improve marketing by having a dramatic impact on the negotiation position of agricultural marketers.

According to Kim & Mauborgne, (1997), introduction of new ICT linked financial transaction products into marketing influences achievement of excellence in marketing. This explains the recent introduction of new financial transaction products by the sugar companies.

## 2. Materials and Methods

The study was undertaken among the sugar companies in the western province of the republic of Kenya (Figure 1). These were Mumias Sugar Company limited, and West Kenya Sugar Company limited found in Kakamega County. Mumias Sugar Company limited is located within Mumias district along the Kakamega - Bungoma road. It is 38km west of Kakamega town. West Kenya Sugar Company limited operates within Kakamega south district. It is 2km from the junction along Kakamega –Webuye road. It is situated 15km from Kakamega town. The companies were selected due to the diversity in ownership, Mumias Sugar Company limited is a public company listed on the Nairobi stock exchange while West Kenya Sugar Company limited is a private company. Kakamega County is a town lying about 30km north of equator, less than 100km north of Kisumu. It lies between longitudes  $34^{\circ} 32''$  and  $35^{\circ} 57' 30''$  east of the prime meridian and latitudes  $0^{\circ} 07' 30''$  and  $0^{\circ} 15''$  north of the equator (KCDDP, 2008).

It receives a very high amount of annual precipitation and contains Kakamega forest, relic of tropical forest that stretched west through Uganda in the past. It is an agricultural area with 62% of the population involved in agricultural activities. Food crops grown include maize, beans, millet etc while cash crops are tobacco, coffee, sugar cane and cotton (MoA, 2011).

According to the 2009 census, Kakamega County has a total of 1,660,651 people (KNBS, 2010). Mumias Sugar Company is located 3 kilometres from Mumias town along Mumias Bungoma road while West Kenya Sugar Company is 1½ km from Kambiri junction along Kakamega-Kaburengu –Webuye road.

Nzoia Sugar Company limited is found in Bungoma County of Western Province in Kenya. The capital of the County is Bungoma town. It is located on latitude  $0^{\circ} 38' N$  and  $0^{\circ} 50' N$  and longitudes  $34^{\circ} 25' E$  and  $35^{\circ} 12' E$  with an altitude of 2000metres. Bungoma County is mainly agricultural, centering on the sugar cane and maize industries. The county has fertile volcanic soils as it is just on the slopes of Mt. Elgon and experiences high rainfall throughout the year, (1800-3600mm) good for agriculture. The area is a home of several rivers which are used for small scale irrigation (MoA, 2011).

Other crops that are grown include; vegetables (kales, cabbages, tomatoes, onions and indigenous vegetables) sunflower etc. The county has an improved transport network system with tarmac roads, murrum roads and railway transport that links up the major factories (KNBS, 2009). Nzoia Sugar Company limited is located 5km from Bukembe junction along Webuye - Bungoma road.

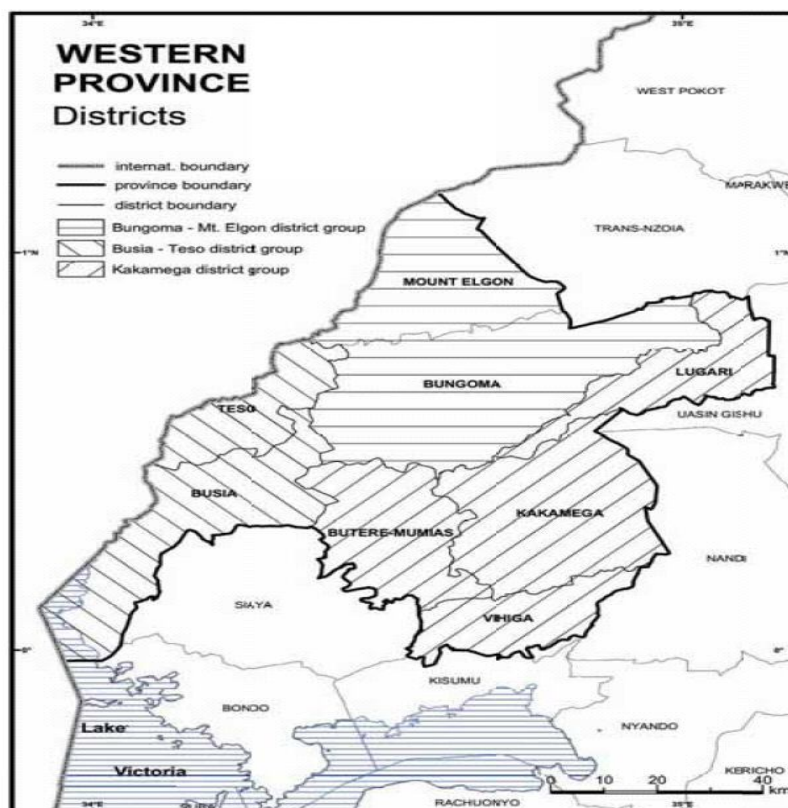


Figure 1: Map of Western Province Showing Bungoma and Kakamega County  
Source: Kenya National Bureau of Statistics (2009)

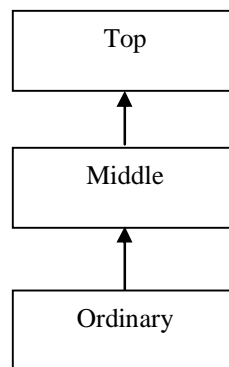
The study population comprised the sugar companies in western Kenya, this population was divided into target population upon whom the findings of the study were generalized and the accessible population from whom, a sample of respondents was selected. The target population was the sugar companies in Western Kenya. The accessible population consisted of employees within Mumias, Nzoia and West Kenya sugar companies. The employees within the marketing department of these companies formed the sample frame from which the study sample was obtained.

