

INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY: APPLIED BUSINESS AND EDUCATION RESEARCH

2022, Vol. 3, No. 1, 90 – 101

<http://dx.doi.org/10.11594/ijmaber.03.01.10>

Research Article

The Extension Services and the Level of Productivity of Sugarcane Farmers in the Visayas, Philippines

Paulino A. Oñal, Jr.^{1*}, Rex J. Jinon² and Lloyd B. Martinez³

¹ Technical Education and Skills Development Authority Philippine TVET Competency Assessment and Certification System Talisay City, Negros Occidental, Philippines

² Extension Services Division Sugar Regulatory Administration Iloilo Mill District, Iloilo, Philippines

³ Extension Services Division Sugar Regulatory Administration San Carlos Mill District, San Carlos City, Philippines

Article history:

Submission January 2022

Revised January 2022

Accepted January 2022

*Corresponding author:

E-mail:

docpaulonal011260@gmail.com

ABSTRACT

Agricultural extension has been an essential strength in agricultural development and social innovation factor. The word “extension” in the modern meaning was first used which refers to informal public education in England in the second half of the 19th century (Demiryurek, 2014).

This descriptive method of research aid at determining the effectiveness of extension services and the productivity of sugarcane farmers in the Visayas, Philippines. The 400 sugarcane farmers randomly identified at the 10 locations in the Visayas area of the Philippines. An instrument used was the agency Extension Program Guidelines that measures productivity of the farmers, farm profile and extent of services, among others.

The result shows that the level of productivity of sugarcane farms in the Visayas area was high and a significant difference indicates on the level of productivity of sugarcane farms when grouped as to location. The level of productivity of sugarcane farming in the Visayas in terms of indicators such as size of farm, type of soil, land topography, average rainfall received, distance of the farm to the sugar mill, farming innovations, workers’ availability and expenses per hectare was at low productivity. Significant difference in the productivity of sugarcane farming at the different locations in the Visayas area in terms of size of farm, land topography, distance of the farm to the sugar mill, farming innovations, workers’ availability, and expenses per hectare except for the type of soil and average rainfall. The extent of services does not significantly related to the productivity. Relatively, there is no significant relationship existed between the extent of services and

How to cite:

Oñal Jr, P. A., Jinon, R. J. & Martinez, L. B. (2022). The Extension Services and the Level of Productivity of Sugarcane Farmers in the Visayas, Philippines. *International Journal of Multidisciplinary: Applied Business and Education Research*. 3 (1), 90 – 101. doi: 10.11594/ijmaber.03.01.10

farm profile. Farm profile does not influence the level of productivity, too.

Keywords: Extension services, Level of Productivity, Sugarcane Farmers, Farm Profile

Background

Sugarcane industry is one of the major dollar income industry in the Philippines. Despite of continuous extent of services to the farmers with an area of 10 hectares and below, the productivity however and profitability so to speak have not shown any remarkable increase. It is the medium and large sized farms, with an area of 10.01 hectares and above who have shown a profitable business. This means that small sugarcane areas is not so profitable, which is 79% of the total national area of 424,199 hectares. This study, aims determine the importance of extension services in increasing the productivity of small farmers at the different locations. Furthermore, it will focus on factors affecting productivity.

Methodology

The descriptive correlational study was use in this study. It focuses in measuring the extent of services to sugarcane farmer's areas and level of productivity among others, at the different locations in the Visayan area of the Philippines.

Research Environment

The Visayas area is composed of six provinces namely: Negros Occidental, Negros Oriental, Capiz, Iloilo, and Leyte.

Specifically the study covered the following (Mill Districts) locations, namely: SAC and VIC for northern portion of Negros Occidental; LAC and BIS for southern portion of Negros Occidental; TOL and BAS for Negros Oriental; ILO and CAP for Island of Panay; BOG for Island of Cebu; and, for Island of Leyte its ORM.

Respondents

The respondents of the study were the sugarcane farmers at the Visayan area with 10 hectares and below.

Employing the *Slovins* formula, out of 29,151 sugarcane farmers from the different locations mentioned-above, the sample size of 400 farmers were selected in random as the actual respondents of the study. The distribution of the respondents and the sample per location is indicated on Table 1.

