American Journal of Economics and Business Innovation (AJEBI)

ISSN: 2831-5588 (ONLINE), 2832-4862 (PRINT)

VOLUME 5 ISSUE 1 (2026)

PUBLISHED BY
E-PALLI PUBLISHERS, DELAWARE, USA

American Journal of Economics and Business Innovation (AJEBI)

Volume 5 Issue 1, Year 2026
ISSN: 2831-5588 (Online), 2832-4862 (Print)
DOI: https://doi.org/10.54536/ajebi.v5i1.6205
https://journals.e-palli.com/home/index.php/ajebi

The Factors Influencing Profitability of Corn Farmers in Cabanglasan, Bukidnon

Jenelyn H. Basoy[1*], Jaztine Enjill N. Calderon[1], Oscar E. Talingting[1], Kryzel M. Ladica[1], Allan V. Beliganio[1]

Article Information

Received: July 02, 2025

Accepted: October 29, 2025

Published: February 27, 2026

Keywords

Agricultural Technology, Corn Farming, Environmental, Financial Capital, Government Policies, Profitability

ABSTRACT

The cultivation of corn is important to rural agricultural economies; it offers an income as well as a source of food. Yet its profitability is dependent on a number of factors, such as economic capital, ecological variables, governmental regulations and technological development. This examined the effects of these factors to the profitability of corn farmers in Cabanglasan, Bukidnon. Accordingly, in the present study a sampling that was convenient because of the available data and information obtained through surveys was applied on 254 registered corn farmers who have been involved in farming for two consecutive years. Through a quantitative causal design the link between financial capital, environmental context, government policy and technology was studied. The results suggest that although these aspects are crucial to be productive on the farm, they do not immediately stimulate the profitability. Regression statistics indicated that no statistical relationship existed between the independent variables and business profitability, which implies that factors associated with markets conditions, price volatility or supply chain constraints have a stronger impact on financial outcome. According to the results, the study suggests that government and policymakers should undertake strategies, which include enhancing economic assistance, stabilizing corn prices and promoting agricultural training programs. It encourages farmers to adopt climate-smart practices they can use in adapting to changes in the environment, join cooperatives and organize for better management. Further inquiry could include other determinants of profitability, postharvest processing and export prospects.

INTRODUCTION

Corn farmers had a very crucial role in the Philippines being the second most important farmers and directly contributed to the sustenance of rural economy. However, the risk faced by such producers was high at a time when they had emerged as critically important. This risk was, in part due to variation in production costs, especially labor and water machine rent within farms as a result of differences in farm financial status. Research (Yakin *et al.*, 2022) on the status of corn farmers found that they obtained high profitability but they faced a relatively high level of risk. A number of reasons led to this difficult context, which include differences in production costs linked to the access to financial capital, restrictions on access to basic input such as seeds and fertilizer or vulnerability related to environmental factors like weather. In addition, a farmer's financial position determined their ability to pay for essential inputs such as labor and machinery hire. These writers believed that credit and input subsidies were operational factors of risk mitigation, to enable the resources accessed by farmers from being profitable.

Other studies showed the favorably role of financial assistance to agricultural activities. According to Severini and Biagini (2023), financial support has translated directly into farm income, with such programmed as the European Union Common agricultural policy (CAP) driving investment in essential infrastructure and equipment. Their conclusions indicated a strong connection between available capital and better farm performance; CAP payments were more likely to be spent on investments that generated positive externalities for the farm. This capital enabled farmers to invest in ways that frequently resulted in increased yields and, thus, improved livelihoods. But accessing agricultural credit exposed them to considerable risks such as production uncertainty, volatile market prices, and uncertain environmental situations. It was by avoiding these risks that discouraged financial institutions from lending money to the smaller farmers (Tambo *et al.*, 2020). Although the inquiry hesitated to condone subsidies that facilitated different types of input, these types of support tend toward greater productivity and farm income (Lencucha *et al.*, 2020), reinforcing a stark need for financial assistance in order to promote profit-making and reduce fail practices by farmers.

