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ON THE PERFORMANCE OF LOCAL FARMER TECHNICIANS IN RICE-PRODUCING AREAS IN EASTERN VISAYAS, PHILIPPINES

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Abstract

The study determined the rice farmers' perception of the performance of Local Farmer Technicians (LFTs) in selected major rice-producing areas in Eastern Visayas. It also determined the extent of effectiveness and impact of LFTs in delivering the services and support needed by the farmers. The relationship between the rice farmers' profile and the extent of effectiveness and impact of LFTs was also observed. Descriptive-correlational research design and purposive sampling were used to cover 18 municipalities in six provinces of Region VIII reaching a total of 450 farmers. Results revealed that rice farmers were satisfied with the LFTs' services and overall performance. Farm status, other sources of income, and the number of farming years have significant relationships with the effectiveness of LFTs. All profile variables, except other sources of income, were not significantly associated with the impact of LFTs. Other sources of income were significantly associated with the impact of LFTs on farmers' farming practices and knowledge. All profile variables, except estimated family income were not significantly associated with the impact of LFTs' on crop performance. Overall, LFTs were perceived by rice farmers as knowledgeable, very informative, and competent. However, few farm visits and failure to follow the scheduled meetings are the major drawbacks. Hence, it is highly recommended that the Department of Agriculture (DA) should increase the incentives and provide funding to expand targeted municipalities and collaborate with Agricultural Training Institute (ATI) and PhilRice to design a season-long training suitable for LFTs.

Key words**:** *rice farmers, Local Farmer Technicians (LFTs), effectiveness, impact, rice crop performance*

INTRODUCTION

The government's plan to attain food staples sufficiency in the Philippines is to enhance the efficiency and quality of extension services provided to rice farmers [3], [4]. The main organizations offering these services, which are designed to hasten the adoption of modern farming techniques and technologies are the Local Government Units (LGUs) [9]. More extension workers are required because the small number of agricultural extension technicians is insufficient to reach a sizable number of farmers [5]. At the moment, there are more than 150:1 rice farmers to LGU technicians. More farmers will be able to make use of new and improved technology as well as other farm support interventions by helping to expand the current extension workforce of LGUs through the Local Farmer Technicians (LFT) Program [9].

The agricultural extension technician is responsible for providing the information and knowledge required for a farmer to understand and select a particular innovation, as well as for communicating that information to the farmer. In this role, the agent is seen as an extension agent assisting farmers in applying knowledge and serving as a channel for knowledge, the majority of which is technical [5]. The technical know-how and data that the agent needs to convey to the farmers are given to him together with official training for this role [20]. The main challenge facing agricultural extension in the twenty-first century is developing low-cost, sustainable service delivery systems that go beyond simply sharing knowledge to actively support farmers as the key change agents in their communities [1]. Farmers' learning and creative capacities, as well as their potential to organize for more fruitful production and

marketing and to demand extension services, must all be enhanced by these initiatives [17].

An extension agent can benefit greatly from the cooperation of local leaders in many ways [5]. In addition to acting as a point of contact between the agent and the farmers, they can take on specific responsibilities in the agent's absence, aid in setting up local extension organizations, and directly contribute to the dissemination of new ideas and practices by putting them to work in their fields. The extension agent will be able to contact considerably more farms with their assistance than he could if he did it alone. Collaborating with local leaders fosters stronger relationships with farmers in the area, boosts their trust in the extension service, and increases their readiness to take part in outreach initiatives [16]. The Department of Agriculture (DA) and Local Government Units (LGUs) consider rice farmers as active partners in the LFT Program, working together to promote and disseminate rice farm technology. The long-standing requirement for farmer-to-farmer extension services is another goal of this extension strategy. Under the LFT Program, skilled and knowledgeable rice farmers are brought in as collaborators and hands-on participants in the advancement of contemporary post-production and production techniques. The scheme will be put into place in the municipalities with low-yielding performance under the irrigated lowland rice fields [18].

To assist agricultural extension workers assigned in LGUs in developing and improving modern technologies for rice cultivation and post-production, the LFT Program aims to establish a core of competent and experienced rice farmers [18]. In general, this study aimed to evaluate how well LFTs in Eastern Visayas support and develop contemporary post-production and rice production technologies, working in tandem with LGU-based agricultural extension workers. Specifically, the study tried to: (1) determine the extent of effectiveness of LFTs in delivering the services and support needed by the farmers; (2) find out the impact of LFTs on the rice farming knowledge and practices and crop performance of the farmer respondents; (3) determine the relationship between the respondents' profile and the extent of effectiveness of LFTs in delivering the services and support needed by the farmers; (4) find out the relationship between the respondents' profile and the impact of LFTs on their rice farming knowledge and practices crop performance; and (5) determine the obstacles and difficulties local farmer technicians encounter when providing extension services to the community's rice farmers. The study has assessed the effectiveness of LFTs in disseminating information, providing technical assistance, the impact of their services on rice yield and income, adoption of new rice technologies, and identification of challenges they face.

