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Farmers' Perceptions Regarding the use of Botswana's *Tsa Temo Thuo* Television Programme

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Abstract

The purpose of the study was to examine farmers' perceptions about the usefulness of the *Tsa Temo Thuo* agricultural programmes broadcasted every Monday of the week on the Botswana Television between 7:30 and 8:00 pm for farmers. A questionnaire was used to gather data from 36 farmers with different agricultural backgrounds in the Boteti sub-district regarding the effectiveness of the programme in disseminating information. A simple random sampling technique was used to get the 36 farmers from the list of 40 farmers. The results showed that the farmers saw the programme as relevant for their farming services but voiced that the programme be frequently reviewed to ensure emerging issues were integrated. The results also revealed that factors such as farming environment (Mean = 4.36; SD = .49); access to television programme (Mean = 4.22; SD = .59) and ignorance about farming issues (Mean = 3.36; SD = 1.05) were perceived as useful. However, this being a case study, a similar study should be conducted nationwide to ascertain and compare the perceived effectiveness of the television programme.

Keywords: Television, mass media, dissemination, *Tsa Temo Thuo*, farmers' perceptions

Introduction

Several mass media programmes have emerged in the past fifteen years in Botswana as a way to address the needs of farmers' knowledge systems. Previously, there were programmes such as *Molemi ithuthe* and *Pitso ya balemi* broadcasted through Radio Botswana. In addition, there was also the Agri News Magazine published by the Ministry of Agriculture (MoA) since in the early 1970s for disseminating agriculture related information to farmers coupled with the Botswana Daily News, a government supported newspaper. Other print media such as the Gazette Newspaper,

the Sunday Times, The Voice, Mmegi, The Mid Week Sun etc. also published sparingly agricultural oriented news and advertisements (Oladele and Boago, 2011). With the advent of the Botswana Television (BTv) in the early years of the 21st century, several new programmes addressing agricultural issues have emerged, giving farmers a broader perspective to watch, listen, read and acquire a diverse knowledge (education) about farming system. The *Tsa Temo Thuo* is the new programme currently broadcasted on the Botswana Television with the goals of facilitating the efforts made by ISPAAD in (i) disseminating information and research findings to the farming community, (ii) sensitizing (educating) farmers on different agriculture issues, (iii) educating on support services available for the field production agriculture

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promoting food security at different levels of the economy, and (v) promoting commercialization of the agriculture activities through adoption of mechanization, different farm inputs, credits and extension outreach programmes (<http://www.gov.bw>).

The *Tsa Temo Thuo* television programme, which was initiated by the government in 2007 through the Ministry of Agriculture, seems to have gained popularity as farmers tend to watch it and further discuss its outcomes during their formal and informal meetings, reflecting on what has been broadcasted. The programme is aired in the local television in both English and Setswana languages to draw the attention of farmers and extension educators (Oladele, and Boago, 2011; Mosime, 2007).

The perception of people about such a new innovation in the community therefore plays a significant role in understanding its relevance and effectiveness. Farmers' perceptions about television programmes as a new tool and intervention in disseminating information can bring about a shift among small scale farmers who are socio-economically challenged. It is for this reason a study of this nature was set to assess the perceptions of small-scale farmers on the adoption of *Tsa Temo Thuo* television programme in disseminating information in the Boteti agricultural sub district.

Perception is a psychological concept essential in social sciences to examine people's beliefs, opinions, values and awareness of new innovations. As indicated by Huff man *et al.* (1987), cited in Mohamed and Mukhiar (2007), psychology is a scientific study of behavior that has four goals of describing, explaining, predicting and the changing behavior of people. Thus, farmers thinking in their business of farming is important. Currently, there is no research that has been conducted to evaluate the impact of television programmes in disseminating knowledge information to Botswana farmers; hence this study is

significant. Farmers are targeted in the *Tsa Temo Thuo* television programme and how they perceived the intervention is crucial in the development of the education of farmers.