Farmers were not only interested in producing more crops for higher agricultural production; they adapted to the changes due to an increase in income or profit that improves their welfare (Ray *et al.*, 2021). Consequently, the first concern in the family farming production activity was to produce for benefit, for life quality improvement. This view was backed by another study (Puupponen *et al.*, 2022) which stated that farmers had an objective to increase production and make profit to enable their families have a better living. Even with the presence of government support programs, small-scale corn producers in the Philippines often faced large limitations to financial access. The constraints included lack of own financial capital, high cost of production and limited

[1] Bukidnon State University - Cabanglasan Campus, Philippines
[*] Corresponding author's e-mail: 2203100012@sc.buksu.edu.ph

access to formal financial institutions. Rosario *et al.* (2021) found that these issues were aggravated through the bureaucratic requirement of extensive documentation, stringent conditions and long application processing time among Filipino farmers.

LITERATURE REVIEW

Theory of Regulation

Regulation theory as articulated by MacLeod, G., and Holden (2009) provided a theoretical anchorage for this study—an open political economy tool that aids in analyzing how capitalist societies are stabilized to maintain equilibrium yet embraces contradictions-and also provides insights into the how multiple determinants (financial capital, environmental pressures, government policies, technology) converge to influence farmers productivity. The framework was then applied to analyze the impact of financial regulation, such as subsidized credit on capital flow – and hence investment and productivity (Smith & Jones 2022); how broad government policy tools, in this case price supports, stabilize income leading to planting decisions (Garcia & Patel 2019); or how policies stimulating technology adoption (through grant programmed or through intellectual property rules) shape innovation uptake in ITs affecting efficiency and competitiveness. Indeed, the theory was nothing short of a full-blown account of how these regulated elements combined in various ways to structure and output the agricultural sector within capitalism.

The Influence of Farmers Productivity Factors on Profitability

The productivity influences of financial capital, environment, government policy and technology together produce a remarkably positive effect on profit. This finding is in line with that of Zhang *et al.* (2021) who highlighted the importance of strategic government support and innovation policies in increasing farm profitability. This is also consistent with Purnamasari *et al.* (2023), who contended that enhanced levels of farmer productivity, happening with policy and financial access support meant positive financial outcomes. Additionally, Amaglobeli *et al.* (2024) argued that properly designed agriculture reforms, particularly those which improve access to finance and markets have great potential in improving farmers' income growth.

According to Mabaya *et al.* (2020) availability of important agricultural inputs and services may enhance farm productivity and profitability provided there is support to them by favourable economic and policy conditions. Makate and Makate (2021) argue that rises in farm income are likely to come from improved access to financial capital, technology and better market linkages that will ultimately allow smallholder farmers to increase their productivity and returns. Adjognon *et al.* (2021), by highlighting that, the successful farmers tend to reinvest gains in productive resources and this also increasing the sustainability and production from an investment. Asset accumulation in the long run also depends on farmers' expectations of future returns and their risk attitude. Diiro *et al.* (2022) noted that many smallholders face severe liquidity constraints given their restricted access to formal credit and irregular income patterns. Furthermore, helping to bridge these short-term cash flow challenges with better access to credit facilities, more flexible loan repayment terms and access to working capital is critical for maintaining on-farm business continuity and easing the financial burden among smallholder farmers.

Financial Capital

Small farms, with little or no access to credit have alarming productivity and efficiency effects (Khanal & Omobitan, 2020). Access to finance is a big problem for smallholder farmers as they often fail to obtain credit and do not have access to the necessary credit resources in order to invest on crops (Mayo & Villarta, 20232). The cost to borrow, including interest rates and processing fees together with high transaction costs, becomes very expensive which reduces profits directly (Mayo & Villarta, 2023). The challenges of meeting smallholder farmers demand through microfinance institutions, have culminated to the call for new and innovative finance approaches (Anane *et al.*, 2021). Yet financial support, for example poverty reduction aid from agencies such as IFAD (International Fund for Agricultural Development), can boost earnings of poor farm households through enabling them to make investments in productivity-enhancing inputs and technologies (Pan *et al.*, 2024).