MATERIALS AND METHODS

Research Design

A descriptive-correlational research design was used in the study employing a quantitative method through a survey to assess the performance of LFTs as reinforcement of LGU-based agricultural extension workers in Region 8. Selected farmers who were students of the LFT Program per municipality in the identified study sites were included in the survey.

Locale, Respondents, and Sampling

The study was conducted in the major rice-producing areas in Eastern Visayas, where there is an existing LFT who is qualified and trained. The study covered six provinces in Region VIII (Eastern Visayas), namely; Northern Samar, Eastern Samar, Biliran, Leyte, Southern Leyte, and Samar province. Three municipalities per province having the largest irrigated rice areas were selected. Ormoc City, Abuyog, and Carigara were selected for the Leyte province, while Southern Leyte, Hinunangan, Saint Bernard, and Hinundayan were included in this undertaking. For Biliran province, Naval, Caibiran, Almeria, and Samar province, Calbayog City, Basey, and Gandara. For Eastern Samar, the three municipalities to include were Dolores, Balangkayan, and

Llorente, and for Northern Samar, Catubig, Catarman, and Las Navas (Map 1).

Map 1. Eastern Visayas, Philippines.
Source: [11].

Purposive sampling was used in selecting the covered municipalities per province based on the size of the irrigated rice area, thus the top three municipalities with the largest area were included. The study used total enumeration to obtain the number of farmer respondents, and since there are 18 municipalities under study, a total of 450 farmer respondents were involved in the study (Table 1).

Table 1. Farmer respondents.

Province/municipalities	Irrigated rice area (in hectare*)	No. of farmers
LEYTE		
Ormoc City	4,227.50	25
Abuyog	3,517.25	25
Carigara	2,726.50	25
SOUTHERN LEYTE		
Hinunangan	1,151.00	25
Saint Bernard	1,119.01	25
Hinundayan	931.00	25
BILIRAN		
Naval	1,873.00	25
Caibiran	1,852.00	25
Almeria	905.00	25
WESTERN SAMAR		
Calbayog City	1,133.88	25
Basey	647.00	25
Gandara	206.50	25
EASTERN SAMAR		
Dolores	1,485.00	25
Balangkayan	278.00	25
Llorente	206.50	25
NORTHERN SAMAR		
Catubig	449.17	25
Catarman	336.00	25
Las Navas	331.00	25
Total		**450**

Note: *2019 Validated Rice Area, DA-RFO8.
Source: Authors' computation (2024).

Research Instrument and Data Collection

The developed questionnaire prepared was used to gather data. To guarantee its applicability and that the questions are written in a way that farmers can understand, the questionnaire was pre-tested. A questionnaire was used to conduct facilitated interviews with the sample respondents to gather data for the survey. The questionnaire asked about personal details, interactions with local farmer technicians, expertise and practices related to rice farming, the yield, income, and quality of rice crops, as well as comments and general satisfaction.

Data Analysis

Descriptive statistics was used to analyze the data gathered such as means, frequency counts, percent, mean, median, interquartile range (IQR), and standard deviation were used for objectives 1, 2, and 5. It makes data presentation meaningful and comprehensible, which facilitates a more straightforward interpretation of the relevant data set. The following correlation coefficients were used for Objectives 3 and 4: Cramer's V coefficient was used to determine how strongly two variables are related to one another. The variables of interest should be categorical, with two or more unique values per category, to use it; As an alternative to computing the entire connection, contingency coefficients were utilized to determine whether an association exists between the data sets. Rank biserial coefficient was applied to quantify the correlation between a continuous variable and a dichotomous variable, or variable with two values; and Spearman rank coefficient was used to assess the direction and degree of correlation between two sets of data when sorted according to each of their respective quantities. This method helps determine the linkages between the data and the degree to which the measured results are affected by external factors.