Table 1. Distribution of respondents per location

Location	Number of farmers	Percentage
ILO	60	15.00
CAP	30	8.00
BOG	20	5.00
ORM	20	5.00
TOL	50	13.00
BAS	70	18.00
BIS	55	14.00
LAC	35	8.00
VIC	35	8.00
SAC	25	6.00
Total	400	100.00

Research Instrument

The instrument used to gather data was the agency Extension Program Guidelines with

eight parts. It include the measurement for the extent of services to farmers the farm profile and productivity among others.

Data Gathering Procedure

The researcher had personally administered the questionnaire to the respondents with the assistance of government Technical Personnel/Junior Agriculturist at the different Mill Districts in the Visayas. Upon retrieval of the accomplished research questionnaire, the researcher had tallied and analyzed the data using the Statistical Package for Social Sciences (SPSS) software under the closed supervision and guidance of the statistician.

Statistical Tool

In the analysis of data, the following statistical tools that were used in accordance with the nature of the specific problems raised and their corresponding hypotheses.

Frequency and percentage were used to describe the extent of services, profile of the sugarcane farmers' and of the farms.

The mean was used to determine the level of productivity. The mean was solved using the following procedures, the highest and lowest rating was determined first.

Then lowest score of one (1) was deducted from the highest rate of 5. The subtrahend was divided by five (5) which was adapted from Likert's rating. The addition of quotient started from the lowest rate and ended at highest rate. The numeral ranges and corresponding verbal description, 5.00 being the highest interpreted as "Very High" and 1.00 being the lowest interpreted as "Very Low".

One way Analysis of Variance (ANOVA) were used to determine the difference in the level of productivity, when respondents were grouped according to location of farm, average size of land holding, type of soil planted to sugarcane, topography of the area, average rainfall received and distance of farm to sugar mill.

Pearson r Moment Correlation was utilized to determine the significant relationship between the level of productivity, sugarcane farmers and farm profile.

Results and Discussion

The frequency count on the Distribution of Extension Workers

Tables 2 shows the profile of the agency personnel who are implementing the projects at the different location in the Visayas in terms of gender, age, level of education, number of years of service in the agency and the area covered of their responsibilities.

Out of the eight extension workers during the Crop Year 2016-2017 were dominated by male (f=6, 75%).

Age were dominated by those who are 36-60 years old (f=6, 75%) followed by those who are 35 years old and below (f=1, 12.50%) and 61 years old and above (f=1, 12.50%).

As to the educational attainment they were dominated by college graduates (f=4, 50%), followed by those with master's degree or with units in masteral (f=3, 37.50%) and only 1 has a doctorate degree (f=1, 12.50%).

Majority of them had rendered service for 21 years and above (f=6, 75%) followed by 11-20 years of service (f=1, 12.50%) and 10 years and below (f=1, 12.50%).

In terms of area of coverage, seven out of the eight extension workers covered 4,000 hectares and above (f=7, 87.50%) and only one implementer covered 3,999 hectares and below (f=1, 12.50%).

The findings imply that the extension workers were mostly male, older, experienced, and covered a wider area of responsibilities. This result contrasts with the findings of Annis (2016), when women first began to enter a workforce previously dominated by men, business across the globe were forced to examine gender in the workplace. Through the decades that translated into many organizations seeking equality among male and female employees, using the premise that equal means "same." Not only did different employees have the same intrinsic worth, but their sameness extended to how they relate to and lead others, think through ideas, and define success (Gallen, 2015).

Table 2. The frequency count on the Distribution of Extension Workers

Variables	Number of Extension Workers	Percentage
Gender		
Male	6	75.00
Female	2	25.00
Age		
35 years old and below	1	12.50
36 – 60 years old	6	75.00
61 years old and above	1	12.50
Educational Attainment		
College Graduate	4	50.00
Masters (or with units)	3	37.50
Doctoral	1	12.50
Length of Service		
10 years and below	1	12.50
11 – 20 years	1	12.50
21 years and above	6	75.00
Area of Coverage		
3,999 hectares and below	1	12.50
4,000 hectares and above	7	87.50

The socio distribution of the farmers

Table 3 revealed the farmers profile at the different location in the Visayas in terms of gender, age, level of education and number of years in sugarcane farming, Crop Year 2016-2017.

