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FACTORS AFFECTING THE INCOME OF RICE FARMERS OF THE BACDAFRANJOSE AGRARIAN REFORM COMMUNITY (ARC)

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ABSTRACT

This study identified the factors affecting the income of Agrarian Reform Beneficiary (ARB) farmers of BACDAFRANJOSE Agrarian Reform Community (ARC) in the municipality of Luna, Apayao. The respondents using the Slovin's Formula selected through purposive random sampling techniques include thirty (30) beneficiary farmers of the five (5) in the municipalities of Bacsay, Dagupan, San Francisco, San Jose, and San Sebastian .The respondents' perceive the following factors to greatly influence their rice production income: the effectiveness of government policies on agricultural support, fluctuations in agricultural product prices, technology adoption in agriculture, the impact of climate change, access to essential resources, enhancement of farmers' skills through education and training, provision of economic services, availability of basic social services, effectiveness of risk management strategies, efficient channels for selling produce, and allocation of funds. Also, the study found no relationship between the perceived factors impacting the respondents' income with that of their personal characteristics. However, spending in production and marketing as well as education and training were found to affect the income of Agrarian Reform Beneficiary (ARB) farmers in the BACDAFRANJOSE Agrarian Reform Community (ARC)

Keywords: Agrarian Reform Beneficiaries, Agrarian Reform Community, income, rice farmers, Luna, Apayao,

INTRODUCTION

Large changes have taken place in smallholder farming system in recent decades, particularly related to cropping intensity, input availability, climate risk and off-farm activities. However, few studies have investigated the extent to which these changes have impacted farm-level income, which is a key indicator of food security and poverty in low input farm-based system.

In the Philippines, the country's nominal wage rate of agricultural workers in 2019 averaged around three hundred thirty-one pesos per day. On the average, male farm workers were paid at three hundred thirty-five pesos per day, higher than the average wage rate of female farm workers at three hundred four pesos per day (PSA, 2020). Agricultural production in the Philippines is dominated by small-scale farmers. The Agricultural Census of 2012 indicates that close to ninety percent of agricultural land holdings are less than three hectares, and most farmers rely on multiple layers of intermediaries to consolidate and transport their products to final markets. The

dependence of farmers on these marketing channels increases the further they are from their markets. In these settings, intermediaries often bargain down prices without passing on the reduction to consumers.

Because the majority of farmers in the Philippines do small portion owned land, they become dependent on tenancy or contract-growing arrangements, which put them at the mercy of landlords, traders, or middlemen. Due to the removal of state controls on agriculture-related commodities, the prices of agricultural inputs, such as seeds, fertilizers, etc. also increases drastically. Inadequate investment in infrastructure likewise add to the problems. Furthermore, the influx of huge quantities of cheap rice because of extensive importation causes the farm gate price of domestic rice to plummet. These factors force many farmers into debt-bondage, thus perpetuating the vicious cycle of poverty among them.

Farmers usually work in various activities to obtain income and fulfill household demands. The agricultural sector has an important role in economic development since it is a source of income and employment opportunities for rural communities (Hartoyo et. al, 2021). Yet, farmer's income is closely related to household expenditure. The higher income, the higher household expenditure would be. Higher income could increase the ability of a household to buy food and non-food needs. Therefore, the increase in income will substantially increase non-food consumption expenditure since food consumption has been fulfilled.

It is also equally important to understand what are the factors and forces at play that have resulted in a decline in aggregate real net farm income. This can occur when expenses increased faster than revenue, and when revenue growth is influenced by lower prices received for products traded in the marketplace (CAPI, 2005).

According to Pingali et al (2005), smallholder farmers in most developing economies find it difficult to participate in markets because of numerous constraints and barriers. These are mostly reflected in the hidden costs that make it difficult to access input and output markets. Transaction costs are the embodiment of access barriers to market participation for most resource-poor smallholders (Delgado ,1999; (Holloway et al., 2000). A fundamental transaction cost these farmers face is the cost of obtaining information (Shepherd, 1997).