The design for the study was correlation research design which was adopted to establish the degree of relationship between two or more variables (Orodho, 2003). The study started with a pre-test carried out at Chemelil Sugar Company. The study sought to explain the influence of ICT on sugar marketing by the three sugar companies mentioned above. The dependent variable was sugar marketing while independent variables were the application of various ICT tools which include; Mobile phone, Television, radio, internet among others. Both qualitative and quantitative approaches were applied for systematic data gathering. According to Kaino (1995), the use of complementary methods reveals discrepancies which a single approach can not explain. Deductions were made from the data that was collected basing on the theory that ICT's were expected to influence sugar marketing. This attempted to verify the theories firmly held in mind.

In the study, the samples of respondents were a combination of personnel from the marketing departments of Mumias, Nzoia and West Kenya Sugar Companies located in western Kenya. According to Borg *et al*, (2003), studies involving sub-groups of respondents, the minimum recommended size for each sub-group is 15 respondents. This means that engagement of bigger numbers of respondents is expected to yield superior or better findings.

On this basis, every one of the three sugar companies was treated as a sub- stratum in the study. Mumias and Nzoia sugar companies had 45 respondents each while West Kenya had 30 respondents. On the basis of the three sugar companies a total sample size of 120 respondents were used. West Kenya Company is a private entity and is by scale the smallest company.

The study targeted marketing departments of Mumias, Nzoia and West Kenya Sugar companies. On this basis therefore each sugar company was treated as a sub-group or strata. A stratified sampling procedure was applied in order to treat the marketing department of each company as strata. Stratified sampling enhances representativeness in studies like this one that involves sub-groups of respondents (Fraenkel *et al*, 2002). The stratified sampling procedure equally applied to the employees within each of the following departments who were categorized as top, middle and lower level managers to ensure fair coverage of all employees within the marketing departments. That is;



selection of the population within the strata was by simple random sampling. Simple random sampling gives equal opportunities to respondents (Kathuri *et al*, 1990).

The intension of the research, goals and expected outcome were stated clearly to guard against rising wrong expectations to the respondents. To generate the data required by the study objectives, both primary and secondary data gathering procedures were used.

The secondary data collection was completed. The data was obtained from journals, annual reports, books and workshop proceeding reports. Similarly, the internet was a vital resource in accessing other relevant online publications. Other secondary sources of data included reports from key sectors i.e. the Ministry of Agriculture, Kenya Sugar Board.

Collection of data was preceded by training 2 research assistants so that they could fully understand the context of the study and underlying issues. This involved data obtained directly from the companies through respondents. Pre-tested, closed ended questionnaires were used to collect data from the employees of the sugar companies. The questionnaires were easier to administer because each question item is followed by an alternative answer or choices or choices for the respondent to choose from. While according to Kathuri and Pals (1993), they are appropriate for data collection, since the multiple choices make it possible for the researcher to regulate or control the range and depth of information to be provided by the respondents. Mugenda and Mugenda (2002) further recommended use of closed-ended questionnaires because they are economical in terms of time and monetary expenses. Borg *et al*, (2003) recommended the tool because it is always in a form that is easily analyzable due to the presence of multiple choices. They consisted items on ICTs tools and services (internet, mobile phones, radio and financial transaction production) frequency of use and effectiveness of the application of the ICTs.

A research instrument is reliable if it measures what it purports to measure consistently. According to Mugenda and Mugenda (1999), reliability of an instrument is a measure of the extent to which a research instrument yields consistent results or data after repeated trials in the study. The consistency of questionnaire to yield reliable data was established through a pre-testing process in Chemelil

Sugar Company located in Nyanza region. In line with the recommendations a random sample of 5 top level managers, 15 middle level managers and 15 lower managers were used during the pre-testing process. Reliability tests were carried out using the split half method. The instruments were found to be reliable and adopted for.

The Validity of an instrument is a measure of the extent to which the instrument measures what it is meant or expected to measure (Mugenda and Mugenda, 2002). A draft questionnaire was submitted to the experts in the department of sugar technology of Masinde Muliro University of Science and Technology who reviewed the contents for validity. They assessed and standardized each question item in relation to each objective to ensure relevancy and accuracy. Useful comments were incorporated to improve the effectiveness of the questionnaire

After data collection the items in the questionnaires were coded and the primary data entered into the computer for analysis according to the specific objectives of the study. Using the SPSS computer package, the data obtained was processed and analyzed by both descriptive and inferential statistics. The data was presented using tables, charts and graphs where appropriate. The chi-square was used to analyze the use of ICTs in sugar marketing.

Spearman's Rank order correlation was calculated between variables to establish similarities or differences between various rankings. The correlation was obtained using a formula:

$$r = 1 - \frac{6 \sum D^2}{N \sqrt{N^2 - 1}}$$

The standard error of the correlation was obtained using the formula:

$$S.E._r = \frac{1-r^2}{\sqrt{N}}$$

The correlation coefficient computed between variables was interpreted by comparing its magnitude with its probable error. The probable error of the coefficient of the correlation was obtained using a formula:

$$P.E._r = 0.6745 \frac{1-r^2}{\sqrt{N}}$$

Where:

P.E.<sub>r</sub> = Probable Error

r = Coefficient of correlation, and

N = the number of pairs or observations used in derivations of r.

D = Differences between ranks

When  $r < P.E._r$  there is no evidence of correlation, meaning the value of r is not significant ( $P > 0.05$ ). On the other hand, when the value of  $r > 6 P.E._r$  the coefficient of correlation is practically certain ( $P < 0.05$ ) (Gupta, 2008)

### 3. Results and Discussions

The study sought to determine the extent to which internet influence sugar sales. The respondents were assessed on the following;

#### 3.1. Distribution of Respondents by Company

The respondents from the three sugar companies were distributed as shown in Figure 2.