According to Nazari and Hassam (2011), educational interventions transferred through a TV program end up in a significant knowledge enhancement to farmers. As mentioned by Mahmood and Sheikh (2005) and Nazari and Hasbullah (2010), television and radio programmes (mass media) have become popular in agriculture. The use of mass media such as television and radio has several advantages in farming. First, it enables one to reach out to a larger group of farmers, disseminating information about weather forecasts, natural disaster, and agricultural markets opportunities available and new technologies for the improvement of farming (ibid). Second, mass media (television) programmes have edge over other programmes as they penetrate the illiterate people, who watch TV without being bothered about the unfriendly environment; thus ensuring more information gets to farmers (Badodiya and Chaudhary, 2011). Third, ICT in the form of television helps in changing the socio-economic and cultural aspects of many people particularly farmers in rural areas and adds to knowledge regarding technology integration in agriculture (Nazari and Hasbullah, 2008). Fourth, television programmes educate the farmer about any implied new change, discoveries and knowledge in farming (Chhachhar *et al.*, 2012).

According to Irfan *et al.* (2006), and Chhachhar *et al.* (2012), television is one of the forms of mass media capable of disseminating agriculture information very fast to the farming community. Even though a research study by Chhachhar *et al.* (2012) has shown that a small proportion of farmers (20%) received information through television as compared to more than half who indicated that television was not their source of information, the television still

played an important role in disseminating information to a larger audience. Positively, the study also showed that 87.7% of the people surveyed owned television sets, which means people perceived television as important tool for learning. In Nigeria, Ango *et al.* (2011) examined the role of mass media towards developments in agriculture and found that majority were males, well experienced in farming with over twenty years of experience and accessed information through television and radio programmes. The study also revealed that the strategies for disseminating agricultural programs were highly accessible, convenient, effective and highly beneficial to farmers (p.305). Abubakar *et al.* (2009) reported that the hypotheses tested in their study showed a significant relationship between farmer's sources of agricultural information and relevance of information received in solving agricultural problems ($r = 0.544$, $p = 0.290$) (p. 42). In this regard, scholars tend to imply that television and radio programmes have been observed to play a major role in conveying the latest agricultural technology in many countries, thus facilitating the advancement in farming. Important also in this was the competency of leaders, location, infrastructures and quality of services as they have significant influence on the success of telecommunication centres (Bashir *et al.*, 2011).

The challenge pointed out in Ango *et al.* (2011) about such innovations included lack of electricity which affected the information dissemination through television. Noted in this regard was that farmers tend to face some challenges and difficulties in accessing the required information through mass media (Hassan *et al.*, 2010), inadequate staff and awkward broadcasting times. Other challenges as outlined by scholars included ineffective transfer of the agricultural technology and information to farmers. Ramzli *et al.* (2005) found that the challenges faced by farmers in using television included 'missing the opportunity to watch agriculture programs, limited duration for viewing programme, the

competition from other programmes, 'such as news, entertainment and sport' as well as lack of interest from the young generation. Therefore, the questions are: how useful and effective is the *Tsa Temo Thuo* television programme in disseminating the required technology to farmers? What factors are likely to hinder television information dissemination to farmers? To answer these questions, farmers in the Boteti sub-region were surveyed with the intent to understand their perceptions regarding the use of television to disseminate information. The purpose of this study is to investigate the perceptions of farmers about the effectiveness of the *Tsa Temo Thuo* television (Btv) programmes. Specifically, the study is designed to,

- 1) Describe the demographic characteristics of farmers surveyed in the Boteti sub-district.
- 2) Determine the farmers' perceptions about the usefulness of the *Tsa Temo Thuo*.
- 3) Describe challenges associated with the programme faced by farmers.