RESULTS AND DISCUSSIONS

Profile of Farmers

Table 2 shows the profile of farmers in terms of sex, marital status, educational attainment, farm status, and other sources of income. The

data showed that a great majority of the farmers are male (60.2%) the rest are female (39.8%) and a majority of them are married (92.7%) and 6.9% are single. In terms of educational attainment, farmers are either elementary graduates (24.7%), High School level (17.6%), or High school graduates (37.1%). Only a few are college graduates (4.4%) and college level (9.3%). For the farm status, most of the farmers are tenants (60.2%), 34.2% own their farms, and 5.6% are leasing their farms. More than half (52.4%) of the farmers do not have other sources of income other than income from rice farming.

Table 2. Profile of rice farmers.

Profile variables	No. of farmers	Percent (%)
Sex		
Female	179	39.8
Male	271	60.2
Marital Status		
Single	31	6.9
Married	417	92.7
Separated	2	0.4
Educational Attainment		
Elementary Level	31	6.9
Elementary Graduate	111	24.7
HS Level	79	17.6
HS Graduate	167	37.1
College Level	42	9.3
College Graduate	20	4.4
Farm status		
Owner	154	34.2
Tenant	271	60.2
Lease	25	5.6
Do you have other sources of income aside from regular income?		
Yes	214	47.6
No	236	52.4

Source: Authors' computation (2024).

Table 3 presents the profile of farmers in terms of age, number of years in rice farming, and land area planted with rice. Results show that every rice farmer in Eastern Visayas has an average age of 55.6 years old and has been in rice farming for 27.9 years. More than half of the rice farmers have an estimated monthly income of at least PhP5000.00. In terms of ecosystem tilled, out of 450 farmers, 446 of them or about 99% are cultivating lowland rice farms with an area of one hectare, on average. Only one is cultivating an upland rice farm with an area equal to 0.5 hectares. Nine farmers are cultivating rainfed rice farms with a median area of 0.5 hectares.

Table 3. Profile of farmers in terms of age, number of years in rice farming, and land area planted with rice.

Variable	Mean/ Median	Std. Deviation/ IQR
Age (N=450)[1]	55.6	10.3
No. of years in rice farming (N=450)[1]	27.9	11.9
Estimated monthly family income (N=450)[2]	5,000.0	3,000.0
Area of land planted with rice (Lowland, N=446)[2]	1.0	1.0
Area of land planted with rice (Upland, N=1)[2]	0.5	NA
Area of land planted with rice (Rainfed, N=9)[2]	0.5	0.75

1=Mean and SD were used since the data distribution is symmetrical.
2=Median and IQR were used because the data distribution is skewed.
Source: Authors' computation (2024).

Effectiveness of Local Farmer Technicians (LFT)

The frequency of farmers' interaction with LFTs, services, and support provided by LFTs, and LFT's efficacy in providing these services is shown in Table 4. Results showed that almost all (99.23%) of rice farmers in Eastern Visayas had interactions with LFTs and these interactions occurred mostly either on a weekly (46.7%) or monthly (39.1%) basis. Interactions may be in the form of farm visits, cellphone calls, text messages, and training workshops. The majority of the targeted municipalities of this program have conducted an information drive spearheaded by the Department of Agriculture – Regional Field Office 8 (DA-RFO 8) in coordination with the Municipal Agriculture Office informing farmers that their municipality has two trained local farmer technicians to assist in the promotion of modern rice production and post-production technologies in the municipality [15], [13], [19]. In the presence of LFTs in the municipality, regular interaction occurred between the farmers and LFTs. Moreover, the LFTs are focused on the improvement of the yield and income of the rice farmers, thus creating an impact on the lives of the rice farmers. This result corroborates with DA-RFO 8 year-end reports that showed records of frequent visits of the LFTs to the rice farmer farms [10].

Table 4. Farmers' interaction with Local Farmer Technicians (LFTs), services and support provided by LFTs, and LFTs efficacy in providing these services.

	No. of farmers	Percent (%)
Have you had any interactions with Local Farmer Technicians (LFTs) as a part of your province's rice enhancement program?		
Yes	447	99.3
No	3	0.7
How often do you interact with LFTs?		
Daily	6	1.3
Weekly	210	46.7
Monthly	176	39.1
Rarely	55	12.2
Never	3	0.7
Support services provided by LFTs		
Advice on managing diseases and pests (N=450)	449	99.8
Crop planting and maintenance instructions (N=450)	448	99.6
Advice on irrigation and water management (N=450)	441	98.0
Suggestions for enhancing soil fertility (N=449)	417	92.9
Advice for post-harvest treatment and storage(N=449)	391	87.1
Information on markets and value-added products (N=450)	371	82.4
Local Farmer Technicians' efficacy in providing the services and support		
Not effective	1	0.2
Slightly effective	18	4.0
Moderately effective	83	18.4
Effective	270	60.0
Very effective	78	17.3

Source: Authors' computation (2024).