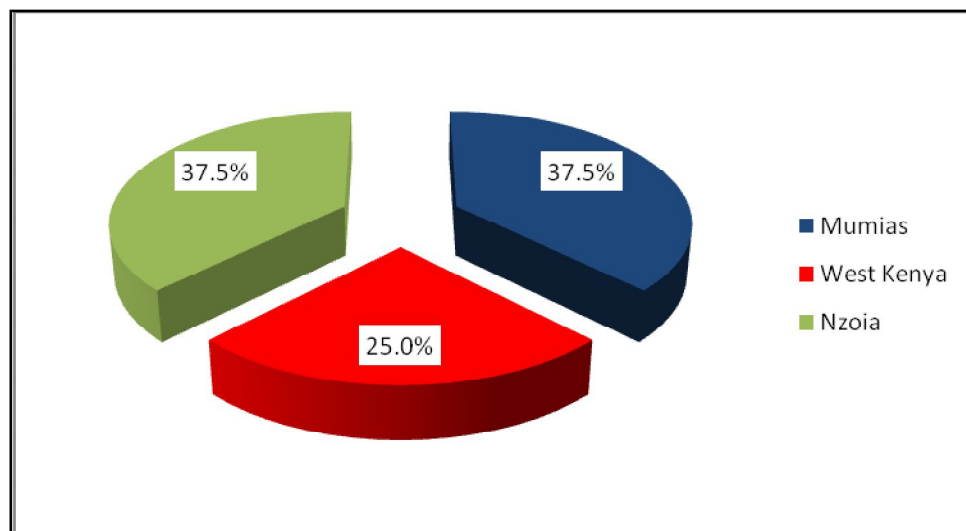


Figure 2: Distribution of respondents by company

A Chi Square test conducted on the respondents' distribution amongst the three companies indicated that there were no statistically significant ( $P > 0.05$ ) variation in the distribution of respondents among the three sugar companies ( $\chi^2_{2,0.05} = 3.750$ ). Figure 2 shows that 37.5% of the respondents were from Mumias Sugar Company, 37.5% were from Nzoia Sugar Company and 25.0% from

West Kenya Sugar Company, Mumias Sugar Company and Nzoia Sugar Companies have a higher proportion of respondents because they are large and have a high number of staff as compared to West Kenya which is smaller hence fewer staff.

### 3.2. Position of Respondents in the Marketing Department

The study sought to find out the position of the respondents in the marketing department. This was to help determine the distribution of respondent' positions across the three sampled sugar companies. Their responses are shown in Figure 3.

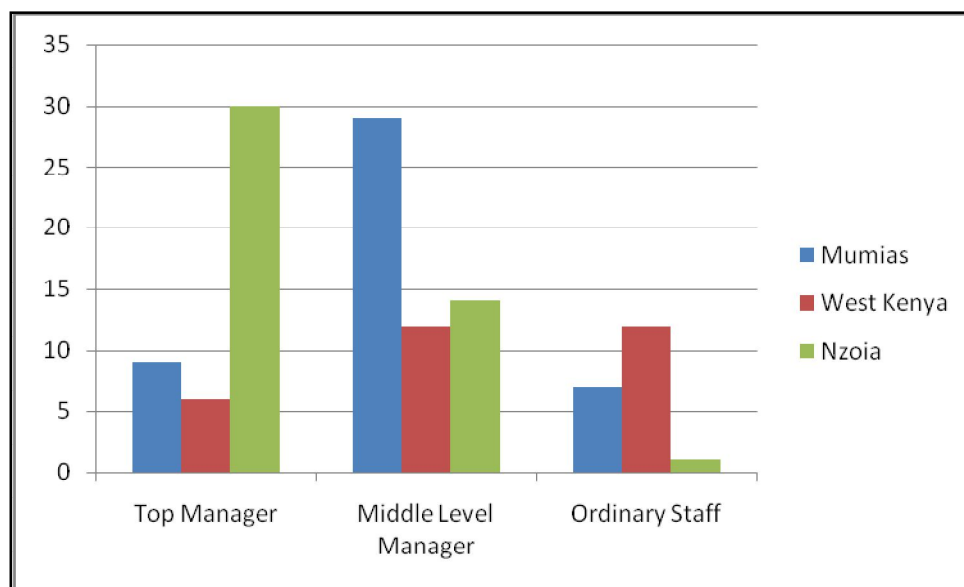


Figure 3: Respondents' position in the marketing departments of Mumias, West Kenya and Nzoia Sugar companies

A Chi Square test conducted on the members' distribution of age showed that there was a statistically significant ( $P < 0.05$ ) variation in the distribution of respondents by position ( $\chi^2_{3,0.05} = 8.550$ ).

Figure 3 shows that among respondents in Mumias Sugar Company, 22.2% were top managers, 51.1% were middle level managers and 26.7% were ordinary staff. From West Kenya Sugar Company, 20.0% were top managers, 40% were middle level managers while 31% were ordinary staff. In Nzoia sugar, 66.7% were top managers, 31.1% were middle level managers while 2.2% were ordinary staff.

Extend to which sugar companies use internet services in the promotion of sugar sales

This section focuses on describing the extent to which sugar companies use internet services in the promotion of sugar sales.

### 3.3. Regularity of Internet Use in Sugar Sale Transactions

The study sought to find out how often companies use internet services in sugar sales transactions Respondents were therefore asked to indicate how often they used internet services in sugar sales transactions. The results gathered were indicated in Table 4.8.

Regularity	Frequency	%
Very often	44	36.7
Often	63	52.5
Rare	6	5.0
Very Rare	7	5.8
Total	120	100.0

Table 1: Regularity of internet use in sugar sale transactions by marketing departments of Mumias, West Kenya and Nzoia Sugar companies

A Chi Square test conducted on the members' distribution of age shows that there was a statistically significant ( $P < 0.05$ ) variation ( $\chi^2_{3,0.05} = 79.667$ ) in the use of internet service in sugar sales transactions. Table 4.1 shows that those who used internet service were 36.7% while those whose use was often were 52.5%. On the other hand, those who used the internet rarely were 5.0% while those who used it very rarely were 5.8%.