Materials and methods

This is a descriptive survey design where data were collected through the use of a questionnaire to describe the status of *Tsa Temo Thuo* television programme as perceived by Boteti agricultural sub-region farmers. The research design was appropriate to describe the situation currently prevailing in the Boteti sub-district about the programme as an intervention to enhance the farming. The study targeted 40 small scale farmers who were both crops and livestock producers. To obtain a sample studied in this article, a simple random sampling method was used to select a group of 36 farmers from the list obtained by the researchers from the Boteti Agricultural sub-district office.

The sample size for this study was determined using Krejcie and Morgan (1970) formula. A random sampling approach was conducted to get 36 out of 40

farmers who participated in the study. To conduct the random sampling, names of 40 farmers were written in a piece of paper separately and cut into small pieces. The pieces of papers were folded and placed in a card board box and shook to mix them. The investigators selected one piece of paper from the box one by one after each other, shaking the box after each selection to come up with 36 names who participated in the study.

A questionnaire was used to collect data from the sample so as to address the three objectives in the study. The questionnaire was formulated to have three sections based on (i) demographic information (2) farmers' perceptions of the *Tsa Temo Thuo* television programme usefulness, and (3) challenges faced by farmers in accessing information broadcasted on the programme. The questionnaire was self-administered whereby farmers were asked to respond to the items on their own by checking on a scale anchored at the end of each statement; 1 = strongly disagreed (SD); 2 = disagree (D); 3 = uncertain (U); 4 = agreed (A) and 5 = strongly agreed (SA). To validate the questionnaire, professionals in the Agricultural Extension Unit of the Botswana College of Agriculture (BCA) reviewed the instrument for the coverage content worth to be in the instrument, whether or not the statements were appropriately formulated, useful and relevant and challenges with the programme. The questionnaire was then pre-tested using 10 farmers in Gabane village in the Kweneng District which was not included in the final survey. To collect data, the questionnaire was delivered to farmers in the Boteti agricultural sub-district by hand and was given five days to complete at their own time. The farmers were required to check on the space provided for their views and opinions about the television programme. The questionnaires were collected on the fifth day and 10 (27%) farmers out of the 36 had not completed their questionnaires. Another set of 10 questionnaires was distributed to the farmers who had not returned their completed

questionnaires. At the end of the second week [14 days], six (60%) farmers out of 10 had completed theirs, bringing the total completed questionnaire to 32 (89%) which was deemed appropriate for the study. The last four completed questionnaires were received after a second follow-up with mobile phone which brought the total return rate to 36 (100%).

The latest version of the Statistical Package of Social Science (SPSS) was used to analyze data at Botswana College of Agriculture Computer Laboratory. Descriptive statistics were used to interpret and report the findings. Frequencies and percentages were used to describe the demographic characteristics of respondents. Statements about the preemptions of farmers about *Tsa Temo Thuo* television programme together with the challenges faced by farmers in watching the programme were described using means and standard deviations. A mean value of 2.00 separated agreements from disagreement in reporting the decisions made on the results.

Results

The purpose of this study is to describe the perceptions of farmers surveyed in the Boteti sub district about the effectiveness of *Tsa Temo Thuo* television program in disseminating information to farmers. The specific objectives of the study included; (i) describing the demographic characteristics of farmers surveyed, (ii) determining farmers' perception about the effectiveness and usefulness of the television programme in providing information for improving farming and (iii) identifying challenges faced by farmers in accessing information through the television programme. To achieve the objectives of the study, data were analyzed and results are presented in simple descriptions in tables formatted in APA styles organized according to objectives of the study. The results of the study were therefore presented as follows;

Objective 1: Demographic characteristics of Boteti farmers surveyed for the study.

To achieve the first objective, farmers were asked to indicate their personal information in terms of age, gender, marital status, highest education achieved, the type of farming practiced, the number of years (experience) in the type of farming practiced. Results in Table 1 showed that out of the thirty-six (36) farmers who responded to the survey, majority (56%) were male farmers; an equal proportion close to forty percent (38.9%) of farmer respondents were between the ages of 21 and 30 and 41 and 50; while less than one quarter (22.2%) of the farmers were between the ages of 31 and 40. There were no farmers of fifty one years old and above. This means that majority of the farmers surveyed in the Boteti region were young.