The findings reveal that out of 400 farmers involved in the study, there were more male (f=229, 57%) than the female (f=171, 43%) as shown on Table 3.

Furthermore, the findings show that the majority of the farmers were either medium aged or old 36-60 years old (f=204, 51%), young farmers aged 35 years old and below (f=41, 10%) and those aged 61 years old and above labelled as old (f=155, 38%).

As to the educational attainment, majority of the farmers were high school level (f=225, 56%) and the least had the vocational attainment (f=2, .5%).

For the number of years in sugarcane farming, most of the farmers were considered as medium for 11 to 20 years (f=173, 43%), and few belonged to old as 20 years and above (f=93, 23%).

The findings on Table 3, implies that the farmers at the different location in the Visayan area were majority male, aged 36-60 years old, high school level and have been in sugarcane farming for 11 to 20 years.

In connection with this finding, a study of Gallen (2015) which is using Danish matched employer-employee data, the paper estimates the relative productivity of men and women and finds that gender “productivity gap” is 8 percent implying that just under two thirds of the residual wage gap can be accounted for by productivity differences between men and women. The productivity gap was measured by estimating the efficiency units lost in a firm-level production function if a worker is female, holding other explanatory covariates such as age, education, experience, occupation, and hours worked constant. Furthermore, both mothers and non-mothers are paid less than men, but the (low) relative pay of mothers is completely explained by productivity for women without children (Gallen,2015).

Table 3. The socio distribution of the farmers

Variables	Number of Farmers	Percentage
Gender		
Male	229	57.00
Female	171	43.00
Age		
Young -(35 yrs old & below)	41	10.25
Medium-(36-60 yrs old)	204	51.00
Old-(61 yrs old & above)	155	38.75
Level of Education		
Elementary	87	21.75
High School	225	56.25
College	86	21.50
Vocational	2	00.50
Number of Years in Sugarcane Industry		
New -(10 yrs & below)	134	33.50
Medium -(11-20 yrs)	173	43.25
Old-(21 yrs & above)	93	23.25
Total	400	100.00

Extent of services rendered by the government to sugarcane farmers in the Visayas

The data in table 4 shows mean analysis on the extent of services to sugarcane farmers in the different location in the Visayas was at “moderate extent” (M=3.37). This means that the services of the agency extended to sugarcane farmers in the different location in the Visayas was at average.

Specifically, the respondents have “moderate extent” rating on the extent of services to sugarcane farmers in the different location in the Visayas. The Establishment of demonstration plots as show window to farmers (M=3.45). Conduct of regular consultations and/or field visits (M=3.42). Assist in the gathering of soil samples for analysis (upon request) (M=3.38). Monitor and gather data on production/ yield estimate at farm level regularly (M=3.35). Assist in the preparation of documents for SIDA Scholarship Project (M=3.35). Establishment / monitoring of block farms (M=3.34). Assist farmers in the computation of fertilizers to be applied based on the result of the soil analysis (M=3.32). Guide farmers in the application of lime for acidic soil (M=3.32). Advocate farmers to re-plant the missing hill to maximize production (M=3.32). Assist in the preparation of documents for SIDA farm-to-

mill road project (M=3.31). Distribution of brochures and other reading materials (M=3.31). Conduct regular monitoring/ survey on the incident of pests and diseases (M=3.30). The Conduct assessment of damage after the occurrence of natural calamities (M=3.30). Disseminate information on farm Mechanization (M=3.30). Disseminate information on socialized credit program under SIDA Law (M=3.29). Conduct of brix reading on the field during harvesting period (M=3.00).