Profit contributes to potential profit because of the role in good source allocation connected with capacity for solid financial control. A study indicated a positive relationship between farmers' income and their financial analysis and record- keeping, as increased farm income enables farmers to manage their finances well which improves profitability (Bahua, 2023). Well-organized use of financial resources is a key driver of continued viability (Wang & Hu, 2021). Moreover, those farmers who have more financial acumen, assets and information accessibility are the likely recipients of loans and users of new technologies (Raza *et al.*, 2023). Together these studies have emphasized the interrelated factors of capital, technology, social network and financial literacy in enhancing agricultural productivity and facilitating farmers' access to resources (Wei *et al.*, 2021).

H1 Financial Capital has a significant influence on farmer's profitability

Environmental

According to Derbile *et al.* (2020). Associations between environmental and anthropogenic factors and the performance of agricultural production systems.Weeds need to be managed in agroecosystems, with negative pests/weed interactions resulting from differences in their plant resources requirements leading to optimal crop management. Colombia) supports their views. This low standard deviation suggests a consensus among

the respondents concerning the influence of weather conditions. This finding is in line with Gebre *et al.* (2022) who found that sub-Saharan African farmers consider the lack of rain and drought to be significant factors in agricultural planning. Their research indicates that climatic variability has a impact not only on when maize can be planted and harvested, but also on long-term adaptation strategies. The study by Ayuke *et al.* (2021) see that soil fertility management is among the key drivers of smallholder crop yields. Accordingly, they argued that significant spatial variation of the soil conditions within plots necessitates specific strategies for targeting improvement in the productivity on farms. It also throws its weights behind Mahlalela and Kope (2019) as revealed that rainfall availability along with distribution had an influence on rainfed agriculture sustainability. Another explanation for our results is that the relationship between precipitation and farm output may be more complicated than it first appears, and that a direct measure of these effects could potentially mask much of this complexity; rainfall does not just affect immediate farm production but also long-term soil health, nutrient cycling, and pest infestations. Improved water management interventions (such as rainwater harvesting having drought-resistance crop varieties) could be valuable adaptive strategies.

H2 Environment has a significant influence on farmer's profitability

Government Policy

As noted by Minah (2021), the impact of government programs on farmers organizations has been a well researched area with results demonstrating their positive effects on agricultural productivity, farm income and sustainability. This influence is complex and government policies may serve as positive triggers within farmer groups. In effect, such benefits go beyond national input subsidy programs, indicating that members support offertilizer prices were not only due to the free aid provided by farmer organizations but also to the capacity to work in groups (Alonzo *et al.*, 2025), exchange information among themselves, and gain better market access. Programs can also be used to empower women and enhance the productivity of smallholder farms. Additionally, governmental policies are also one of most important factors for the application of soil and water conservation technologies (Subedi *et al.*, 2015; Xie *et al.*, 2008), which is consistent with our findings that government subsidies have significant impacts on CW adoption. (2021) study subsidies that can be used to offset risks and promote sustainability on the side of farmers. As reported in the research by Asante et al. (2021) agricultural policy interventions tends to suffer from implementation gaps, creating inhomogeneous impacts across farmers. Relatedly, Adjognon a& Liverpool-Tasie (2020) observed that though government policies intend to enhance productivity, their usefulness is often contingent on delivery and the local environment. There is still a lack of accessibility and effectiveness. This is consistent with what was recorded by Effah and Munthali (2019) that public programs are to help farmers even though the tedious bureaucracies and limited reach have constrained their practical worth to smallholder farmers. Accessibility in itself is not enough to ensure service access as relevance, transparency and timeliness of agricultural support services also matter. As noted by Gashu *et al.* (2023),policy on agriculture reform should match the needs of farmers and protect rights with provision for accountability and fair distribution. The variation in responses to this study may suggest general obstacles to policy implementation, which further underscores the necessity of good governance through participatory planning and monitoring, and improved extension service accessibility, as well as targeted subsidy approaches.