At least half (50%) of the farmers were single, close to two thirds (27.8%) were staying with their spouses as partners (cohabiting) and fourteen percent (13.9%) were married. Results in Table 1 also showed that above two thirds (69.4%) of the farmers had secondary education; less than one quarter (22.2%) had reached college as the highest level of education achieved. The results also showed that close to forty percent (38.9%) were arable farmers (crop farmers), thirty six percent (36.1%) practiced mixed farming (that is growing crops and keeping livestock simultaneously) while just one quarter (25%) practiced pastoral farming (livestock rearing).

The results also showed that out of the thirty six farmers, slightly above half (55.6%) of them indicated that they practiced a form of commercial farming; forty five percent (44.4%) were subsistence farmers, majority (58.3%) of the farmers had 3 years and above experience in farming, which shows that most of the farmers were new in farming, one quarter (25%) had two years in farming and the rest were between one year and below. Based on the results, it can be concluded that farmers surveyed were inexperienced in farming and youthful in terms of age. This is unlike in other countries where scholars have found old and experiences of more than ten years in farming (Suriname, 2009). Since majority of the farmers surveyed were young, perhaps there was need to consider a comprehensive research to determine the proportion of novice farmers in relation to experienced farmers. The results of this study may not be a true reflection of the situation in the Boteti agricultural sub-region since the region originally was the cattle post center in the country and one would expect to find majority of farmers to be old and experienced. The results were also not in line with previous research in developed countries which had shown that majority of farmers were aging and needed replacement from the youths. It could have been also beneficial in this study to ask farmers if they owned television and the frequency with which they watched it.

Table 1: Demographic characteristics of farmers (n=36)

Characteristics	Frequency	Percentage (%)
Age		
Between 21 and 30 years old	14	38.9
Between 31 and 40 years old	8	22.2
Between 41 and 50 years old	14	38.9
Gender		
Male	20	55.6
Female	16	44.4
Marital status		
Single	18	50
Married	5	13.9

	Divorced	3	8.3
	Staying together	10	27.8
Educational level			
	Primary leaving certificate	3	8.3
	Secondary education	25	69.4
	College education	8	22.2
Type of farming			
	Pastoral	9	25
	Arable	14	38.9
	Mixed	13	36.1
Level of farming			
	Subsistence	16	44.4
	Commercial	20	55.6
Work experience			
	Less than a year	1	2.8
	1 year	5	13.9
	2 years	9	25
	3 years and above	21	58.3

Objective 2: Perceived effectiveness of *Tsa Temo Thuo* television programme by farmers.

To address this objective, farmers responded to items that asked them to indicate their level of agreement with statements describing relevance and usefulness of the television programme in providing information about farming. Table 2 presented the means and standard deviations of the perceptual statements about *Tsa Temo Thuo* television programme in disseminating information to farmers. The statements presented different situations about the uses, values and effectiveness of the programme anchored on a 5 point likert-type scale for farmers to indicate their level of agreement: 1 = Strongly Disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree or 5 = Strongly Agree. The results as shown in Table 2 were categorized into two parts. In part A, the results presented the kinds of agriculture sectors practiced by stakeholders which the to programme disseminate information on. Part B of Table 2 asked respondents to give their perceptions of the services rendered about the different farming activities through the television programme. To interpret results on a 5-point likert type scale, means ranging from 1 to ≤ 2.49 were used to denote less agreed. The means \geq

2.50 denoted highly agreed. Based on the results, it can be interpreted that farmers highly agreed that the *Tsa Temo Thuo* television programme adequately addressed different agricultural sectors. That is, the programme broadcasted programmes that taught about different areas of the agriculture sectors. The highest means were found on 'Horticulture' and 'Animal Production' both with a Mean = 4.83, SD = 0.38, followed by 'Crop production' with Mean = 4.81, SD = 0.40. This means farmers agreed that two sectors were taking an upper hand compared to other sectors of the agriculture. The least was on 'Agricultural Mechanization' with a mean = 4.19; SD = .87. It can be interpreted to mean that both crop and livestock farmers equally highly agreed that the *Tsa Temo Thuo* television programme broadcast issues related to a variety of agricultural programmes.