Moreover, Table 4 shows the LFTs' efficacy in providing services and support to farmers. The majority of the farmers believed that LFTs are effective (60%) and some said very effective (17.3%) in providing them the necessary support services. This indicates that there is a considerable degree of trust and confidence in the expertise and support offered by these local experts to the rice farmers. In [5], it is mentioned that extension agents are one way to help develop strategies for delivering information effectively, comprehending the information needs of clients, and removing obstacles to information consumption. The researcher stressed that LFTs can communicate in farmers' common language and have a greater understanding in terms of mannerisms, farming practices, and farming needs of the farmer [5], [17], [7]. This clearly shows that the "fellow farmer" is the driving force behind the acceptance of innovations and plays a crucial role in increasing awareness of the farmers [8]. The presence of LFTs likely enables farmers to adopt and implement suggested practices, resulting in favorable outcomes in their farming operations.

The top four most common services provided by LFTs are providing advice on disease and pest management (99.8%), instructions on crop planting and maintenance (99.6%), providing advice on irrigation and water management (98%), and providing suggestions on enhancing soil fertility (Table 4). The two less popular services are giving advice on post-harvest treatment and storage (87.11%) and providing information on markets and value-added products (82.4%). Most of the farmers encounter pest and disease problems in their farms, this is one of the most critical problems they face in rice farming. In order to ensure that the issue was caused by pest damage and not by another factor, the first and most important stage in any pest is to seek advice from the LFT on how to solve the conditions of the crop.

The report of the DA-RFO 8 validated this result that rice farmers' number one problem is pests and diseases. Inaccurate pest identification leading to incomplete knowledge about a pest is the most common reason for unsuccessful pest control efforts. For instance, in a part of Leyte Province, farmers are facing tungro disease spread by leafhoppers. This disease causes stunted growth, produces fewer tillers, and yellowish leaves in rice crops. Worried about their harvests, farmers want advice from our LFTs on how to manage this disease to protect their crops. Once the pest has been identified by the LFT, they can begin researching its life cycle, behavior, and the factors that contribute to its development [15],[14]. This includes exploring preventive measures and effective control strategies [2].

The farmers seek advice on crop establishment and maintenance from our LFTs because crop maintenance practices must be done promptly and it depends on crop growth stage, soil, crop, and weather conditions [18]. The farmers must adhere to the procedures of crop establishment, land preparation, and the use of premium seeds

of a variety that is advised. Likewise, the LFTs were asked for advice on irrigation and water management because the rice crop must have an adequate amount of water to promote stronger plant vigor, improved nutrient absorption, consistent growth, control of weeds and snails, promote ripeness, and enhanced farmer operations efficiency [5], [18]. The suggestions on enhancing soil fertility were sought from our LFTs because they guarantee fulfilment of the crop's potential yield. Nutrients required by the crop in which fertilization fills the discrepancy between what crop requires and what is presently found in the air, water, and soil at the moment [2], [12].

The respondents highlighted that they ask for the least advice from LFTs regarding post-harvest treatment and storage, although it's crucial to know how to manage correctly in drying, cleaning, and maintaining grain quality during storage. The way farmers manage their fields and handle rice after harvesting affects the quality and quantity they achieve. It all starts with decisions like which variety of rice to grow and continues with actions like planting, crop establishment, harvesting, drying, and milling [6], [10]. The farmers showed little interest in seeking information from our LFTs regarding markets and value-added products. However, they were encouraged to process their value-added products to gain more benefits from trading and value-added operations. Many smallholder farmers, taking inspiration from past mistakes, have adopted a new way of thinking that involves less dependence on government assistance and no longer selling their rice to middlemen [16]. It remains challenging for smallholder farmers to transition into entrepreneurs and compete in the global trading landscape. Many factors persistently hinder their capacity to broaden their involvement in the demand side of the supply chain, leading to a reluctance to seek credible advice. These findings suggest that post-harvest management and storage services market information and value-added operations were not a top priority for rice farmers. They showed less interest in these areas because their primary focus was on establishing healthy crops that lead to higher grain yields.