In 1972, the government through the Department of Agrarian Reform (DAR) started the implementation of the Comprehensive Agrarian Reform Program (CARP). The program refers to the distribution of the targeted working scope of 5.164 million hectares of agricultural lands to landless farmers and farm workers, transforming them into Agrarian Reform Beneficiaries (ARB). However, this target area for distribution and registration was revised to 5.419 million hectares in January of 2018. The year-on-year rate of accomplishment of the program in terms of area of agricultural land distributed and registered and the number of agrarian reform beneficiaries denotes the rate of transfer of arable land to the ownership of qualified farmer-beneficiaries. This can serve as an indicator of the results of the government's efforts to improve the quality of life of the farmers and promote agriculture and rural growth development. However, most beneficiary farmers of the Agrarian Reform Program still reported as having low income

despite efforts are crucially undertaken to them. Hence, the current study is put forward to identity the factors affecting the income of Agrarian Reform Beneficiary (ARB) farmers on Luna, Apayao in Agrarian Reform Community (ARC) of the province of Apayao.

Statement of the Problem

Generally, the study sought to identify the factors affecting the income of Agrarian Reform Beneficiary (ARB) farmers of BACDAFRANJOSE Agrarian Reform Community (ARC). Specifically, the study sought to answer the following questions:

1. What is the profile of the respondents with respect to personal profile, socio-economic characteristics, and communication characteristics?
2. What are the extent of influence on the perceived factors affecting the income of the ARB farmers?
3. What is the annual net income of the ARB farmers from rice farming?
4. Is there a significant relationship between the perceived factors affecting the income of ARB farmers of BACDAFRANJOSE ARC and the personal profile of the respondents?
5. Is there a significant relationship between the perceived factors affecting the income of ARB farmers of BACDAFRANJOSE ARC and their annual income from rice farming?

METHODOLOGY

Research Design

The descriptive- correlational research design that was used in this study. This was the most appropriate design used in the study because it draws information without making any changes to the study subject. According to Beck (2012), descriptive correlational research aims to describe the relationship among variables rather than to infer-and-effect relationships. The researcher was primarily interested in describing relationships among variables as it described certain phenomena and their respective relationships.

Locale of the Study

The research was conducted in the BACDAFRANJOSE Agrarian Reform Community in town of Luna in the province of Apayao. This was particularly conducted in the municipalities of Bacsay, Dagupan, San Francisco, San Jose, and San Sebastian .

Respondents and Sampling Procedures

The farmers who were physically present during the course of the data gathering, those who could understand and follow instructions in the desired output of the questionnaire, and those who gave their consent were the respondents of the study. The respondents using the Slovin's Formula include the thirty (30) beneficiary farmers of the

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identified localities in the municipality of Luna, Apayao. Moreover, purposive random sampling technique was employed since not all farmers in Luna, Apayao were expected to join the study.

Research Instrument

To gather data for this study, the researcher adopted a questionnaire of farmers survey with conventional Syrian farmers (2018), after the statement of the problem is formulated. The questionnaire was interpreted verbally in the Filipino Language and was interpreted into the local dialects since local beneficiaries of the DAR are Ilocano speaking in origin. With these, the farmers were able to sustain their answers on the choices provided in the questionnaire. The appropriated questions from the adopted questionnaire were chosen and aligned with the objective of the study. The survey questionnaire is composed of two parts. First, the respondents' demographic data. This part is crucial since all respondents were required to answer each question and name was not be required in this portion. Second, the content questions which contain the precise instructions to respondents before agreeing to the choices provided. This portion contained the most substantial and most ask questions on the factors influencing the DAR beneficiary's income.

The research instrument undergone content validation by the research adviser and experts in the field of research writing as prescribe by the research authority. The revised draft of the questionnaire was submitted to the research adviser and graduate professors who are expert for face validation. All suggestions of the validators were incorporated in the final copy of the questionnaire. This survey questionnaire was validated through dry-run procedures.

A pilot test was conducted. Those individuals involved in the pilot study were not the actual respondents for the study. The Cronbach's coefficient alpha (a) was employed to assess the internal consistency of the set scale or test items, the extent by which all items in a test measure the same concept or inter-relatedness of the items within the test. These provided an excellent reliability among different items. This also implies that the research instrument can be employed for the purpose of the research of the study.