Cross tabulation was then used to determine the distribution of responses in the three sugar companies. The results are summarized in Table 2

Company Name	Regularity in the use of internet				Total
	Very often	Often	Rare	Very Rare	
Mumias	23(51.1%)	19(42.2%)	2(4.4%)	1(2.2%)	45
West Kenya	6(20%)	24(80%)	0(0.0%)	0(0.0%)	30
Nzoia	15(33.3%)	20(44.4%)	4(8.9%)	6(13.3%)	45
Total	44	63	6	7	120

Table 2: Cross-tabulation results on regularity of internet use in the sugar companies

A Chi Square test of  $\chi^2_{6,0.05} = 20.737$  indicate a highly significant ( $p < 0.01$ ) dependence between companies and use of internet. From Table 4.2, respondents who used internet very oftenly were 51.1%, those whose use was often were 42.2%, 4.4% used it rarely while 2.2% used it very rarely. At West Kenya, the very often users were 20.0% and often users were 80.0%. At Nzoia sugar, those who used internet very oftenly were 33.3%, those who used it oftenly were 44.4%, rare users were 8.9% and very rare users were 13.3%. The results indicate that Mumias Sugar Company had a greater number of very often users followed by Nzoia then West Kenya. In the 'often' users category, West Kenya was in the lead followed by Nzoia then Mumias Sugar companies.

The study also sought to determine internet use across the various positions (top manager, middle level manager and ordinary staff). The results are recorded in Table 3.

Regularity	Position			Total
	Top Manager	Middle Level Manager	Ordinary Staff	
Very often	15(34.1%)	19(43.2%)	10(22.7%)	44
Often	26(41.3%)	23(36.5%)	14(22.2%)	63
Rare	0(0.0%)	5(83.3%)	1(16.7%)	6
Very Rare	5(71.4%)	2(28.6%)	0(0.0%)	7
Total	46	49	25	120

Table 3: Cross-tabulation results on regularity of internet use vs position in marketing departments of Mumias, Nzoia and West Kenya Sugar Companies sugar companies

A Chi Square test of  $\chi^2_{4,0.05} = 9.551$  indicate that there was ( $p > 0.05$ ) independence between regularity in internet use and position in marketing departments of Mumias, Nzoia and West Kenya Sugar Companies sugar companies. Results in Table 4.3 indicate that among the very often users, the top managers were 34.1%, middle level managers were 43.2% while the ordinary staff were 22.7%. 41.3% of the often users were top managers, 36.5% were middle level managers while 22.2% were ordinary staff. Amongst the rare users, 83.3% were middle level managers and 16.7% were ordinary staff. 71.4% of the very rare users were top managers while 28.6% were middle level managers.

### 3.4. Influence of Internet Use on Sugar Sales

The study sought to establish the influence of internet use on sugar sales. Respondents were asked whether there were any changes in the sugar sales due to internet use. The results are summarized in Table 4

Influence	Frequency	%
Very big increase	35	29.2
Moderate increase	69	57.5
Not sure	14	11.7
Small decrease	1	0.8
Very small decrease	1	0.8
Total	120	100.0

Table 4: Influence of internet use on sugar sales in Mumias, Nzoia and West Kenya Sugar Companies sugar companies

A Chi Square test conducted on the respondents' responses showed that there was a highly statistically significant ( $P < 0.01$ ) variation ( $\chi^2_{4,0.05} = 137.67$ ). Results in Table 4.4 indicate that 29.2% of respondents reported a very big increase in the sugar sales, 57.5% reported a moderate increase, 11.7% were not sure, 0.8% reported a small decrease and very small decrease. Majority of the respondents reported an increase in the speed of sugar sales due to internet use. These results imply that if fully embraced, internet use can boost the speed of sales in a company.

3.5. Application of Internet in Other Services

3.5.1. Use of Internet Services for Advertising

Respondents were asked to indicate how often internet services were used in advertising by their company. The results are summarized in Figure 4.