Impact of Local Farmer Technicians on Rice Farming

Table 5 shows the impact of LFTs on farmers' knowledge and techniques for rice cultivation which resulted in all farmers (except one) having altered their rice cultivation method after their interactions with the LFTs. The changes that farmers instituted in the farms after their interactions with LFTs were improved land and planting preparations and practices (31.8%), improved fertilization and use of organic fertilizer (20.2%), improved water management (19.8%), improved pest management (14.9%), use of technology and mechanization (7.9%), and use of quality seeds and proper seed germination procedure (5.8%). These alterations demonstrate farmers' receptiveness to extension assistance, their adoption of sustainable farming methods, and their dedication to raising agriculture's productivity, profitability, and resilience. This implies that the farmer's adoption of the technology will most likely be assimilated and implemented when the benefits of implementation are quickly realized [2], [5], such as the increase in yield and income from rice production. Suitable agricultural methods were the options supportive of the farmers' success and helped the agriculture sector become more sustainable.

Almost all (99.6%) farmers observed that their income from rice production has increased from the knowledge and practices gained from their interactions with LFTs. Several farmers (38.7%) reported that their income has increased by 20-39%. About 33.6% of the farmers reported an increase of 40-59% of their income from rice production. This overwhelming affirmation of income growth provides proof of the usefulness and efficacy of the extension services provided by LFTs. The LFTs' existence and expertise in rice production as a partner for change is convenient to farmers as they are not hesitant to seek advice about crop production if in case they encounter a challenging situation [17]. This underlines how important extension programs are in filling knowledge gaps, encouraging the use of new technologies, and strengthening farmers' resilience in the face of

changing obstacles to increasing rice yield of rice that results in higher income [5], [6].

Based on the data, 34% of farmers believed that LFTs have a moderate impact on their knowledge and techniques in rice cultivation, while the majority of farmers reported that LFTs have either a significant impact (45.6%) or very significant impact (16.0%) on their showed knowledge and techniques in rice cultivation. All of the LFTs have expertise and understanding in rice cultivation because they achieved hands-on experience in rice farming. Besides, LFTs have firsthand knowledge of the issues encountered in the field, so they can impart to farmers easily [7].

Table 5. Impact of LFTs on farmers' knowledge and techniques for rice cultivation.

	No. of farmers	Percent (%)
After interacting with LFTs, have you altered your methods of rice cultivation in any way?		
Yes	449	99.8
No	1	0.2
Changes made in rice farming after interaction with LFTs		
Improved land preparations and planting preparation and procedures	143	31.8
Improved Fertilization	91	20.2
Improved water management	89	19.8
Improved Pest management	67	14.9
Use of technology and mechanization	34	7.6
Use of quality seeds and proper seeds germination procedure	26	5.8
Did your income from rice production increase?		
Yes	448	99.6
No	2	0.4
Percentage increase in income from rice production (Median = 30%, IQR=30%)		
Less than 20%	64	14.2
20-39%	174	38.7
40-59%	151	33.6
60-79%	28	6.2
80% and above	33	7.3
Impact of LFTs on farmers' knowledge and techniques for rice cultivation		
Slight impact	16	3.6
Moderate impact	153	34.0
Significant impact	205	45.6
Very significant impact	76	16.9

Source: Authors' computation (2024).

Farmer views of the impact are positive, indicating that farmers appreciate the guidance, advice, and technical assistance provided by LFTs in addressing their specific needs and challenges.

Table 6 presents the impact of LFTs on rice crop performance and LFTs' overall performance in making changes in farmers' rice yield or quality was observed by almost all (99.6%) of farmers after their interaction with LFTs. Of these changes, 96.7% are increased in yield and good quality of the produce (3.3%).

Table 6. Impact of LFTs on rice crop performance and LFTs overall performance.

	No. of farmers	Percent (%)
Have you observed changes in rice yield or quality since working with LFTs?		
Yes	448	99.6
No	2	0.4
Changes in rice crop performance that occurred since working with LFTs		
Higher yield	433	96.7
Good quality produce	15	3.3
Impact of LFTs on rice crop performance		
No impact	0	0.0
Slight impact	15	3.3
Moderate impact	124	27.6
Significant impact	223	49.6
Verysignificant impact	88	19.6
Farmers' overall satisfaction with LFTs		
Very satisfied	108	24.0
Satisfied	321	71.3
Neutral	20	4.4
Dissatisfied	1	0.2
Very Dissatisfied	0	0.0

Source: Authors' computation (2024).

The majority of the farmers reported that either LFTs have a significant impact (49.6%) or a very significant impact (19.6%) on rice crop performance. These results show that LFTs are essential for enabling gains in rice crop performance, which raise yields and improve product quality. The effectiveness of extension interventions in promoting sustainable agricultural practices, enhancing crop management techniques, and alleviating yield-limiting variables is indicated by positive changes in yield and quality [16].