Although respondents have “high extent” rating on the extent of services to sugarcane farmers in the different location in the Visayas in the following areas. Encourage farmers to practice environmental friendly method of farming, non-burning of trash after harvest (M=3.62). Establishment of HYV Nursery and distribution of planting materials thereafter (M=3.60). Continuous advocacy on the use of organic fertilizers/inputs (M=3.60). Conduct of seminars and trainings on Sugarcane Farm Management including the preparation of farm plan and budget (M=3.57).

The findings of the study implied that the sugarcane farmers received an extensive and moderately useful services rendered at the different location in the Visayas when sugarcane farmers’ responses on the extent of services were grouped as to their gender, age,

educational attainment, and the number of years in sugarcane farming.

In relation to the extension services, the agency funds its operations and projects/ services to all stakeholders of the industry from

their Corporate Budget (COB) and General Appropriations Acts (GAA) under the provisions of Sugar Industry Development Act of 2015 (Sugar Regulatory Administration, 2015).

Table 4. Extent of services rendered by the government to sugarcane farmers in the Visayas

Extension Services	Mean	Description
Establishment of HYV Nursery and distribution of planting materials thereafter	3.60	High Extent
Conduct of seminars and trainings on Sugarcane Farm Management including the preparation of farm plan and budget	3.57	High Extent
Establishment of demonstration plots as show window to farmers	3.45	Moderate Extent
Conduct of regular consultations and/or field visits	3.42	Moderate Extent
Assist in the gathering of soil samples for analysis (upon request)	3.38	Moderate Extent
Monitor and gather data on production/ yield estimate at farm level regularly	3.35	Moderate Extent
Assist farmers in the computation of fertilizers to be applied based on the result of the soil analysis	3.32	Moderate Extent
Conduct regular monitoring/ survey on the incident of pests and diseases	3.30	Moderate Extent
Assist in the preparation of documents for SIDA farm-to-mill road project	3.31	Moderate Extent
Establishment / monitoring of block farms.	3.34	Moderate Extent
Assist in the preparation of documents for SIDA Scholarship Project	3.35	Moderate Extent
Guide farmers in the application of lime for acidic soil	3.32	Moderate Extent
Continuous advocacy on the use of organic fertilizers/inputs	3.60	High Extent
Encourage farmers to practice environmental friendly method of farming, non-burning of trash after harvest	3.62	High Extent
Advocate farmers to re-plant the missing hill to maximize production	3.32	Moderate Extent
Distribution of brochures and other reading materials	3.31	Moderate Extent
Conduct assessment of damage after the occurrence of natural calamities	3.30	Moderate Extent
Disseminate information on farm Mechanization	3.30	Moderate Extent
Disseminate information on socialized credit program under SIDA Law	3.29	Moderate Extent
Conduct of brix reading on the field during harvesting period	3.00	Moderate Extent
Total Mean	3.37	Moderate Extent

Difference on the extent of services of the government to sugarcane farmers at the different location in the Visayas when grouped as to profile variables

Table 5 presents the difference on the extent of services of the agency to sugarcane farmers of the different location in the Visayas when grouped as to profile variables in terms

of sex and area of coverage using t-test for independent samples. It further revealed that there is a significant difference on the extent of services of the agency to sugarcane farmers of the different location in the Visayas when grouped as to sex ($t=2.240$, $p=0.000<0.05$) and area of coverage ($t=2.143$, $p=0.000<0.05$).

This means that the extent of services of the agency to sugarcane farmers of the different location in the Visayas when grouped as to sex and area of coverage vary.

The findings implied that the agency greatly extend their services and satisfactorily perform their duties to the fullest and maximized their resources for the benefit of the sugarcane farmers in the Visayas. However, the location in

the Visayas do influence the level in the level of productivity and the extent of services.

Relatively, agricultural extension service is a system that uses educational processes to assist the farmers and their families for improving production practices and raising of incomes. It plays a significant role in promoting agricultural productivity, increasing food security, and improving rural livelihoods (Ghimire et al, 2014).