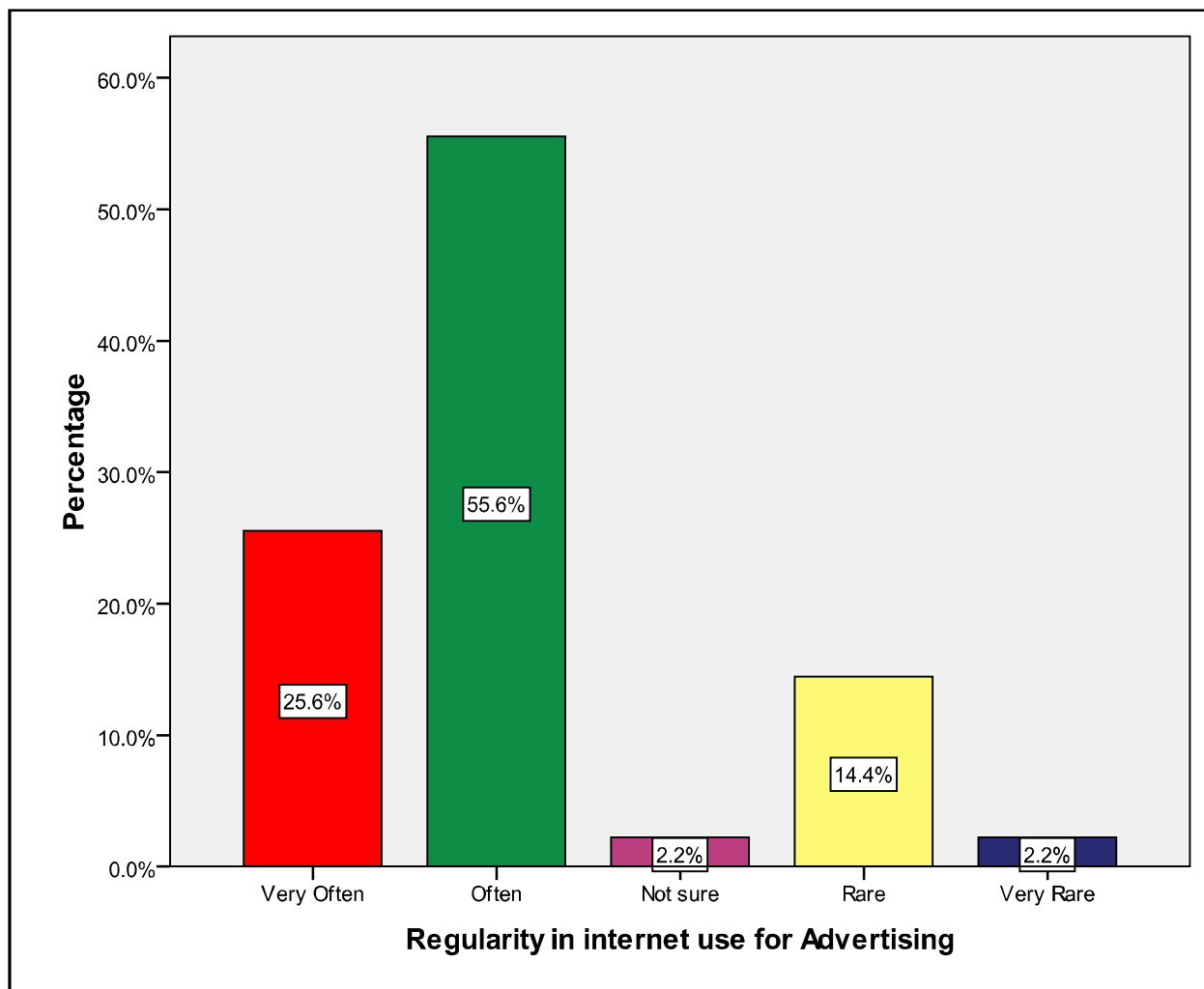


Figure 4: Regularity in the use of internet for advertising by marketing departments of Nzoia, West Kenya and Mumias sugar companies

A Chi Square test conducted on the respondents’ responses showed that there was a highly statistically significant ( $P < 0.01$ ) variation ( $\chi^2_{4,0.05} = 115.417$ ). Results in Figure 4 indicate that 25.6% of respondents used the internet for advertising very often, 55.6% used it often, 2.2% were not sure, 14.4% rarely while 2.2% used the internet for advertising very rarely. This implies that the internet is widely being used for making advertisement

3.5.2. Use of Internet for Gathering Customer Information

The study sought to establish the regularity of internet use in gathering customer information. The results are summarized in Table 5.

Regularity	Frequency	%
Very Often	25	20.8
Often	82	68.3
Not sure	1	0.8
Very Rare	12	10.0
Total	25	20.8

Table 5: Regularity in the use of internet in gathering customer information by marketing departments of Mumias, Nzoia and West Kenya Sugar Companies



A Chi Square test conducted on the respondents' responses at 5% level of significance showed that there was a highly statistically significant ( $P < 0.01$ ) variation ( $\chi^2_{3,0.05} = 129.80$ ).

Results in Table 5 indicate that 20.8% of respondents used the internet in gathering customer information very oftenly, 68.3% used it oftenly, 0.8% were not sure, while 10.0% used the internet for gathering customer information very rarely. The findings imply that the internet is widely used in companies to gather customer information.

### 3.5.3. Use of Internet in Procurement

Regularity	Frequency	%
Very Often	27	22.5
Often	82	68.3
Not sure	3	2.5
Rare	1	0.8
Very Rare	7	5.8
Total	120	100.0

Table 6: Regularity in the use of internet in procurement by marketing departments of Mumias, Nzoia and West Kenya Sugar Companies

A Chi Square test conducted on the respondents' responses showed that there was a highly statistically significant ( $P < 0.01$ ) variation ( $\chi^2_{4,0.05} = 193.00$ ). The results (Table 4.6) indicate that 22.5% of respondents very oftenly use the internet in procurement, 68.3% used it oftenly, 0.8% were not sure, while 5.8% used the internet in procurement very rarely. Hence the internet was commonly being used for procurement purposes.

### 3.5.4. Use of internet in making payments

The study further sought to determine regularity of internet use in making payments. The results are recorded in Table 4.7.

Regularity	Frequency	%
Very Often	8	6.7
Often	33	27.5
Not sure	9	7.5
Rare	32	26.7
Very Rare	38	31.7
Total	120	100.0

Table 7: Regularity in the use of internet in making payments by marketing departments of Mumias, Nzoia and West Kenya Sugar Companies

A Chi Square test conducted on the respondents' responses showed that there was a highly statistically significant ( $P < 0.01$ ) variation ( $\chi^2_{4,0.05} = 34.250$ ). Results in Table 4.7 indicate that 6.7% of respondents used the internet in making payments very oftenly, 27.5% used it oftenly, 7.5% were not sure, while 26.7% used the internet for gathering customer information rarely while 31.7% used it very rarely. This implies that a very small proportion use internet services in making payments.

### 3.5.5. Use of Internet in Making Orders

The study sought to find out how frequent companies use internet in making orders.

Regularity	Frequency	%
Very Often	13	10.8
Often	45	37.5
Not sure	13	10.8
Rare	34	28.3
Very Rare	15	12.5
Total	120	100.0

Table 8: Regularity in the use of internet in making orders by marketing departments of Mumias, Nzoia and West Kenya Sugar Companies

A Chi Square test conducted on the respondents' responses at 5% level of significance showed that there was a highly statistically significant ( $P < 0.01$ ) variation ( $\chi^2_{4,0.05} = 36.00$ ). Results in Table 4.8 indicate that 10.8% of respondents used the internet for



making orders very oftenly, 37.5% used it oftenly, 10.8% were not sure, 28.3% and 12.5% used the internet for making orders very rarely. The findings imply that the internet is widely used in companies to gather customer information.