Data Gathering Procedure

To respond to the requirement of this study, the standard operating procedures were observed by the researcher such as securing an ethics review committee assessment and a written communication addressed to the Head of DAR Apayao office. After the approval of the request and permission, the researcher gave a brief explanation to the respondents regarding the purpose of the survey and assured them that their responses will be observed with strict confidentiality. The respondents were given ample time to answer the survey questionnaire and the researcher retrieved all questions after the respondents' responses for safe keeping. The results of the retrieved copies were tallied and tabulated in accordance with the frequency counts for the given options. Then, the

data were analyzed and interpreted. The gathered data were subjected to an appropriate statistical analysis to answer the specific problems of the study.

Data Analysis

The following statistical tools were used in analyzing the data to be collected to achieve the objective of this study. For the profile of ARBs, frequency counts, Mean and Percentage distribution were used to describe the profile and income of the respondents. Frequency counts and the three point likert scale were used to determine and describe the factors perceived to affect their income in farming. To test the hypothesis, Chi-square test of independence was used.

RESULTS

Profile of the Agrarian Reform Beneficiary (ARB) farmers of BACDAFRANJOSE Agrarian Reform Community (ARC)

According to the data gathered, the largest age group consists of those between 59-68 years old, representing for 43.3% of the respondents. Conversely, the smallest age groups are those aged 39-48 years and 69-78 years, each representing only 6.7% of the respondents. The mean age of the respondents is 55 years. The findings connotes that most of the respondents were relatively old. In a similar study by Moya et.al.. (2015) it was found out that average age of rice farmers was 46 years old in 1966 and increasing to 59 years in 2012.

With regard to sex, 90.0% of the respondents are male, while only 10.0% are female. This implies that majority of the respondents are male. It shows that males continue to be more dominant in their participation in agricultural production or farm activities compared to females. In the findings of Himatay (2003), it shows that majority of rice farmers in irrigated and rainfed farms are male in their fifties, married and most are elementary graduate. The findings of the current study is consistent with the long historical tradition and behavior in the Philippines where males were more active and fitted to perform farming activities because of their physical strength and endurance to manual labor.

As regards the educational attainment of ARBs, 46.7% of the respondents are high school graduates, the highest percentage among the educational categories. The lowest percentage, at 13.3%, corresponds to those who have attended high school but did not graduate. This implies that most rice farmers in this community have a basic level of education.

As to nature of family, 76.7% of the respondents belong to nuclear families, whereas only 23.3% are part of joint families, which consist of more than one family unit. This implies that the majority of rice production activities in the community are carried out within smaller family units.

When referring to the family size of the respondents, 76.7% of the respondents have less than 5 family members, whereas only 23.3% have more than 5 family members. This implies that the majority of rice production activities in the community are carried out with smaller family members.

With regard to Farm Ownership, 93.3% of the respondents are landowners, while only 6.7% are tenants. This implies that the majority of rice farmers in the community have direct ownership of the land they cultivate.

As to farm ownership, 93.3% of the respondents are landowners, while only 6.7% are tenants. This implies that the majority of rice farmers in the community have direct ownership of the land they cultivate.

As to the Farm Size, 70.0% of the respondents' own farms smaller than 1 hectare, while the remaining respondents' own farms ranging from 1 hectare to 3 hectares. This implies that the prevalence of small landholdings among rice farmers in the community.

As regards Mass media exposure with a mean of 2.7, indicates that most of the respondents reported that they are often exposed to mass media. This implies that mass media plays a prominent role in the communication landscape of the community, potentially serving as a key source of information, news, and entertainment for rice farmers. Furthermore, concluded by Veisi (2012) that integrated farming income were influenced by external factors as well as the gender, knowledge, and experience level of farmers; soil quality; access to information; mechanization level; and the feasibility of technologies. Finally, consideration of these variables as determinant factors in a 'targeted policy approach recommended to increase the sustainable use and widespread adoption of new techniques for better production.