Table 5. t-test Result on the difference in the extent of services of the government to sugarcane farmers in the different location in the Visayas when they are grouped by sex and area of coverage

Profile	Mean	T	Sig	Interpretation
Gender	3.37	2.240	.000	Sig
Male	3.42			
Female	3.32			
Area of Coverage	3.37	2.143	.000	Sig
3,999 hectares & below	3.40			
4,000 hectares & above	3.34			

In addition to Table 5, the data in Table 6 presents the difference on the extent of services of the agency to sugarcane farmers of the different location in the Visayas when grouped as to profile variables in terms of age, educational attainment, and length of service using One-way ANOVA. It further revealed that there is a significant difference on the extent of services of the agency to sugarcane farmers of the different location in the Visayas when grouped as to age ($F=3.008$, $p=0.000<0.05$), educational attainment ($F=3.109$, $p=0.000<0.05$), and length of service ($F=2.742$, $p=0.005<0.05$).

This means that the extent of services of the agency to sugarcane farmers of the different location in the Visayas when grouped as to age, educational attainment, and length of service vary.

Study of Demiryurek (2014) indicates that the purpose of agricultural extension was view as a farmers training activity to increase productivity and thus the welfare of farmers by technology transfer in the past. Today, the concept of rural extension has a content aiming to facilitate information and experience sharing among farmers to develop their decision making and problem-solving skills with the help of extension workers (Demiryurek, 2014).

Furthermore, the study of Haq (2013) which was to determine the factors influencing the benefit of extension services in terms of farm income and factors affecting the extension workers contact to farmers. The results showed that extension contact had a great impact on crop income. The result also indicates that many farmers did not receive any extension contact and the effect of extension contact had not increased the crop income compared to other factors such as the irrigation and chemical fertilizers. They concluded that agricultural extension is necessary to increase the income of farmers (Haq, 2013).

Dlamini and Worth (2016) recommended that extension is basically a communication, and communications have to do with information. ICTs are, therefore, ideal tools that extension can manipulate to enhance the process of handling and disseminating information to assist small farmers to improve productivity. ICTs can also ensure accurate and timely information delivery to target audience for proper decision-making. They concluded that agricultural extension should therefore be an integral tool of all industry players that provide extension services to address the issue of poor productivity among small sugarcane farmers (Dlamini & Worth, 2016).

Table 6. One-way ANOVA Test Result on the difference on the extent of services of the agency to sugarcane farmers in the different location in the Visayas when they are group by age, educational attainment, and length of service

Profile	Mean	F	Sig.	Decision
Age	3.44	3.008	0.000	Reject H _o
35 yrs old & below	3.40			
36 – 60 yrs old	3.42			
61 yrs old & above	3.46			
Educational Attainment	3.47	3.109	0.000	Reject H _o
College Graduate	3.48			
Masters (or with units)	3.47			
Doctoral	3.44			
Length of Service	3.45	2.742	0.005	Reject H _o
10 yrs & below	3.43			
11 – 20 yrs	4.47			
21 yrs & above	3.45			

Level of productivity of the sugarcane farms in the Visayas

Table 7 shows the level of productivity of sugarcane farms in the Visayas using the mean. The results revealed that in general, the level of productivity of sugarcane farms in the Visayas (M=3.20) was at “high”.

Specifically, the level of productivity of sugarcane farms in the Visayas was “high” under cane tonnage production in the following areas: 64.01 tons and above (M=3.19), 59.01-64.00

tons (M=3.20), 59 tons (M=3.19), 54.00-58.99 tons (M=3.22), and 53.99 tons and below (M=3.15).

The level of productivity of sugarcane farms in the Visayas was “high” under sugar rendement in the following areas: 2.50 LKg/TC and above (M=3.24), 1.99-2.49 LKg/TC (M=3.20), 1.98 LKg/TC (M=3.21), 1.93-1.97 LKg/TC (M=3.22), and 1.92 LKg/TC and below (M=3.21).