3.6. Proportion of Customers Accessed Through Internet

The study sought to establish the proportion of customers accessed through internet. The results are given in Table 9.

Response	Frequency	Percent
Very big	12	10.0
Big	90	75.0
Not sure	7	5.8
Small	2	1.7
Very small	9	7.5
Total	120	100.0

Table 9: Proportion of customers accessed through internet by marketing departments of Mumias, Nzoia and West Kenya Sugar Companies

A Chi Square test conducted on the respondents’ responses at 5% level of significance showed that there was a highly statistically significant ( $\chi^2_{1,0.05} = 229.083$ ). The results indicate that 10.0% used internet to access a very big proportion of customers, 75.0% to access a big proportion of customers, 5.8% were not sure, 1.7% to access a small proportion of customers and 7.5% used internet to access a very small proportion of customers. From these results, it is evident that the internet is used to access a wide range of customers.

4.3.5 Marketing stakeholders accessed through internet

The study further sought to establish the specific marketing stakeholders that are majorly accessed through internet. The results are given below

3.6.1. Accessing Wholesalers through Internet

The study sought to establish whether wholesalers were commonly accessed through the internet. The results are given in Figure 5.

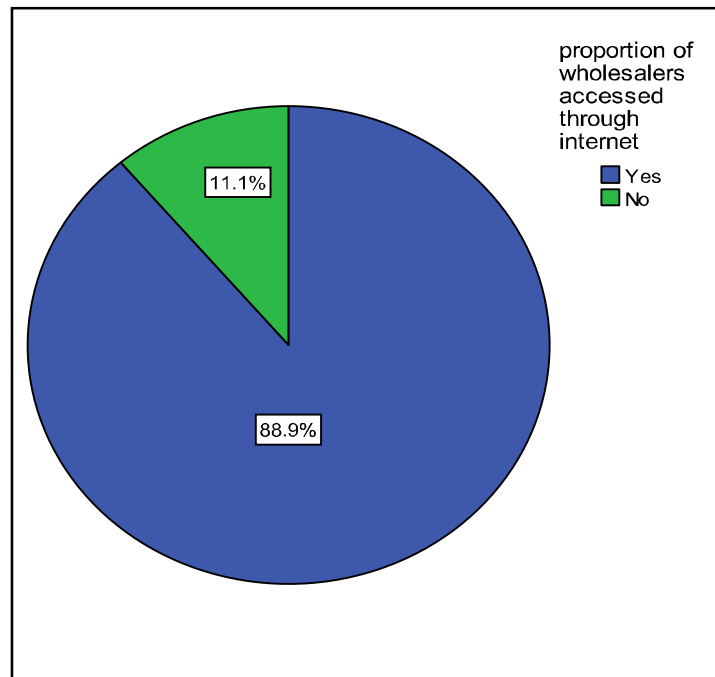


Figure 5: Access of wholesalers through internet by marketing departments of Mumias, Nzoia and West Kenya Sugar Companies

A Chi Square test conducted on the respondents’ responses showed that there was a highly statistically significant ( $\chi^2_{1,0.05} = 67.50$ ). Majority (88.9%) agreed that they majorly accessed wholesalers through the internet while 11.1% did not majorly access wholesalers through the internet. These results indicate that internet was a common means of accessing wholesalers.

3.6.2. Accessing Retailers through Internet

The study further sought to establish whether retailers were commonly accessed through internet. The results are given in Figure 6.

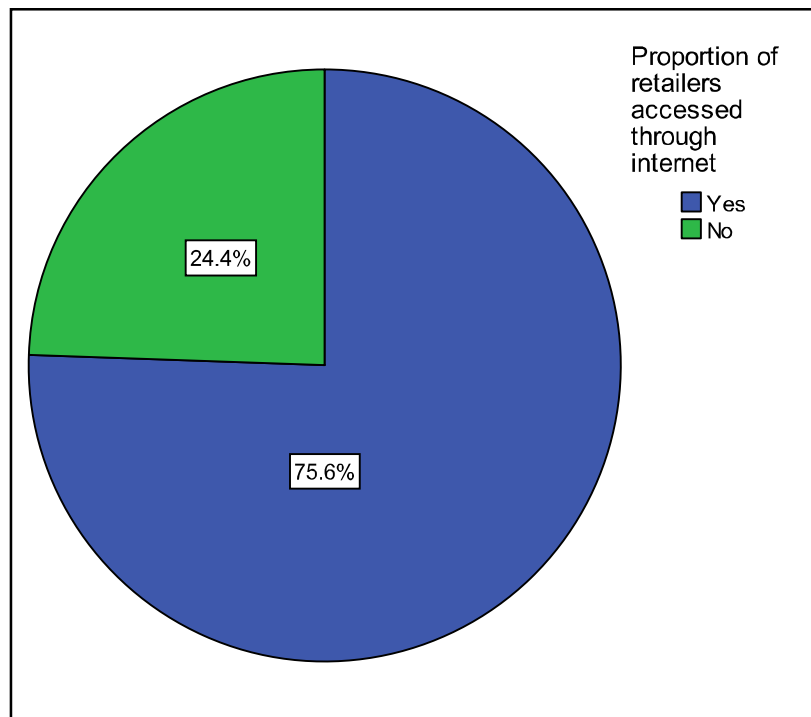


Figure 6: Accessing retailers via internet by marketing departments of Mumias, Nzoia and West Kenya Sugar Companies

A Chi Square test conducted on the respondents’ responses showed that there was a highly statistically significant ( $P < 0.01$ ) variation ( $\chi^2_{1,0.05} = 28.03$ ). The results in Figure 6 indicate that majority of the respondents (75.6%) majorly used internet services to access retailers. However, a few (24.4) did not commonly use the internet to access retailers.

3.6.3. Accessing Consumers through Internet

Respondents were asked to indicate whether they commonly accessed consumers through the internet. The responses are summarized in Figure 7.