In relation to farmers' social participation, a mean of 2.3 means that the respondents sometimes participate in social activities. This implies that the farmer beneficiaries as respondents engage in social activities periodically rather than consistently.

As to interaction with farm extension agency personnel, a mean of 2.4 and reported a "sometimes" interaction with farm extension agency personnel. This implies that the respondents interact with farm extension agency personnel on an intermittent basis. In the study of Ballesteros & Ancheta (2020) uncloaked how Agrarian Reform Beneficiary Organizations (or ARBOs) participate in the value chain; how they engage actors along the value chain and what challenges do they face in the process. Farmer organizations, such as ARBOs, are important conduits for smallholders to participate specifically in higher value chain. This strategy enables smallholders to pool resources, jointly carry out profitable activities, reduce risks and transaction costs and operate on scale economies.

Extent of influence of the following factors to the income of ARB Farmers.

According to the data, the extent of influence of the following factors to the farmers' incomes in the Bacdafranjose Agrarian Reform Community (ARC) provides insights into the community's perspectives on various aspects influencing rice production income. The categorical mean of respondents' perceptions of these factors as to Capital Aspect is 2.93, indicating that they consider these factors to have a significant impact on their income from rice production.

The highest mean score was observed in the category as to spending in production and marketing, of "Fluctuations in prices of agricultural products" with a mean of 3.00 and "Efficient channel to sell produced" with a mean of 2.8, indicating that respondents perceive these factors to have a significant influence on their income from rice production. These findings indicate that farmers in the BACDAFRANJOSE ARC are well aware of the impact of market prices in determining income levels. In contrast, the category "Efficient Channels to Sell Produce" also indicates that, while still highly regarded, respondents may believe there is scope for enhancement to the efficiency of the channels through which they sell their produce. This finding highlights the importance of improving market access and establishing fair and efficient marketing mechanisms for agricultural products in the community.

Highest mean score was also observed in factors as to physical infra, categorical mean of 3.0 , which indicate that respondents perceived these factors to have a significant impact on their farm income. In the study of Tilles et. al (2023), one of the key elements of land distribution is the development of rural infrastructure and support services aimed at boosting agricultural productivity through improved road network access. In 2000, the Asian Development Bank (ADB) initiated a $72 million investment project, allocating 72% of the funds to capital outlay for rural infrastructure. The implementation of interconnected road networks connecting contiguous barangays under the Agrarian Reform Communities (ARC) Development Plan facilitated easier identification of road repairs, increased budget allocation for health and sanitation, and more comprehensive establishment of irrigation networks in launched ARCs. This led to the creation of highly organized Agrarian Reform Beneficiary Organizations (ARBOs), which streamlined the distribution of support services and training programs.

Factors as to education and training, a categorical mean of 2.93 was observed in enhancing farmer’s skills, technology adoption in agriculture and climate change awareness, while a categorical mean of 2.83 in Risk management and strategies. According to Anang et al. (2020), agricultural extension agents play a crucial role in helping farmers enhance their productivity in rice production by educating them on effective solutions. These agents influence farmers' adoption of new methods and techniques that can improve profitability. Similarly, Olorunfemi et al. (2020) assert that extension agents are responsible for disseminating new agricultural technologies to farmers, thereby improving their practices and knowledge. However, a significant portion (47.95%) of these farmers are uncertain about the effectiveness of the extension agents' role, indicating doubts about whether these agents are truly aiding in their production efforts.

Factors as to social aspect and others with a categorical mean of 2.93 in social services and 2.8 in the monitoring and supervision of government officials was observed as the lowest categorical mean which indicate that respondents believed that there is a need for more time and assistance by the government officials to their community. Grootaert and van Bastelaer (2002) defined social capital broadly as the institutions, relationships, attitudes, and values that govern interaction among people and contribute to economic and social development.” They believe the strength of this broad definition lies in its ability to include micro, meso and macro levels of social capital. Then they have

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differentiated between cognitive social capitals, which refer to values, beliefs, attitudes, social norms and behavior that exist within communities and groups (i.e., social trust and norms of solidarity and reciprocity). They added that the structural dimension (which facilitates social interaction) and the cognitive and attitudinal dimension (which predisposes people to act in a socially beneficial manner) work interactively; and are mutually reinforcing. This was followed by a number of studies on livelihoods, especially on the sustainable livelihoods approach over the last couple of decades.