Table 7. Mean result on the productivity of sugarcane farms in the Visayas

Level of Productivity Indicators	Mean	Description
1. Cane Tonnage Production (tons/ha)		
64.01 tons and above	3.19	High
59.01 - 64.00 tons	3.20	High
59.00 tons (average)	3.19	High
54.00 - 58.99 tons	3.22	High
53.99 tons and below	3.15	High
2. Sugar Rendement (LKg/TC)		
2.50 LKg/TC and above	3.24	High
1.99 – 2.49 LKg/TC	3.20	High
1.98 LKg/TC (average)	3.21	High
1.93 – 1.97 LKg/TC	3.22	High
1.92 LKg/TC and below	3.21	High
Total	3.20	High

Difference on the level of productivity of the sugarcane farms in the Visayas when grouped by location

The data in Table 8 presents the difference in the level of productivity of sugarcane farms in the Visayas when grouped by location using

One-way ANOVA. It further revealed that there is a significant difference in the level of productivity of sugarcane farms in the Visayas when grouped by location ($F=3.482$, $p=0.000<0.05$).

This means that the level of productivity of sugarcane farms in the Visayas when grouped by location are not comparable.

Table 8. One-way ANOVA Test Result on the difference on the level of productivity of the sugarcane farms in the Visayas when grouped by location

Location	Mean	F	Sig.	Decision
Mill Districts	3.46	3.482	0.000	Reject H_0
ILO	3.47			
CAP	3.45			
BOG	3.46			
ORM	3.45			
TOL	3.44			
BAS	3.45			
BIS	3.46			
LAC	3.48			
VIC	3.47			
SAC	3.46			

Level of productivity on sugarcane farming of the different Mill Districts in the Visayas in terms of indicators

Table 9 shows the level of productivity of sugarcane farming in the different location in the Visayas in terms of indicators such as size of farm, type of soil, land topography, average rainfall received, distance of the farm to the sugar mill, farming innovations, workers' availability and expenses per hectare using the mean. It further revealed that the level of productivity of sugarcane farming in the different location in the Visayas ($M=1.98$) was at

"low productivity". This means that the productivity of sugarcane farming in the different location in the Visayas was below average.

Specifically, the level of productivity of sugarcane farming in the different location in the Visayas was at "low productivity" when grouped as to the size of farm ($M=1.95$). Type of soil ($M=1.95$), land topography ($M=1.95$), average rainfall received ($M=1.95$), distance of the farm to the sugar mill ($M=1.95$), farming innovations ($M=2.11$), workers' availability ($M=2.01$) and expenses per hectare ($M=1.96$).

Table 9. Mean result of the productivity of sugarcane farming at the different locations in the Visayas in terms of indicators

Productivity Indicators	Mean	Description
Size of Farm	1.95	Low Productivity
Type of Soil	1.95	Low Productivity
Topography of the Land	1.95	Low Productivity
Average Rainfall Received	1.95	Low Productivity
Distance of the Farm to the Sugar Mill	1.95	Low Productivity
Farming Innovations	2.11	Low Productivity
Workers Availability	2.01	Low Productivity
Expenses per Hectare	1.96	Low Productivity
Total Mean	1.98	Low Productivity

Difference in the level of productivity of the sugarcane farmers (in tons/hectare) among

the different mill districts when they are grouped according to indicators

Table 10 presents the difference on the level of productivity in the different location in the Visayas for Crop Year 2016-2017 when they are group according to the size of farm. The type of soil, land topography, average rainfall received, distance of the farm to the sugar mill, farming innovations, workers' availability and expenses per hectare using One-way Analysis of Variance.

Results revealed that there is a significant difference in the level of productivity when grouped as to average size of the farm ($F=40.857$, $p=0.000<0.05$). The land topography ($F=7.784$, $p=0.000<0.05$), distance of the farm to the sugar mill ($F=18.293$, $p=0.000<0.05$), farming innovations ($F=12.194$, $p=0.000<0.05$), workers'

availability ($F=6.921$, $p=0.000<0.05$), and expenses per hectare ($F=6.864$, $p=0.000<0.05$). Thus, the level of productivity in the different location in the Visayas for Crop Year 2016-2017 when they are group according to the size of farm, land topography, distance of the farm to the sugar mill, farming innovations, workers' availability and expenses per hectare varies.

On the other hand, the results implied that there is a no significant difference in the level of productivity when grouped as to the soil type ($F=0.137$, $p=0.999>0.05$) and average rainfall received ($F=1.834$, $p=0.061>0.05$). Hence, the levels of productivity in the different location in the Visayas for Crop Year 2016-2017 when they are group according to the type of soil and average rainfall received do not vary.