Part B of Table 2 showed results on farmers' perceptual statements about the programme. The results showed that farmers agreed that 'the television programme was providing useful information in different areas/ types of farming' (Mean = 4.17; SD = 0.57). This was followed by the statement which stated that '*Tsa Temo Thuo* needs to be reviewed'

(Mean = 4.08; SD = 0.55). The lowest (Mean = 2.89; SD = 0.89) was obtained from a statement which reads that the programme ‘provides adequate information required by farmers’. Although the farmers tended to agree and positively perceived the programme to be effective, the results

showed that the farmers agreed that there was need for the programme to be reviewed (Mean = 4.08; SD = 0.55). The results therefore showed mixed feelings about the programme.

Table 2: Means and standard deviations of Farmers’ perceptions about the programme

Statements	M	SD
Part A: The television programme provided information on;		
Horticulture	4.83	0.38
Animal production	4.83	0.38
Crop production	4.81	0.40
Extension education/Agricultural advisory services	4.53	0.61
Commercial agriculture	4.42	0.60
Agricultural mechanization	4.19	0.86
Agricultural supplies(fertilizers, seeds, machinery)	4.44	0.65
Funding of agricultural projects	4.22	0.80
Poultry production	4.75	0.44
Part B: The television programme		
Created farmers’ understanding of their farming	4.08	0.55
Provided useful information in all types of farming	4.17	0.52
Provided adequate information required by farmers	2.89	0.92
Was a relevant programme for farmers in rural areas	3.47	0.97
Was a relevant programme to improving farming	4.06	0.41
Information broadcasted was objectively prepared	3.44	0.91
Uses appropriate language to educate farmers	3.50	0.78
<i>Tsa Temo Thuo</i> is a good programme	4.00	0.41
<i>Tsa Temo Thuo</i> needs to be reviewed	4.31	0.67
<i>Tsa Temo Thuo</i> empowers farmers with appropriate knowledge	3.97	0.61

Objective 3: Challenges of farmers regarding *Tsa Temo Thuo* television programme.

The farmers were asked to indicate the challenges they face in viewing the *Tsa Temo Thuo* programme. Results as shown in Table 3 presented statistical means and standard deviations on perceived challenges faced by the farmers. To indicate how the farmers perceived the challenges on a 5 point likert-type scale, the farmers indicated or checked on scale 1= Strongly Disagreed, 2= Disagreed, 3= Uncertain, 4= Agreed or 5= Strongly Agreed. The results as shown in Table 3 presented the highest Mean = 4.36; SD =0.49, implying that the farmers highly agreed that “farming environment was not improving” as the biggest challenge

followed by farmers’ “access to television programme” (Mean = 4.22; SD = 0.59) and “minimum discussion forums for farmers” (Mean = 4.14; SD = 0.593). The least perceived to be a challenge by the farmers was the variable on “literature materials for farmers” (Mean = 3.28; SD =1.05). These results may be a true reflection of what transpired in the field about challenges affecting farming today since information is available through different outlets such as the internet and social networking technology like Facebook, Twitter and World Wide Web (www). Farmers of today are able to download relevant information online for use. The use of information and communication technology (ICT) such as mobile phone also provides information

relevant for use by farmers; hence there may be no need to fret about hard copy literature materials 'literature materials for farmer' and that could be the reason why farmers found the statement to be a least challenge. However, the results are interesting to see

farmers indicating that 'farming environment was not improving' despite the government's effort to use television programmes as an innovation and other financial support available.