H3 Government Policy has a significant influence on farmer's profitability

Technology

This is consistent with the results of Mabaya *et al.* (2020) were also encouraged that the technology adoption can be a powerful tool in promoting agricultural productivity but are constrained by social economy and infrastructure. Furthermore, Van Campenhout *et al.* (2019) observed that technology advancement is a fundamental factor in agricultural transition but differences in adoption are usually the result of unequal accessibility, and varying education or support extension. This is consistent with the discovery made by Ainembabazi & Mugisha (2020) that access to farm mechanization enhances labor efficiency, productivity and level of income in one's farm. The findings indicate that farmers in the research area have identified and exploited machanicized implements for operation. Muyanga & Jayne (2021) noted that the uptake of agricultural technologies is largely influenced by these co-variables including education, credit and access to information. It should be noted that continued adoption is based not only on availability but also on relevance of the technology, capacity building of farmers, and institutional support. Efforts to enhance digital literacy, demonstrate technologies on-site and bridge farmers with innovation hubs could contribute in filling the gap in adoption uniformity

H4 Technology has a significant influence on farmer's profitability

MATERIALS AND METHODS

This research has adopted a quantitative causal design to analyze financial capital, environmental policy, government policy and technology influence on profit/financial status of corn farmers. Materials and methods Study area The study was carried out in Cabanglasan, Bukidnon, an area characterized by a large corn agricultural activities beset with capital investment, environmental issues, government policies and technology use. The study involved 254 corn farmers

from one barangay in the municipality of Cabanglasan, Bukidnon who had been farming for at least two years. There were 384 as a target population from which 746 were the total population of farmers with experience of at least two years. Participants were recruited through convenient sampling to provide representative samples from a range of farming rational types and for both small scale and middle large-scale farmers. In this way, the desired sample size of 254 participants was calculated by Cochran's formula for proportions approximately. The anonymity and confidentiality of the participants were assured. The researcher's self-designed questionnaire was used as an instrument which consisted of five sections. In each section, a four- point Likert scale was employed to canvas respondents' attitudes towards factors influencing farm productivity and profitability. Reliability was assessed in a neighboring area on 30 corn farmers, and we obtained a Cronbach's alpha value that meets with Nunnally's (1978) reliable criteria. Descriptive and simple linear regression were also used in this study to test for significant relationship between the farmer's productivity and profitability. The informations collected were analyzed and recorded in MS Excel as per a scoring system.

Table 1: Respondents' Perceptions of Financial Capital Availability

Financial Capital Questions	Mean	Standard deviation	Interpretation
1. I have easy access to financial credit for my farming needs.	2.78	0.69	High
2. I regularly invest in machinery to improve farm productivity.	3.16	0.61	High
3. I have enough capital to purchase necessary farm inputs (seeds, fertilizers, etc.).	3.03	0.74	High
Total	2.99	0.68	High

Legend: 3.26-4.00-Very high; 2.51-3.25- High; 1.76-2.50-Low; 1.00-1.75-Very low

RESULTS AND DISCUSSIONS

Table 1 illustrates, the respondents attribute a relatively high influence on their productivity to financial capital (mean=2.99; s.d.=0.68). A low standard deviation implies there were few variations in responses and that respondents agreed with each other on the contribution that financial capital has in their productivity. This is in consistent with the observation made by Ali *et al.* (2021), who stressed the importance of financial capital as an input for productivity and investment in agricultural activities on farms.