Table 10. ANOVA results in the level of productivity among the different location in terms of indicators

Productivity Indicators	F	Sig	Description
Size of Farm	420.857	0.000	Reject Ho
Type of Soil	0.137	0.999	Accept Ho
Land Topography	7.748	0.000	Reject Ho
Average Rainfall Received	1.834	0.061	Accept Ho
Distance of the Farm to the Sugar Mill	18.293	0.000	Reject Ho
Farming Innovations	12.194	0.000	Reject Ho
Workers Availability	6.921	0.000	Reject Ho
Expenses per hectare	6.864	0.000	Reject Ho

Relationship between the extent of agency services and level of productivity

The data in Table 11, showed the relationship on the extent of agency services and the productivity in the different Mill District of Visayas using Pearson's r . It could be deduced from the data that there was no significant relationship on the extent of agency services and the level of productivity ($r=0.021$, $p=0.675>0.05$). Therefore, the extent of agency services rendered to the sugarcane farmers in the Visayas do not affect the level of productivity

In relation to findings of the study, activating the agricultural extension services system

is of great importance. Jaiswal (2014) commented that there are enough viable and modern technologies that have been developed already but many of these have not reached to farmer level because of poor delivery of extension services. Moreover, farmers are not aware of the technology available hence, they could not properly adapt them.

The inefficient delivery of agricultural extension service limits the use of modern technology. The lack of technical know-how plus the limited financial resources were most of the problems by the farmers in adopting sustainable-modern agricultural practices.

Table 11. Correlation analysis between extent of agency services and level of productivity

Variables Compared	Pearson r	Sig	Description	Strength of Relationship
Extent of Services Productivity	0.021	0.675	Accept Ho	Very low

Relationship between the extent of services of the agency and farm profile

The data in Table 12, showed the relationship on the extent of agency services and farm profile in the different location of Visayas using Pearson's r. It could be noted from the data that there was no significant relationship on the extent of agency services and the farm profile ($r=0.109$, $p=0.713>0.05$).

The findings implied that the performance of the agency services rendered to the sugarcane farmers do not significantly influence the farm profile such as the size of farm, type of soil, land topography, average rainfall received, dis-

tance of the farm to the sugar mill, farming innovations, workers' availability, and expenses per hectare.

In relation to findings of the study, Kaur of India (2018) had discussed on his study that public agricultural extension system is one of the largest knowledge and information dissemination institution. In the last 15 years, agricultural production has stagnated, and this calls for a system based on inter-disciplinary holistic approach not only to develop ecologically sound technologies for different areas, but also to facilitate their utilization at grass root level (Kaur & Kaur, 2018).

Table 12. Correlation analysis between the extend of services of the and farm profile

Variables Compared	Pearson r	Sig	Description	Strength of Relationship
Extent of Services Farm Profile	0.109	0.713	Accept Ho	Low

Relationship between the level of productivity and farm profile

The data in Table 13, showed the relationship on the level of productivity and farm profile in the different location of Visayas using Pearson's r. It further revealed that there was no significant relationship on the level of productivity and the farm profile ($r=0.097$, $p=0.756>0.05$).

The findings implied that the level of productivity do not significantly influence the farm profile such as the size of farm, type of soil, land topography, average rainfall received, distance of the farm to the sugar mill, farming

innovations, workers' availability and expenses per hectare.

In relation to findings of the study, Kaur of India (2018) had discussed on his study that public agricultural extension system is one of the largest knowledge and information dissemination institution. In the last 15 years, agricultural production has stagnated, and this calls for a system based on inter-disciplinary holistic approach not only to develop ecologically sound technologies for different areas, but also to facilitate their utilization at grass root level (Kaur & Kaur, 2018).

Table 13. Correlation analysis between the level of productivity and the farm profile

Variables Compared	Pearson r	Sig	Description	Strength of Relationship
Level of Productivity Farm Profile	0.097	0.756	Accept Ho	Very Low

Conclusion

There were 8 implementers and 400 farmers considered in the conduct of the study. Almost all of them are female, aging 36 years old and above. Majority of the implementers were male, college graduate, aging 36-60 years old and have been in service for more than 21 years with 4,000 hectares and above area of coverage.