These accurately reflects the perception of these factors, underlines the multifaceted nature of the challenges and opportunities facing rice farmers in the Bacdafranjose ARC. Effective initiatives and measures that address these perceived factors can significantly improve the income and livelihoods of farmers in the community (Das et al., 2022).

Table 1. Extent of influence of the different factors to the income of ARB Farmers.

Indicators		Mean	Descriptive Value
	Factors as to Capital Aspect		
1	Effectiveness of government policies on provision of agricultural Support, subsidies and price controls	2.93	to a great extent
2	Access to essential resources like land, water, credit, and farm inputs	2.93	to a great extent
3	Allocation of funds provided by the LGU	3.00	to a great extent
	Factors as to Spending in production & Marketing		
1	Fluctuations in prices of Agricultural products	3.00	to a great extent
2	Efficient Channels to sell produce.	2.80	to a great extent
	Factors as to Physical Infra		
3	Provision of Economic services such as farm to market roads, bridges, irrigation system and the like.	3.00	to a great extent
	Factors as to Education & Training		

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1	Enhancing farmers' skills, knowledge and capacity through education and trainings.	2.93	to a great extent
2	Technology adoption in agriculture such as precision farming, efficient irrigation and modern machineries	2.93	to a great extent
3	Impact of Climate Changes risk and challenges including extreme weather events and changing growing season	2.93	to a great extent
4	Effectiveness of Risk Management Strategies such as insurance and diversification.	2.83	to a great extent
5	Effectiveness of Risk Management Strategies such as insurance and diversification.	2.83	to a great extent
	Factors as to Social aspect & others		
1	Basic Social Services such as health education, potable water supply and power supply.	2.93	to a great extent
2	Constant monitoring and supervision of DAR and LGU officials to ARCs	2.80	to a great extent
Over-all Mean		**2.92**	**to a great extent**

Annual Net Income from Farming

As to Farm Income, 20% of respondents reported annual net income ranging from 51,000 to 100,000 units, followed by 16.7% reporting incomes between 101,000 and 150,000 units. The lowest percentage, at 10.0%, corresponds to those with annual incomes of 50,000 units or below, while 6.7% reported incomes of 151,000 units and above.

A mean of 56, 500 annual net income implies that a majority of rice farmers in the community earn moderate income from rice farming activities. According to the study of Lagasca (2024), low income is a major issue for millions of farmers cultivating 4.81 million hectares. This challenge is primarily due to factors such as low crop yields, poor quality of produce, and significant post-harvest losses, especially in resource-limited environments.

However, through the promotion and use of special purpose rice production technology, the income per hectare from special-purpose rice production was Php 75,420.00, significantly higher than the Php 29,389.00 earned from regular rice, resulting in an additional benefit of Php 46,031.00. In Licab, Nueva Ecija, the number of technology adopters increased from 6 to 9, and the area planted expanded from 1.4 hectares to 2.75 hectares. In contrast to the counterproductive development practices and segregation associated with the old Apartheid-governed South Africa, the new South African constitution encourages public participation in government policy to ensure that the implementation of poverty reduction strategies meet the ends of truly sustainable development. In this regards, their government's achievement should not be overlooked from post 1994, but many Africans still struggle to escape the relentless grip of poverty.

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Association between respondents' profile and the perceived factors affecting the income of ARB farmers of BACDAFRANJOSE ARC

According to the findings in table 2, the analysis of the relationship between the perceived factors influencing the income of Agrarian Reform Beneficiary (ARB) farmers in the BACDAFRANJOSE Agrarian Reform Community (ARC) and respondents' personal characteristics revealed no significant associations across all variables. The correlation coefficient (r-value) for sex was 1.67 with a p-value of 0.893, indicating that there is no significant relationship between sex and perceived income-affecting factors. Similarly, age had a negligible correlation (r-value = 0.007, p-value = 0.970). The highest educational attainment, nature of family, and family size all showed non-significant correlations with perceived income-affecting factors (p-values greater than 0.05). These findings indicate that respondents' sex, age, educational attainment, family structure, and family size have no significant impact on their perceptions of the factors influencing their rice production income in the BACDAFRANJOSE ARC.