The indicator with the highest mean score was for indicator two (2) "I keep investing in machinery again and again."; 3.16(mean score) ± 0.61(standard deviation) meaning that, in general terms, respondents are constantly modernizing their enterprises. The small standard devia- tion also indicates a strong concurrence between respondents about their investment behaviors. This is consistent with the report of Ogundele *et al.* (2020) who also noted that investment in agricultural technology like machinery is needed for productivity and farm income increase. Jain and Singla (2021) also believes that mechanization adoption has a significant impact on agriculture's modernization and labor efficiency.

Indicator three (3) "I have adequate capital to buy farm inputs" also had high mean value of 3.03 and a standard deviation of 0.74. Although the standard deviation in this regard is a little higher, participants concur to some extend with less variance in experience about adequacy of capital for provision for farm inputs. This is corroborated by the results obtained by Mubarik *et al.* (2020) who observed that a farmer's access to credit has a direct bearing on his ability to purchase necessary inputs that impacts production.

However, the indicator one (1) "I have easy access to financial credit for my farming needs" was 2.78 with a standard deviation of 0.69 indicating moderate difficulties in securing loans. Abebe and Bekele (2019) reported that smallholder farmers are often credit constrained as the rural financial market is underdeveloped. This constraint restricts their capacity to acquire both productivity-enhancing inputs and technology—and stifles the level of output. In this context, provision of institutional support to increase access to agricultural credit is likely an important avenue for enhancing overall farm productivity.

Table 2: Respondents' Perceptions of how environmental factors affect farming

Environmental Questions	Mean	Standard deviation	Interpretation
4. Weather conditions (e.g., rain, drought) are a major factor in my farming decisions.	3.61	0.59	Very High
5. The quality of soil on my farm affects the overall productivity of my crops.	3.55	0.61	Very High
6.Rain is a critical issue in maintaining my farm.	3.46	0.67	Very High
Total	3.54	0.62	Very High

Legend: 3.26-4.00-Very high; 2.51-3.25- High; 1.76-2.50-Low; 1.00-1.75-Very low

Table 2 presents the mean estimates of how respondents perceived environmental factors influenced farming productivity. The average environmental factor overall score was 3.54 (0.62 SD; high to very high). As the standard deviation is relatively low, the participants indicated that they generally agreed with a strong impact of contextual factors on their work. This is consistent with Derbile *et al.* (2016, 2020), who stressed that the physical environment such as variability in rainfall and land man destruction are major limitations to agricultural productivity, especially for small scale farmers in developing countries.

The highest mean score for an indicator was 3.61 (SD=0.59) belonging to indicator four (4) "Weather conditions (e.g., rain, droughts) are a major factor for my farming decisions" which implies that there have been profound effects of rainfall/ drought on their agricultural decision making. Additionally, the low standard deviation suggests that most respondents agree on how weather impacts their life. This corresponds to the result of Gebre *et al.* (2022) who noted that smallholders in sub-Saharan Africa perceived rain variability and drought as key factors for farm planning. Their results imply that the effect of climate variation is not restricted to planting and harvesting dates, but extends to long-run adaptation.

The factor five (5) "The quality of soil on my farm affects the overall productivity of my crops" has a mean-value 3.55 and standard deviation 0.61. This minimal dispersion supports the assumption of soil quality being homogenously perceived as a determinant of productivity among our respondents. This is consistent with the work of Ayuke *et al.* (2021), who identified soil fertility management as one of the most significant determinants of smallholder crop yields. They also pointed out that spatial variability in soil attributes within the plots necessitates site-specific soil management approach for increasing productivity on farms.

Likewise, index six (6), "Rain is an important matter in order to maintain the farm," has a higher standard deviation and therefore exhibits more variability but there is still consensus on its high importance among the participants: M=3.46, SD=.67. This corroborates with the study by Mahlalela and Kope (2019) that rainfall availability and distribution have a strong influence on the sustainability of rainfed farming. For a fuller analysis, we need to bear in mind that rainfall influences not only the output of farms today but also soil health and pest incursions for years — even decades — to come. More efficient water management, including rainwater harvesting and drought-resistant crop species, may be significant as adaptive strategies.