On the other hand, most of the farmers were male, aging 36-60 years old and are high school graduate. These farmers have been in the sugarcane industry for 11-20 years.

The extent of services of the agency to sugarcane farmers in the different location in the Visayas was at moderate extent.

A significant difference was observe on the extent of services of the agency to sugarcane

farmers in the different location in the Visayas when classified as to sex, area of coverage, age, educational attainment and length of service. The level of productivity of sugarcane farms in the Visayas was high.

A significant difference was note on the level of productivity of sugarcane farms in the Visayas when grouped as to location.

The level of productivity of sugarcane farming in the different location in the Visayas in terms of indicators such as size of farm, type of soil, land topography, average rainfall received, distance of the farm to the sugar mill, farming innovations, workers' availability and expenses per hectare was at low productivity.

There is no significant difference on the productivity of sugarcane farming in the different location in the Visayas in terms of indicators; such as type of soil, and average rainfall received. Though, there is a significant difference in the productivity of sugarcane farming in the different location in the Visayas in terms of indicators such as size of farm, land topography, distance of the farm to the sugar mill, farming innovations, workers' availability, and expenses per hectare.

The extent of agency services was not significantly related to the productivity.

There is no significant relationship existed between the extent of agency services and farm profile.

Farm profile does not influence also the level of productivity.

Acknowledgement

Our deepest gratitude to the sugarcane farmers and the technical personnel who were involved during the data gathering.

References

- Annis B. (2016). How gender differences in the workplace can boost productivity and improve the bottom line. Training Magazine. <https://trainingmag.com/how-genderdifferences-workplace-can-boost-productivity-and-improve-bottom-line/>. p.4. Retrieved June 3, 2018.

- Demiryurek, K. (2014). Extension and advisory concepts and their philosophy. Ondokuz Mayıs University, Samsun, Turkey. pp 19-30.
- Dlamini M. M. and Worth, S. T. (2016). Agricultural extension in the facilitation of improved sugarcane productivity among small-scale growers in Swaziland: A SWOT analysis. *Asian Journal of Agricultural Extension, Economics and Sociology*. Art. DOI: 10.9734/AJAEES/2016/27094, ISSN: 2320-7027.
- Gallen, Y. (2015). The gender productivity gap. 2015-20-28 T 10:36 UTC. Published October 2015. https://www.researchgate.net/publication/283287946_TheGender_Productivity_Gap. p. 3. Retrieved June 3, 2018.
- Ghimire, N., Koundinya, V and Hols-Clause, M. (2014). Government run vs University managed agricultural extension: A review of Nepal, India and the United States. *Asian Journal of Agricultural Extension, Economics and Sociology*. <http://creativecommons.org/license/by/3.029>. Retrieved on March 27, 2018.
- Haq, A. M. (2013). The impact of agricultural extension contact on crop income in Bangladesh. Bangladesh J. Agril. Res. 38(2): ISSN 0258-7122. June 2013. Department of Business Administration, City University, Banani, Dhaka 1213, Bangladesh. zafarhaq34@gmail.com. pp. 321-334. Retrieved June 8, 2018.
- Jaiswal, P. and Tiwari, R. (2014). Technological knowledge and adoption behavior of sugarcane growers of Surguja District, Chattisgarh, Southeast Central India. *Indian Journal of Applied Research*, Vol. 4 Issue No.4, February 2014.
- Kaur, K. and Kaur, P. (2018). Agricultural extension approached to enhance the knowledge of farmers. Int. J. Curr. Microbiology. Sci. 7(02): 2367-2376. Doi: <https://doi.org/10.20546/ijemas.2018.702.289>. Retrieved March 27, 2018
- Sugar Regulatory Administration (2015). Sugarcane roadmap 2020 (CY 2014-2015 to CY 2019-2020 version). "A Medium-Term Plan for the Philippine Sugarcane Industry". Quezon City, Philippines. pp. 3