The majority of the rice farmers (71.3%) indicated that they were satisfied with the services provided by LFTs and 24% stipulated that they were very satisfied with the services of LFTs. The findings demonstrated how effective extension programs are in satisfying farmers' needs, providing useful support, and encouraging productive rice farming methods. It also demonstrated how contented the rice farmers were in the delivery of extension services by the LFTs. High satisfaction ratings prove that extension services have a positive

impact on farmers' empowerment, new perceived ideas, and agricultural output advancement [5]. For farmers who responded neutral (4.4%), either they may be satisfied or dissatisfied with the LFT's overall performance could be attributed to their minimal interactions with the LFTs.

Correlation Analysis

Table 7 depicts the relationship between farmers' profiles and the extent of effectiveness of LFTs in delivering services and support needed by the rice farmers. Based on the results, the age, sex, marital status, educational attainment, and estimated family income of farmers were not significantly correlated or associated with the effectiveness of LFTs in delivering services and support needed by the farmers. This means that younger and older farmers both male and female, reported almost similar ratings on the extent of effectiveness of LFTs. Being single or married or separated has nothing to do with the extent of effectiveness of LFTs. It is also reflected in the data that a higher level of education of farmers does not always imply a higher rating on the effectiveness of LFTs. However, regardless of family income, farmers have similar ratings on the effectiveness of the LFTs.

The data relative to farm status, other sources of income, and the number of years in farming have significant relationships with the effectiveness of LFTs in delivering services and support needed by the rice farmers. It was observed that land owners and tenants gave relatively higher effectiveness ratings than those farmers who lease their farms. The result construed with the research conducted in [6], it has been observed that land ownership significantly influences the productivity and technical efficiency of rice farmers in the Philippines, including their interaction with extension agents. Specifically, land ownership exerts a notable impact on technical efficiency, leading to a decrease in the technical efficiency levels among leasehold farmers when compared to land owner-operators. It is worth noting that elevated rental rates for ricefields may potentially lead to a decline in rice productivity and technical efficiency. The rice farms that were more independently owned and tenanted were more likely to adopt technologies to increase agricultural production and earn more income. The farmers with other sources of income gave relatively lower effectiveness ratings than those without other sources of income. In [1] and [6], it is portrayed that farmers with another source of income seek to reap financial rewards that are more likely to have relatively large-scale operations.

This is because small-scale farmers continue to struggle with limited funding. Farmer with lower income tends to have a lower level of understanding. Being in the low-income category greatly affects their financial outlook and decision-making.

The data reveals that farmers who have longer farming experience gave a higher effectiveness rating.

In [6], it is stated that farmers were more inclined to accept new agricultural technologies as they got older. They were much more inclined to adopt new technology if they had more training expertise.

Training experiences serve as a means of education, enabling farmers to grasp and become proficient in the application and financial worth of new technology while also encouraging the adoption of new technology by farmers.

Table 7. Relationship between farmers' profile and extent of effectiveness of LFTs in delivering services and support needed by farmers.

Profile Variable	Coefficient	p-value	Interpretation
Age[4]	0.0362	0.4436	Not significant
Sex[1]	0.1121	0.1296	Not significant
Marital Status[1]	0.0834	0.3738	Not significant
Educational attainment[1]	0.0933	0.7014	Not significant
Farm Status[2]	0.1247	0.0073	Significant
Estimated Family Income[4]	0.0568	0.2290	Not significant
Another source of income[3]	0.1211	0.0116	Significant
Years in rice farming[4]	0.1373	0.0035	Significant
Area (Lowland)[4]	0.0348	0.4616	Not significant

Note: Area for upland and rainfed were not included in the analysis due to very few observations; 1=Cramer's V coefficient; 2=Contingency coefficient; 3=Rank biserial coefficient; 4=Spearman rank coefficient.
Source: Authors' computation (2024).

As a result, the experienced farmers adopted the technology since they had previously evaluated the farming methods used over time.

The lowland area cultivated is not significantly associated with the effectiveness of LFTs in delivering services and support needed by the farmers.

This means that the area of the farm has nothing to do with farmers' rating of the effectiveness of the LFTs.