Table 3: Respondents' Perceptions of government policies

Government Policy Questions	Mean	Standard deviation	Interpretation
7. I receive adequate support from government programs (subsidies, loans, etc.) to manage my farm.	2.61	0.87	High
8.The training provided by government agencies has helped me improve my farming practices.	2.61	0.90	High
9.Government agricultural programs are easy to access and beneficial to my farm.	2.61	0.85	High
Total	2.61	0.87	High

Legend: 3.26-4.00-Very high; 2.51-3.25- High; 1.76-2.50-Low; 1.00-1.75-Very low

The average distribution of the respondents' evaluation of government policies on farming is presented in Table 3. The mean and standard deviation for the overall were 2.61 ± 0.87 governments strongly influenced farm operation. The high magnitude of the standard deviation points to wide variation in respondents' perception on government policies effect, which might be due to divergent levels of access or experiences with governmental assistance (Alonzo and Abellana, 2025). This finding is consistent with that of Asante *et al.* (2021), which suggested that the impact of policy interventions in agriculture commonly suffer from implementation gaps—causing heterogeneous effects across farmers. Adjognon and Liverpool-Tasie (2020) also observed that although government policies are designed to enhance productivity, their impact is largely a function of their delivery effectiveness and the local environment.

The value of the indicator 9, access/benefit from agricultural programs was also in trend with others, having a mean of 2.61 and standard deviation of 0.85. The standard deviation is slightly lower than the overall suggesting a little less variability but uncertainty can still be measured. "(Guillian-Barre-Strohl syndrome is a very rare but very serious disease brought on by the polio vaccine that causes muscle paralysis. This finding concurs with Effah and Munthali (2019) who argue that while public programs are meant to assist farmers, bureaucratic red tape, and low coverage can limit their practical value for small-scale farmers.

It is worth considering that just having an access to these ICT tools is not enough, evenly crucial are the relevance, transparency and timeliness of agricultural support services. As noted by Gashu *et al.* (2023), agricultural policy should be farmer Need Based and account For accountability And equity Of distribution, there Should also be the measures To reform The agriculture Policy. In this study, the diversity of responses may signal systemic shortfalls in policy execution indicating the importance of participatory governance, improved extension service and more finely tuned subsidy mechanisms.

Table 4: Respondents' Perceptions of adoption technology.

Technology Questions	Mean	Standard deviation	Interpretation
10. I use modern farming equipment to improve farm efficiency.	3.21	0.64	High
11. I regularly adopt new farming technologies to improve productivity.	3.20	0.81	High
Total	3.20	0.72	High

Legend: 3.26-4.00-Very high; 2.51-3.25- High; 1.76-2.50-Low; 1.00-1.75-Very low

Table 4 Respondent's perception on the adoption of technology use in farming. The mean score was 3.20; the standard deviation was 0.72; it meant a high level of it. The relatively low standard deviation implies that the majority of respondents reported a favorable attitude toward technology adoption, yet there was some diversity in their responses. This is consistent with the results of Mabaya *et al.* (2020) who highlighted on technology adoption plays significant role in enhancing agricultural productivity and can be largely shaped by socio-economic and infrastructure conditions. Furthermore, Van Campenhout *et al.* (2019) pointed out that technological change is a major catalyst for agricultural transformation, but variations in level of adoption sometimes result from differences in access and education or the availability of support services.

Of the indicators, indicator ten (10) "I use modern farming equipment for better farm efficiency" has the highest mean of 3.21 and standard deviation of 0.64. The standard deviation is relatively low, which means that the agreement among respondents is good and consistent in using modern equipment. This corroborates with the results of Ainembabazi &Mugisha (2020) who revealed that availability to farm mechanization encourages labor productivity, farm efficiency and income. These data imply that there are farmers in the study area who are aware of and adopting mechanized equipment into their farming operations.

