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Assessment of Customers` Satisfaction with Agricultural Research Services Quality in Southern Agricultural Research Institute, Ethiopia

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Abstract

Assessing farmers` satisfaction with improved agricultural technology and practices that meet the needs of farmers and different stakeholders is imperative to address the level of feelings with the quality of services. The assessment on farmers' satisfaction with the quality, relevance, and inclusiveness of improved agricultural technology and practices services delivery was the goal of this study. Data were gathered from 156 randomly selected farmers and stockholder from Wolayita, Gamogofa and Keffa agricultural Zone through household survey, KIIs and focus group discussion. The findings indicated that among various parameters that measured in this study, Farmers and

stakeholders were highly satisfied with the professional ethics, discussion with stakeholder, service delivery efficiency, fast responsiveness and access to service of agricultural research institute and agricultural research centers, were found very promising service-delivery-mechanisms. However, farmers and stakeholders did not satisfied with Service provision, quality of service, acceptance of feedback and gender responsiveness, were not found likely service-delivery. Even though most of the services are found at high 92% customer satisfaction index, the government and responsible body improve services which are found at satisfactory level.

Keywords: Customer, Satisfaction, Inclusiveness, Responsiveness, Service Quality

Introduction

Customer satisfaction is important element for sustaining organizational priorities and practices. It is a double edge sword to look as a process measure or as an outcome measure. When it comes to the context, procedures, and possibly of the service satisfaction is seen as an outcome measure; however, when it approaches to the degree in which clients believe that the service has assisted them in solving their problems, it is seen as a process measure (Urcil Papito *et al* 2023) ^[13].

Agricultural research centers have been changing their organizational procedures through fundamental work-process-changes, would provide their services according to the standards that were identified in advancement which were expected to check and make adjustments. According to this, it was necessary to conduct customer satisfaction survey to find out the opinion of the clients on level of service satisfaction with the service delivery.

Many efforts were being made to change the system and organization of the Southern Agricultural Research Institute so that they could fulfill their responsibility of providing efficient and effective services to the users efficiently and with quality. The change in the basic work process would allow the institute and the research centers might be a process-based organization and to provide efficient and effective service to the customer. The application has been submitted and many questions have been found.

According to Davis 2009 ^[5]; (Ahmad Reza and Azadeh N. 2014) ^[8], the agricultural service delivery thus included elements of technology transfer, more general goals for rural household level. To better the lives of farmers, agricultural technology and training delivery programs were first intended as a way to extend knowledge based on research to the rural household development, skills management, and farmers` training. Farmers` and stakeholders` satisfaction evaluation is important to generate farmers' fulfillment of agricultural technology and practice delivery services in programs that address the needs of farmers and the agro-ecological conditions.

The maintenance of agricultural technology supplies, the agricultural input supply system, and agricultural research institute and centers performance in terms of agricultural input dissemination were all revitalized to reach out to all farmers and assist them in realizing their aspirations of higher output and farm income. Examining the farmers' socioeconomic traits, the agricultural technology supply channels that research institute and centers used in the study area, the farmers' satisfaction with delivery services, and the impact of technology distribution agents on their farm income were other goals of research organizations (Ovharhe, O., *et al*, 2020)^[10].

Importance of the study

The customers' service delivery satisfaction on agricultural technology users with the research results and work is gathered and analyzed, because it could create a favorable environment for making the necessary improvements. As the institute was expected to continuously provide appropriate and effective animal, crop, and natural resource improved technologies to farmers and stakeholders in the southern region, it strengthens and widening of the importance of the work to the users.

Definition of customers' satisfaction survey

A customer satisfaction survey is a survey conducted over some time, using criteria to determine, how satisfied the customers with the services provided by the institute, and what improvements they would like to see. To remain competitive, service firms must provide great service to their clients. Furthermore, recognizing and meeting customers' expectations, as well as being distinct from competitors, are critical in today's globalized market. The banking business is one of the world's most well-known service industries, and it is critical to economic success. Banking services enable the instantaneous circulation of money throughout the world in an increasingly global community and market space. Certain firms are becoming more customer-oriented, with novel ideas and techniques (Nigist Kelemu, 2017)^[7].

According to Melesse Abebe (2014)^[6] in today's institutional environment, competition has made it harder for businesses to exist, and new technologies (services and goods) are being introduced on a daily basis. Agricultural research Institutes must work hard on their customers in order to thrive, earn a high profit, and minimize consumer dissatisfaction service. The research Institute meets or exceeds the expectations of its customers. Thus, client satisfaction is an important component inside for the sake of the company's success. Customer happiness is important in a competitive environment where research Institute compete for customers, as a major differentiation; it is gradually becoming a key component of research Institute strategy.