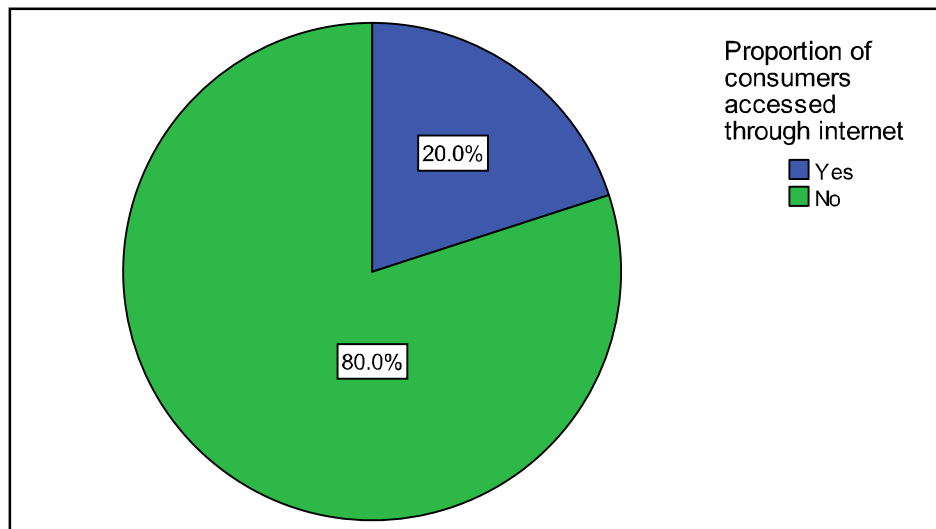


Figure 7: Accessing retailers through internet by marketing departments of Mumias, Nzoia and West Kenya Sugar Companies

A Chi Square test conducted on the respondents’ responses at showed that there was a highly statistically significant ( $P < 0.01$ ) variation ( $\chi^2_{1,0.05} = 34.13$ ). From the results, only 20.0% agreed that they use the internet to access retailers. The majority (80.0%) said they did not use internet to access retailers. This was an indication that retailers were not commonly accessed by use of internet. However, internet use should be enhanced so that consumers can also enjoy its benefits. For instance, Billgate (2000) notes that online shopping has increased for the major retail outlets, small artisans and traders. Business-to-business and financial services on the Internet affect supply chains across entire industries.

### 3.6.4. Access of Brokers through Internet

Respondents were asked to indicate whether they commonly accessed brokers through the internet. The responses are summarized in Figure 8.

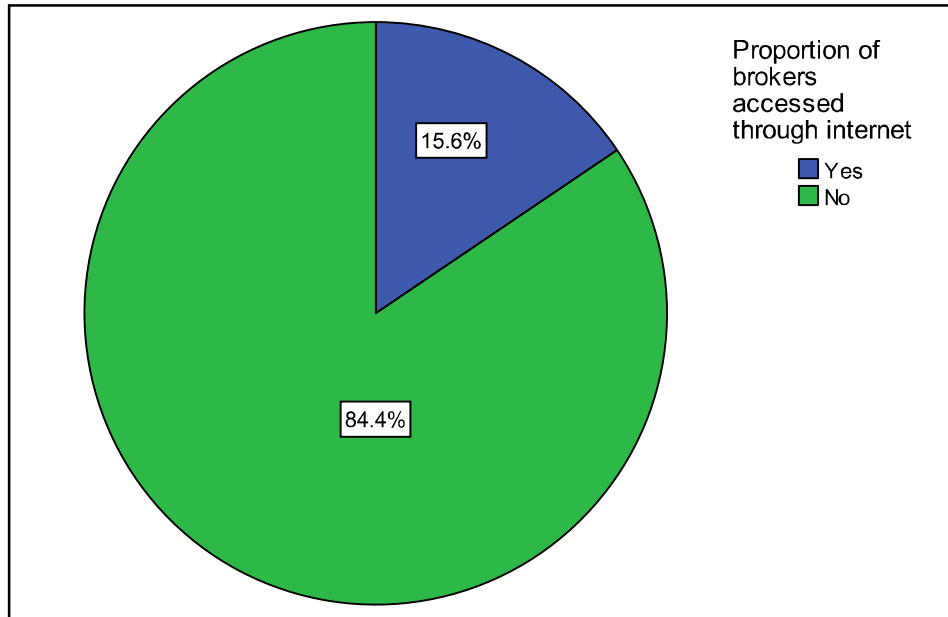


Figure 8: Accessing brokers through internet by marketing departments of Mumias, Nzoia and West Kenya Sugar Companies

A Chi Square test conducted on the respondents' responses showed that there was a highly statistically significant ( $P < 0.01$ ) variation ( $\chi^2_{1,0.05} = 53.33$ ). The results in Figure 8 indicate that 15.6% agreed that the internet was majorly used in accessing brokers. On the other hand, majority (84.4%) said that the internet was not majorly used for accessing brokers. This implies that internet was not a commonly used tool in accessing brokers.

### 3.6.5. Access of Commission Agents through Internet

Respondents were also asked to indicate whether they majorly accessed commission agents through the internet. The responses are summarized in Figure 9.