Tables 8 and 9 present the relationship between farmers' profiles and the impact of LFTs on farmers' practices knowledge and crop performance. Results showed that in terms of the impact of farming practices and knowledge, all profile variables, except other sources of income, were not significantly associated with the impact of LFTs on farmers' farming knowledge and practices. A non-significant association or relationship means that these farmers' profile variables have nothing to do with the ratings given by farmers on the impact of LFTs on farming practices and knowledge. Other sources of income were significantly associated with the impact of LFTs on farmers' farming practices and knowledge. This means that having or not having an extra source of income has something to do with the impact of LFTs. Farmers with an extra source of income tend to give relatively lower ratings to their extension agents than farmers who do not have an extra source of income. In line with the study in [5] and [6], it was reported that households that diversify their sources of income did a deliberate strategy to reduce risks and seize farm-promoting possibilities. The purpose of income diversification is to mitigate the impact of crop failures and economic hardships by managing risks and providing a cushion. They diversify their sources of income throughout the off-farm season to avoid becoming idle and identify their maximum labor impact of crop failures and economic hardships by managing risks and providing a cushion. This diversification of income necessitates the need to ask for advice from farm advisors such as LFTs. Thus, diversify their sources of income throughout the off-farm season to avoid becoming idle and to identify their maximum labor capability. As a result, income diversification promotes smallholder households' well-being and fights hunger and poverty.

Table 8. Relationship between farmers' profile and impact of LFTs on farmers' practices and knowledge

Profile Variable	Coefficient	p-value	Interpretation
Age[4]	0.0014	0.9758	Not significant
Sex[1]	0.0750	0.1121	Not significant
Marital Status[1]	0.0546	0.7203	Not significant
Educational attainment[1]	0.0735	0.1201	Not significant
Farm Status[2]	0.0878	0.1081	Not significant
Estimated Family Income[4]	0.0059	0.9015	Not significant
Another source of income[3]	0.1279	0.0066	Significant
Years in rice farming[4]	0.0616	0.1920	Not significant
Area (Lowland)[4]	0.0407	0.3888	Not significant

Note: Area for upland and rainfed were not included in the analysis due to very few observations; 1=Cramer's V coefficient; 2=Contingency coefficient; 3=Rank biserial coefficient; 4=Spearman rank coefficient.
Source: Authors' computation(2024).

Table 9. Relationship between farmers' profile andimpact of LFTs on farmers'crop performance.

Profile Variable	Coefficient	p-value	Interpretation
Age[4]	0.0181	0.7024	Not significant
Sex[1]	0.0235	0.6187	Not significant
Marital Status[1]	0.0623	0.6288	Not significant
Educational attainment[1]	0.0617	0.1924	Not significant
Farm Status[2]	0.0576	0.2226	Not significant
Estimated Family Income[4]	0.1199	0.0109	Significant
Another source of income[3]	0.0634	0.1792	Not significant
Years in rice farming[4]	0.0853	0.0706	Not significant
Area (Lowland)[4]	0.0146	0.7567	Not significant

Note: Area for upland and rainfed were not included in the analysis due to very few observations; 1=Cramer's V coefficient; 2=Contingency coefficient; 3=Rank biserial coefficient; 4=Spearman rank coefficient.
Source: Authors' computation (2024).

In terms of the impact on farming crop performance, data shows that all profile variables, except estimated family income, are not significantly associated with the impact of LFTs' on crop performance (Table 9). This means that these variables do not in any way influence farmers' rating of LFTs' impact on crop production. In other words, these variables have nothing to do with farmers' rating of LFTs' impact on crop production. On

the other hand, the farmers' estimated family income is significantly associated with their ratings on the LFT's impact on crop production. Farmers with higher levels of income gave higher ratings on LFTs' impact on crop production. They are consequently more open to implementing new agricultural technologies and stand to gain more from doing such undertakings [2], [7], [19].

Table 10 presents the identified strengths of LFTs in delivering extension services to rice farmers. These were the common strengths identified by the respondents during their interaction with the Local Farmer Technicians. According to the farmers, LFTs are knowledgeable, very informative, and competent (31.3%). It implies that LFTs are equipped with the knowledge and skills needed to give rice farmers insightful advice, as they were equipped with training and capacity building mostly extended by the Agricultural Training Institute and the Department of Agriculture [9].

Based on the data, 17.3% of the respondents mentioned that LFTs are considered the best teachers, demonstrating their efficacy in transferring information and skills to farmers. Since they were farmers themselves, they could easily adjust to the attitudes and behaviors of other farmers. The LFTs were reliable, willing to help, and approachable since they were farmers themselves (10.7%) as stipulated by the respondents. Thus, respondents admire their dependability, readiness to provide a helping hand, and approachability. This suggests that asking LFTs for assistance is convenient for farmers. Besides, the LFTs are active, friendly, helpful, and do actual field visits as responded by 9.1% of total respondents. The respondents appreciate the active participation, friendliness, helpfulness, and readiness of the LFTs to conduct field visits. This suggests that LFTs actively take part in helping farmers and offer practical support. Thus, the LFTs are a big help to farmers in terms of rice production (4.2%).