Scholars explained that customer satisfaction should be conducted to determine the satisfaction level of the customers by collecting the positive or negative opinions regarding the new and adapted technologies or services provided by the institute. This customer satisfaction survey was based on a standard survey method using selected criteria to determine, how satisfied customers with the service they have received.

The importance of measuring customer satisfaction

Customer Satisfaction is a relative measure based on questionnaires designed to measure the level of customer

satisfaction. Therefore, we can increase customer loyalty and efficiency only when we increase customer satisfaction in the required time. The basic goals of customer satisfaction are to increase and increase the satisfaction to the required level, and it is a measuring tool to take the level of the institute to a higher level. For the institute to reach this higher level, the problems or requirements that are the reason for the lower satisfaction of most of the customers are identified based on the analysis of the data, and it opens the door to work hard and quality to solve the problems.

According to Fodor G., (2016)^[2] Customers satisfaction is a complex phenomenon; hence, it is essential regularly measure the status of satisfaction of client's customer satisfactions criticism may be related with viewed by the way of mutual pointer of a low level of satisfaction, their absence, but, does not essentially infer high degree of satisfaction. Client and stakeholder satisfaction is biased and is often proportionate the quality of service provide to clients.

Customer Satisfaction Measurement Provides Favorable Conditions: -

- Able to demonstrate what user needs are in terms of agricultural research technology and the importance of these needs.
- Perception rate shows how well the research institute's clients were received the services.
- First, it provided useful information indicator to identify service delivery that could be improved.
- It helped to identify the major technology-supply- and performance-gaps by the service providers.
- It provided an opportunity to set goals to improve the perceived gaps and to monitor the progress of the satisfaction index regularly.
- Through improved customer satisfaction/efficiency/customer loyalty and customer retention of the institute would be strengthened.

Methodology

The study was conducted by preparing a suitable questionnaire for the customers, going to the location of each customer, asking them to answer the questions, and gathering information through a group discussion.

Description of research site

The research was conducted in three Agricultural Research Centers found in three Zones in Southern Ethiopia. Areka Agricultural Research Center located at wolayita zone, Bonga Agricultural Research Center located at Kefa Zone and Arba-minch Agricultural Research Center located at Gamo gofa zone which are sub-region of Southern Ethiopia.

Information on Users (Target Group)

External customers: Institutions and main work processes organized in their work are mainly provided to foreign farmers, pastoral, agricultural research, and agricultural bureau clients who are directly related to the mission below.

Internal customers: Researchers, technical assistants, support providers, and supporting work processes are obliged to serve the internal staff of the institution. Consequently, a customer satisfaction survey was conducted, and the institution's external customers and internal customers participated.

Method of data collection

When conducting a satisfaction survey, information was obtained from two sources, which were directly collected from the primary and secondary sources. Primary data was collected from household survey, key informant interviews and focus group discussion; however, the secondary data was collected from reports, books, journals, web sites and unpublished documents.

Method of Sample size determination

To determine the respondent sample size, this customer and stockholder satisfaction survey explore Cochran (1977) [1]

statistical formula $n = \frac{pqz^2}{d^2}$. The assumed population could be taken with in consideration of 95% confident interval.

Where, P= men customer and stakeholder were 85 percent of internal and external customers, q=women customers and stakeholder were 15 percent, t= abscissa of normal curve that cut an area of a, d= error term. But for finite population correction (corrected sample size),

$n = \frac{n_0}{1 + (\frac{n_0 - 1}{N})}$. Where $n_0 = \frac{pqz^2}{d^2}$ = 185, the competed sample size it was 185 respondents however, the actual sample respondent considered in this survey were 156 respondents. Because 15% of the respondents were not responded the survey.

Based on the formula $n_0 = \frac{pqz^2}{d^2} = 185$, the competed sample size it was 185 respondents however, the actual sample respondent considered in this survey were 156 respondents. Because 15% of the respondents were not responded the survey.

Stratified Sampling

In the sampling method, different strata were selected. The selected strata consisted of a total of 156 consumers. From this, 5% representative of each stratum was taken for sampling. According to this, 32(20.5%) working in government offices, 7(4.5%) non-governmental farmers, and 117 (75%) farmers working in agriculture were included in the study.