Table 3: Means and standard deviations on challenges

Challenges faced by farmers	M	SD
Ignorance towards farming issues	3.36	1.046
Literature materials for farmers	3.28	1.003
Preference given to traditional methods of farming	3.44	1.027
Education of farmers	3.58	0.967
Absenteeism of farmers	3.69	0.951
Minimum discussion forums for farmers	4.14	0.593
Funding	3.50	0.878
Access to television programs	4.22	0.591
Farming environment not improving	4.36	0.487
Attitudes of farmers towards technology	3.08	1.025

Discussion

The same proportions (38.9%) of respondents fell in the ages of 21 to 30 and 41 to 50, with a smaller proportion (22.2%) falling in the ages between 31 to 40. Although the age distribution of respondents tended to be symmetrically distributed, there seemed to be flat-shaped density curve at the center because of the few proportions of the aged between 31 and 40 years old. Majority of the respondents in this study were males. This is not surprising since previously farming in many African countries was associated with man; but today women have taken the lead in farming particularly in rural parts of the developing countries to address poverty issues. As indicated by Squire, (2010), FAO (2011) approximately 80% in African farming were women addressing food security. Most of the respondents in this study were 'not married' and were cohabiting.

The study found that most of the respondents have secondary education qualification probably because currently the government tends to support out of school programmes particularly the youths to address unemployment. Majority practiced arable farming at a commercial level of

production and had 3 years and above farming work experience and this may be due to government farmer empowerment schemes and policies introduced in the past five years to improve the livelihoods of people living in rural areas in Botswana. The *Tsa Temo Thuo* television programme was seen to be a good programme as it broadcasts information on crop and livestock production, agricultural advisory services and supplies, commercialization of agriculture and funding of agriculture projects, research findings as well as agricultural mechanization. This is in line with Nazari and Hassam (2011); Sher (2001) in Chhachhar (2012) educational interventions transferred through TV programmes to enhance knowledge of farmers.

The results further indicated that minimum discussion forum, access to television programmes, ignorance and attitudes of farmers towards technology, conservative-ness and education of farmers were some of the issues raised as challenges faced by farmers in watching the *Tsa Temo Thuo* television programme. This was supported by Ramli *et al.* (2013) and Hassan *et al.* (2010) who also identified some challenges faced in using television by farmers.

Conclusions

Majority of males who participated in the study were single, cohabiting and were within the ages of 21 to 30. Majority had attained secondary education and practiced arable farming with a maximum of 3 years and above farming work experience. This means there is need to continue the innovation as it provides education for farmers. Results indicated that farmers agreed and perceived *Tsa Temo Thuo* television programme as a good programme as it broadcasts information on crop and animal husbandry, agricultural advisory services and supplies, commercialization of agriculture and funding of agriculture projects as well as agricultural mechanization. Secondly, the education and knowledge of agriculture disseminated through the *Tsa Temo Thuo* television programme was found to be relevant and appropriate to farmers and other stakeholders.

However, the results showed that the programme needs to be reviewed to empower farmers. The information provided by the programme was perceived to be inadequate and the local language used was found to be appropriate to educate Botswana farmers. The results further indicated that minimum discussion forum, access to television programmes, ignorance and attitudes of farmers towards technology, conservativeness and education of farmers were some of the issues raised as challenges faced by farmers in watching the *Tsa Temo Thuo* television programme. Farmers should be encouraged to use the toll free lines to obtain feedback from the agriculture authority. Farmers perceived the programme to be useful, relevant and educational as it disseminate accurate and appropriate knowledge for improving their farming. A similar study should be conducted in all districts of Botswana to ascertain and compare the perceived effectiveness of the *Tsa Temo Thuo* educational programme by farmers' nationwide. Farmer education on new

innovations and interventions is important in this information age.

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