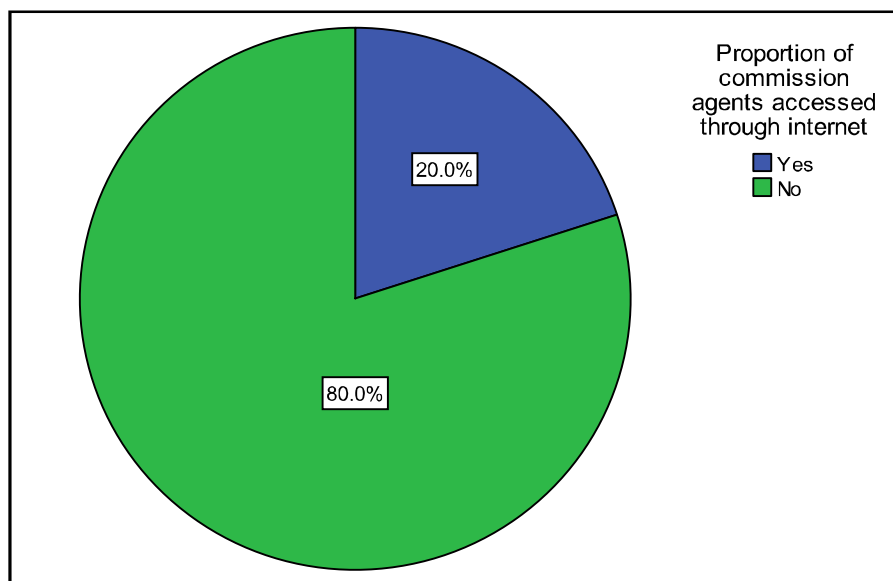


Figure 9: Access of commission agents through internet by marketing departments of Mumias, Nzoia and West Kenya Sugar Companies

A Chi Square test conducted on the respondents' responses showed that there was a highly statistically significant ( $P < 0.01$ ) variation ( $\chi^2_{1,0.05} = 38.533$ ). The results indicate that only 20.0% of respondents said that commission agents are accessed through internet

but the majority (80.0%) said that commission agents were not commonly accessed through the internet. This implies that internet services were not commonly used in accessing commission agents.

4.3.6 Influence of internet use on the customer base by marketing departments of Mumias, Nzoia and West Kenya Sugar Companies  
The study sought to establish how internet use had influenced the customer base. Respondents were asked to state how internet use had influenced the customer base. The results are summarized in Figure 10.

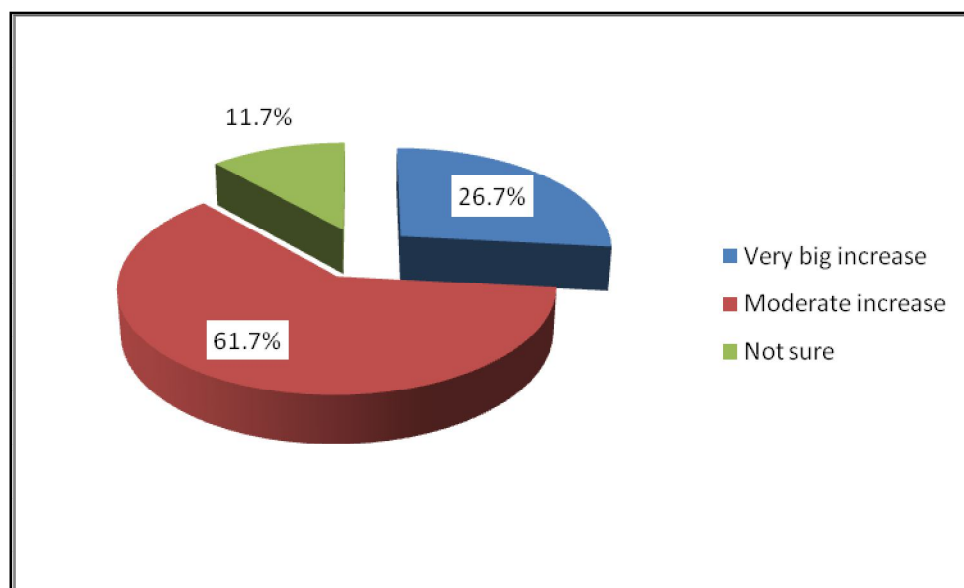


Figure 10: Influence of internet use on the customer by marketing departments of Mumias, Nzoia and West Kenya Sugar Companies

A Chi Square test conducted on the respondents' responses showed that there was a highly statistically significant ( $P < 0.01$ ) variation ( $\chi^2_{2,0.05} = 47.200$ ). From Figure 10, 26.7% of respondents reported a very big increase; moderate increase was represented by 61.7% while 11.7% were not sure. This indicates that internet use had a positive impact on the customer base.

From the results, it is evident that internet use is very vital for the companies in the marketing of sugar. However, there is still much that needs to be done to fully enjoy its benefits. According to Champy, (2002) internet has made the world a global village and enables information exchange quickly. Internet has become a most potential ICT potential tool to contribute to Agricultural development. Websites may be developed to produce information to sugar cane growers' right at their location and even in their own original languages. Internet and its applications are very useful in sugarcane production, planning, weather forecasting, post harvest management, marketing and agricultural extension systems.

Internet use	$\chi^2$	p
Regularity of internet use in making sugar sale transactions	79.67	0.000**
Influence of internet use on sugar sales	137.67	0.000**
Regularity of internet use for advertising	71.60	0.000**
Regularity of internet use in gathering customer information	129.80	0.000**
Regularity of internet use in procurement	193.00	0.000**
Regularity of internet use in making payments	34.25	0.000**
Regularity of internet use in making orders	36.00	0.000**
Influence of internet use on the customer base	47.20	0.000**

Table 10: Summary of Chi Square relationship on internet use and promotion of sugar sales  
\*\*Highly significant variation ( $p < 0.01$ )

Chi Square values between variables on internet use indicated highly significant variations in the distribution of responses. This indicated that internet use was regularly used in the promotion of sugar sales. Moreover, internet use was having a significant influence in the promotion of sugar sales. The findings are in agreement with the views of Billgate (200) who noted that online shopping had increased for major retail outlets, with business-to-business and financial services on the internet affecting the supply Chains across entire industries. Champy (2002) also notes that the internet has made the world a global village and enables information exchange very quickly.

#### 4. Conclusion and Recommendations

The study findings revealed that the internet was being used by sugar companies in the promotion of sugar sales and this had a positive influence on the volume and speed of sugar sales.

Sugar companies should be encouraged to use internet services in order to increase and speed up sugar sales. This can be through organizing seminars to train staff on computer skills including internet use.

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