Table 2. Association between the perceived factors affecting the income of ARB farmers of BACDAFRANJOSE ARC and the profile

Profile	**r- computed value**	**P-value**	**Remarks**
Age	0.007	0.970	Not Significant
Family Size	0.186	0.325	Not Significant
Farm Size	0.186	0.326	Not Significant
Profile	**χ^2- computed value**	**P-value**	**Remarks**
Sex	1.667	0.893	Not Significant
Highest Educational Attainment	16.736	0.335	Not Significant
Nature of Family	3.727	0.589	Not Significant
Family Ownership	3.810	0.577	Not Significant
Mass Media Exposure	4.048	0.543	Not Significant
Social Participation	2.381	0.794	Not Significant
Interaction with Farm extension Agency personnel	3.958	0.555	Not Significant

Association between the perceived factors affecting the income of ARB farmers and their income from rice farming

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The table 3 below shows the analysis of the association between perceived factors affecting the income of Agrarian Reform Beneficiary (ARB) farmers in the BACDAFRANJOSE Agrarian Reform Community (ARC) with that of their annual net income

The correlation coefficient (r-value) for spending in production and marketing was 24.799 with a p-value of 0.019564, indicates that there is a significant relationship between spending and perceived income-affecting factors. Similarly, Education and training aspect was 4.048 with a p-value of .0210 showed a significant relationship to the perceived factors affecting income.

On the other hand, capital, physical infrastructure, as well as, social and other aspects as perceived factors revealed no significant relationship factors affecting income of rice farmers. The correlation coefficient (r-value) for capital aspect was .09614 with a p-value of 0.3836, indicating that there is no significant relationship between capital and perceived income-affecting factors. Physical infra aspect had a negligible correlation (r-value = 10.219, p-value = 0.0681) and other social aspect (r-value = 0.007, p-value = 0.970). The capital aspect, physical infra and other social aspect all showed non-significant correlations with perceived income-affecting factors (p-values greater than 0.05). These findings indicate that capital, Physical infra and other social aspect have no significant impact on their perceptions of the factors influencing their rice production income in the BACDAFRANJOSE Agrarian Reform Community (ARC).

Table 3. Association between the perceived factors affecting the income of ARB farmers and their income from farming

Factors	χ^2- computed value	P-value	Remarks
Capital Aspect	0.09614	0.3836	Not Significant
Spending in Production and Marketing	24.799*	0.019564	Significant
Physical Infrastructure	10.219	0.0681	Not Significant
Education and Training	19.482*	0.0210	Significant
Social Aspect and Others	4.048	0.543	Not Significant

*-Significant @.05

Conclusion and Recommendations

The study concludes that capital aspect, spending in production and marketing, physical infrastructure, training and education, social aspect are the perceived to be greatly influencing the ARB community rice farmers' incomes. Despite these perceived influences, demographic characteristics such as sex, age, education level, family structure, and size have no significant impact on farmers' perceptions of income-affecting factors. However, the income of the rice farmers is affected by spending in production and marketing as well as on education and training factors

Based on the conclusions, the Department of Agrarian Reform (DAR) and other partner line agencies should continue to strengthen government policies on agricultural support through timely financial aid and subsidies; develop mechanisms to stabilize price fluctuations in agricultural products; continue to facilitate access to credit for capital and modern agricultural technologies to enhance their knowledge and stimulate empowerment among ARBs; develop mechanisms to mitigate the impact of climate change by providing training and demonstrations on climate resilient practices, management and strategies; strengthen partnerships with extension services and NGOs for technical assistance; improve economic infrastructure; and develop efficient marketing channels to increase their level of production, well-being and monthly income.

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