The survey data is collected from a representative sample of a group, divided by the chosen research method. Using stratified sampling techniques. It was planned to ask 5% of the 3,100 targeted beneficiaries, i.e. 156 stakeholders, and the data analysis was conducted based on the data of 156 customers.

The selected criteria were included after assessing whether they were believed to be capable of measuring customer satisfaction. The questionnaire prepared for the study was first checked by the institute's study coordinator to pass the appropriate survey criteria.

Table 1: Stratified sample

S. No	Sample strata	Target sample size			Net sample size		
		Men	woman	Total	Male	woman	Total
1.	Government organization	33	5	38	28	4	32
2	Non-governmental organizations	7	1	8	6	1	7
3.	Farmers	119	20	139	100	17	117
	Total	159	26	185	134	22	156

Data source: Customer satisfaction survey (2020)

Data analysis

The gathered data was analyzed using both quantitative and qualitative data analysis techniques to conduct a detailed investigation and draw significant conclusions. Descriptive

method was used to analyze the data. In descriptive statistics, there was computation of mean, frequencies, percentages of customers' satisfaction. The data from FGD and key informant interviews were analyzed qualitatively and was used in the text to clarify the information to respondents' responses on items that was inquired. Quantitative data was analyzed using a data analysis statistical software package (SPSS).

Customer satisfaction index

Satisfaction index is a number that shows the degree of satisfaction that the agricultural research institute and centers provide innovated technology delivery service to the customers. It is the average score obtained by adding the value of the answers given by customers to the questionnaires and dividing it by the total number of alternative choices. Each of the questions in the questionnaire prepared to collect the data has its own contribution that is it generated the desired information.

Result and Discussion

In this study among 185 targeted samples (159 men and 26 women), 156 respondents (134 men and 22 women) were participated and responded the designed and structured customers' survey in the study area. The data was collected through structured questioners, key informant interview and focused group discussions.

According to the competed data result the age of the respondents was categorized in to four category the 1st category comprised of 62 (42%) participants, 2nd category comprised of 25 (16%) participants, 3rd category comprised 36 (23%) participants, the 4th category comprises of 16 (10%) and the 5th category comprised of 17(11%) participants. The socio-economic analyzed data result shower in the Table 2 below.

Table 2: Socio-economics characteristics

S. No	Characteristics	Category	Frequency (n)	Percentage (%)
1.	Sex	Men	134	86
		Woman	22	14
		Total	156	100
2.	Age	25-30	62	40
		31-35	25	16
		36-40	36	23
		41-45	16	10
		More than 46	17	11
		Total	156	100
3.	Education level	Uneducated	27	17
		Grades 1-8	72	46
		9th-12th grade	22	14
		Diploma	20	13
		Degree	11	7
		Masters	3	2
		PhD	1	1
		Total	156	100

Data source: Customers' satisfaction survey (2020)

As shown in Table 2 above, in this customer satisfaction survey, participants were asked about their education level. According to their responses, 27 (17%) were uneducated, 72(46%) of them were found at 1-8th grade education level, 22(14%) of the respondents` education level was 9-12th grade, (13%) were achieved diploma, and 11(7 %) were BSc. degree holders. The results of the study indicated that 3 (2%) of the participants had a master's degree and (1%) a doctorate degree.

Analyzed Customer satisfaction index

Regarding the cost of the service provided by the Southern Agricultural Research Institute together with the research centers, 26% said it was very high and 42% said it was fair. And those, who responded, that it is sufficient or reasonable were 21% and 11% respondents said it is low. In general, the price of the service delivered was fair that indicated the service was not affordable to most of the farmers and stakeholders.

Agricultural research centers were facilitated access to technology by knowing to what extent adopted and introduced technologies emerging from various crop, animal and natural resource science researches are problem-solving for the farmers and emerging, introduced adaptable technologies and advisory services as well as capacity-building training. Being close has an important role, so according to the research conducted based on this, 35% responded as very close, 43% responded as average, 17% responded as far, and 5% stated as very far.

Concerning the service delivery schedule, 53% always obtained on the scheduled day and provided the required service. 33% of them are often present on the day of their appointment. 11, %, many times they don't get the service on the day of the appointment. 3%. Most of the time appointees were not available on the appointed date, so farmers returned back to get the services. In general, most of those, who responded regarding to the appointment, always arrive on the day, they have given an appointment and provide the required service

Regarding prompt response in the service provided: 44% get service based on the standard, 38% respond more or less. 13% often respond late, 5% do not respond quickly. In respect to the quality of service provided by the institute was rated as 33% high, 49% very high, 17% as low, and 1% was very low, respectively.