The shortcomings identified by the farmers in their LFTs are their few visits to the field and failure to follow the scheduled meeting with farmers (14.7%). The irregularities in LFT field visits and scheduled farmer meetings are a possible weakness in the extension services' delivery, which can result in reduced chances of receiving support and direction [12]. In [20], it is noted that extension workers typically move slowly and with limited mobility since they lack the operating capital to travel. Besides, there were limited extension agents to handle every agriculturally related issue in their communities, and they were forced to deal with unanticipated occurrences that came up before the field visit, which made it challenging for them to attend the scheduled meeting.

Table 10. Challenges and constraints encountered by LFTs in delivering extension services to rice farmers.

	No. of farmers	Percent (%)
Strengths		
LFTS are knowledgeable, very informative, and competent	141	31.3
LFTs are good teachers	78	17.3
LFTs are reliable, willing to help and easy to approach since they are farmers themselves	48	10.7
LFTS are active, friendly, helpful, and do an actual field visit	41	9.1
LFTS are a big help to farmers in terms of rice production	19	4.2
Shortcomings		
Limited resources	40	8.9
Seldom visits the field and does not follow the scheduled meetings with farmers	66	14.7
Needs more training to upgrade their knowledge	22	4.9
Challenges/Constraints		
The incentive received by LFT is not enough for transportation	32	7.1
Locations of LFT are in far-flung barangays and unfavorable road conditions	26	5.8
Too many locations to attend	18	4.0
Use of social media to reach LFT	13	2.9

Source: Authors' computation(2024).

Another shortcomings of LFTs are limited resources (8.9%) which means resource scarcity is a major drawback on the part of LFT. Furthermore, the LFTs need more training to upgrade their knowledge (4.9%), suggesting improving their expertise.

The challenges and constraints identified by the rice farmer are found in Table 10. The incentive received by LFTs was not enough for transport (7.1%) which ranked first and this shows that the expenses of LFTs' travel may not be sufficiently covered by the current remuneration structure, which could affect

how well they were able to reach the group of farmers. In [5], it is portrayed that the effectiveness of extension workers was significantly hampered by their slow and restricted mobility, presenting formidable obstacles in extending crucial support and services, especially to isolated barangays. To handle this challenge effectively, it is essential to strengthen programs implemented by the LGUs by facilitating the immediate transfer of financial resources. By doing so, we can mitigate reliance on funding from the national government and empower LGUs to address mobility constraints among extension workers including the LFTs more independently.

Secondly, the locations of LFTs were in far-flung barangays with unfavorable road conditions (5.8%). This illustrates the geographical obstacles that impede farmers in remote places from accessing extension services. Other constraints faced by LFTs were too many locations to attend (4%) and respondents mentioned that LFTs encounter difficulties as a result of having to visit too many places. This suggests a demanding workload, which can have an impact on the efficacy and caliber of extension services. Lastly, the use of social media to reach LFTs (2.9%) even if it's comparatively low, points to a possible chance to enhance outreach and communication tactics by using digital platforms to engage with farmers [5], [16].

CONCLUSIONS

The study's findings offer a comprehensive insight into the role and impact of Local Farmer Technicians (LFTs) in Eastern Visayas, particularly within the region's major rice-producing areas. It becomes evident that these technicians are not only perceived as effective by rice farmers but also deemed as providers of essential support services crucial for agricultural development. Furthermore, the study highlights a moderate yet discernible impact of LFTs on rice farming knowledge and practices among farmers. This impact is substantiated by observable alterations in cultivation methods and a noticeable increase in income derived from rice production, all of which point to the effectiveness of LFT interventions. Moreover, farmers report a significant positive impact on rice crop performance attributed to the services provided by LFTs, underscoring their satisfaction with the support received. Intriguingly, demographic factors such as age, sex, marital status, and educational attainment, alongside estimated family income, do not seem to significantly influence the effectiveness of LFTs, suggesting that other variables such as farm status, other income sources, and years of farming experience play more significant roles in determining the efficacy of LFT services. Additionally, the study underscores the importance of farmer perceptions in assessing the success of extension programs. These perceptions not only provide valuable feedback but also serve as indicators of trust and credibility within the farming community, thereby facilitating continuous improvement and adaptation of extension services to meet the evolving needs of farmers. However, the study also sheds light on challenges faced by farmers, such as limited incentives for LFTs, transportation issues in remote areas, and the need for better communication channels, including the utilization of social media. In general, the findings emphasize the vital role of LFTs in agricultural development and the necessity for ongoing support and innovation to enhance extension services and support for rice farmers in Eastern Visayas.

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