The service quality delivered by the research centers as respondents indicated that 33% said they got high quality, 49% average quality, 17% low quality and 1% very low-quality service.

Regarding the availability of services provided by different research directorates of the institute (crops, animals, natural

resources and socioeconomic) in a center, 35% said that they get all services in a center, 28% said that they get most services in a center, 29% said that they get most services in different places, and 8 % said that they get all services in different places.

Concerning the clarity of service conditions, 49% of the respondents said, they are all clear and known, they are. Most of them are obvious in response. 31% answered that most of them are not clear, 17% said that they are not clear at all and 3% said that they are not clear at all. Most of the respondents regarding to the conditions of service are clear, all are clear and known.

Efficiency of service delivery in the institute was 36% who responded that it is very efficient. 49% of respondents said it was slow, 14% said it was inefficient, and 1% said it was inefficient. Service delivery efficiency looking at the answer given, it can be understood from the information obtained that is efficient.

In terms of accepting and correcting mistakes, they always accept feedback and correct their mistakes 49% that they occasionally accept feedback and correct their mistakes 38%, that they occasionally accept comments and do not correct their mistakes 12%, so they are not always open to feedback. Centers under the Institute They always accept feedback and correct their mistakes. Most of the sample data can be understood from the responses.

In respect to establishment of a compliant system the respondents were responded as 49% very highly there is established compliant system, 29% respondents gave there is high compliant system, 19% respondents replied as low compliant system and 3% of them indicated that there is very low compliant system.

In all research centers was asked whether the services provided are free from rent collection and 64% said that the service is provided to everyone without discrimination and intercession, 25% said that it is often provided without discrimination and intercession, 10% said that most of the services are provided by relatives or money, and the remaining 1% cannot get services, if it is not by relatives or money.

Table 3: Customer satisfaction Index

Parameter	4	3	2	1	Total	mean	Percent	Level
Service price	40	66	33	17	156	2.83	70.7	Satisfactory
Access to services	55	67	26	8	156	4.08	101.9	Very high
Appointment compliance	83	51	17	5	156	3.36	83.9	High
Fast responsiveness	68	59	21	8	156	4.2	104.9	Very high
Quality of service	52	76	26	2	156	3.14	78.4	Satisfactory
Get service at one center	55	49	45	13	156	4.05	101.1	Very High
Conditions of service are clear	76	49	27	4	156	3.26	81.4	High
Service delivery efficiency	56	77	22	1	156	4.21	105.1	Very high
Accept feedback & comment	77	59	18	2	156	3.35	81.2	Satisfactory
Creation, system execution & complaint	77	46	30	3	156	4.26	106.4	High
Rent-free service	100	39	16	1	156	3.53	88.1	High
Professional ethics	89	48	16	3	156	4.43	110.6	Very high
Professional qualification	70	75	10	1	156	3.37	84.2	High
Discussions with stakeholders	56	74	15	11	156	4.12	102.9	very high
Involving women and youth	55	59	36	6	156	3.04	75.9	Satisfactory
Total	1009	894	358	85	2346			
General Score						3.682	91.78	High

Data source: Customer satisfaction survey (2020)

Concerning the ethics of the professionals who provide services, the professionals are completely humble in their work. 57% of the professionals have enough self-effacement in their work, 31% responded that they are moderately self-effacement, 10% of them indicated low level of professional ethics and 2% responded that professionals show very low level of ethics in their work. Therefore, the ethics of the professionals who provide services in the office are completely self-effacement. Most of the sample data can be understood from the responses.

The level of competence of professionals regarding very high 45% is resonant. The answer was 48% high, 6% low and 1% very low. So, the service provided by the expertise of the researcher professionals. It could be seen as high.

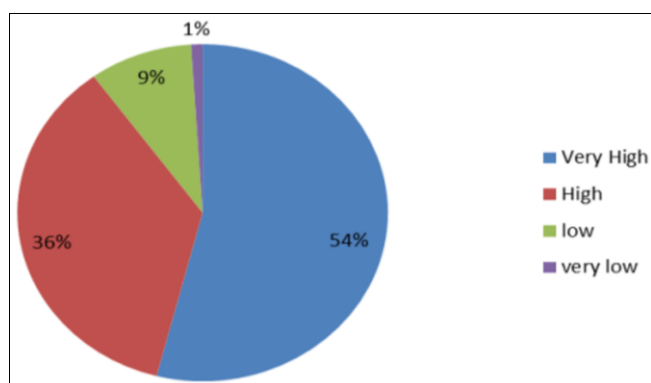
Centers under the Institute 36% said that there is regular discussion, 47% said that there is occasional discussion, 10% said that they do discussion at certain times, and the remaining 7% responded that they have never had a discussion. Thus, from the total data, it shows that most of the customers chat occasionally.

In terms of involving women and young people, 35% involved at high level, 38% involved at very level, 23% involved at medium and 4% answered at low level. Even though most of the time the institute's service delivery was found partly gender inclusiveness, it needs considerable commitment and effort to attain equality of gender segments in agricultural research technology dissemination service delivery.

Based on the table above, the result calculated defriend as follow:-

- A very high customer satisfaction rating of 4-3.8 (95-100⁺);
- A high customer satisfaction rating of 3.2-3.8 (95-80);
- A satisfactory customer satisfaction rating of 3.2-2.4 (out of 80-60);
- Below 2.4 (below 60) indicates a low customer satisfaction rating.

The Pie chart graph that shows the general segments of customers' satisfaction level in find below:



Data source: Customer satisfaction survey (2020)

Fig 1: Pie chart graph showing customer satisfaction level

Conclusion

The Agricultural Research has been fulfilling its responsibility and obligation to provide efficient and effective services to the farmers. It is appropriate to check whether the research has provided the service according to the set standard and to satisfy the stakeholders by service adjustments, if there are any gaps.

According to the analysis of the data obtained in the places where the customer satisfaction measurement survey was carried out in services provided and delivered by Areka, Arba-minch and Bonga agricultural research centers were high (customer satisfaction). The index is 3.21 or 80.2%. The service delivery time was conformable to the farmers and to the provision of agricultural technology. This means, the research centers, where the study was conducted, confirmed that they worked with better service delivery and attention. It is necessary to work hard to achieve the highest level of customer satisfaction by doing better in the future.

In addition, in order to find out the level of satisfaction with the services provided by research centers, the data was analyzed based on the required parameters. Thus, access to services might be understood from the answers given by respondents, regarding accessibility of the service of the farmers' satisfaction level was 43%. In the future, accessibility of improved agricultural technology to the farmers in the region should be expanded.

The satisfaction level of service quality was 78.4%. In order to further improve the quality of the services, all the research directors should examine their shortcomings, and design a better strategy to fill the quality gaps as soon as possible.

In terms of correcting the inappropriate service delivery by accepting the response of the farmers, the satisfaction level is 81.1%. It was appropriate for the research directorates to correct mistakes by receiving suggestions. It is necessary further improvement of the current level of satisfaction.

According to the analyzed data result the provision of rent-free services satisfaction level was 88.1%. The result was encouraging, so it is necessary to maintain this result and do more to attain very high level of farmers' satisfaction.

A very high score of 110.6 was recorded for the researchers and service providers' professional ethics. Cognizant that an incentive system should be established for them to be able to fight against rent-seeking and to continue the progress achieved by serving more sincerely and honestly. It might be understood from the information gathered and analyzed regarding professional competence; the result is 84.1% at high level.

Recommendations

- The agricultural research centers service delivery mechanism enhances improvements of farmers' technology adoptions and utilization, and rural household livelihoods. Hence the government should strengthen the delivery of improved agricultural technology and practices to farmers in the study areas.
- Farmers training on innovated technology should be increased to adopt, utilize and disseminate improved agricultural technology and practices to farmers who are residence beyond the research centers.
- Sometimes farmers did not get the appropriate agricultural services on time, hence the research organization and government should enhance the appropriate time to disseminate the required technology and practices.
- The improved agricultural technology and practice delivery services of farmers are unsatisfactory to farmers because of their low purchasing power. Thus, the research institute and the government seek ways to improve farmers' purchasing power through provision

and adoption of farm income generating technology.

- The agricultural technology and practices service delivery is no gender responsive that is the service is found at the satisfactory level. Hence the government the research institute should enhance the participation of women, girls and boys equally with men farmers in the study area.
- The complaints of the customer and stockholders should be listened, recorded the details and discussed on options to fix and eliminate the problem and then act quickly.

Service quality found at satisfactory level, hence the government; agricultural research institutes and centers should enhance the quality-of-service delivery to customer and stockholders.

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