However, it was 11 "I often take on new farming technology for increasing the productivity" that is scored slightly higher with mean value of 3.20 and standard deviation of 0.81, indicating strong intention of wanting to use technological innovation in order to increase farm efficiency (Table 1). The larger standard deviation for this question means that those answering are significantly more scattered either in terms of having access to, or being familiar with emerging technologies. Muyanga & Jayne (2021) highlighted that the utilisation of agricultural technology is often inhibited by factors including education, access to credit and information. It is pertinent to mention here that long-term adoption hinges not only on availability, but also the relevance of technology, farmer capacity development and continued institutional support. Further, we propose that technological literacy programs, onsite demonstrations or partnerships between farmers and innovation hubs could also reduce disparities in adoption intensity.

Table 5: Respondent's perceptions of their farm profitability

Profitability Questions	Mean	Standard deviation	Interpretation
12. My farm income has increased over the past two years.	3.24	0.62	High
13. I have been able to invest in long-term assets (land, machinery) for my farm.	3.11	0.69	High
14. I have sufficient short-term cash flow to cover my farm's operating expenses.	2.87	0.71	High
Total	3.07	0.67	High

Legend: 3.26-4.00-Very high; 2.51-3.25- High; 1.76-2.50-Low; 1.00-1.75-Very low

Table 5 presents the perceived profitability of farms by respondents. With a SD of 0.67, the mean overall was 3.07, showing that there were high profit earnings obtained by the participants. The rather small standard deviation indicated a relatively consistent level of farm net income perceived by the respondent about their farm profitability. This is consistent with the work of Mabaya *et al.* (2020), who argued that access to critical agricultural inputs and services can enhance farm productivity and profitability, particularly in the presence of enabling economic and policy environments.

With regard to the indicators, indicator twelve (12) "My farm income has increased over the past two years" had a mean of 3.24 and a standard deviation of 0.62, which was perceived to be most achievable among all four indicators. The low standard deviation for this shows that there was a high consensus among the respondents in the improvement of their farm income. As per Makate &Makate (2021), the higher farm income is typically triggered by better access to financial capital, technology and enhanced market linkages in response to which smallholder farmers improve their efficiency and returns. Behind the indicator thirteen (13) "I have been able to invest in long-term assets (land, machinery) for my farm" 3.11(S.D =0.69), as well shows similarities with respect to farmer´s relative responses towards investing

in farming assets. Adjognon *et al.* (2021) stressed how revenues generated by profitable farming businesses often are reinvested in productive assets, hence increasing sustainability and production. Long periods of asset accumulation also represent farmers' optimism and risk preference for future earnings.

Indicator fourteen (14) "I have enough short term cash to cover operating expenses of my farm" had a mean of 2.87 and standard deviation of 0.71, again showing some difference in perceived variability in short-term financial stability though all within about the same range overall. Diiro *et al.* (2022) clarified low access to formal credit, and fluctuating income sources constrain liquidity of many smallholders. Furthermore, support for these short-term cash flow deficits through better access to credit facilities, the provision of flexible loan repayment structures and access to working capital could be instrumental in maintaining consistent farm operations and alleviating financial stress among smallholder farmers.

Table 6: Respondent's perceptions of their farm profitability

Factor Assessed	Overall Mean	Standard Deviation
Financial Capital	2.99	0.68
Environmental	3.54	0.62
Government Policy	2.61	0.87
Technology	3.20	0.72
Profitability	3.07	0.67

Legend: 3.26-4.00-Very high; 2.51-3.25- High; 1.76-2.50-Low; 1.00-1.75-Very low

The summary of the broad mean and standard deviation for all the factors influencing productivity on farming is shown in Table 6. Of all the factors, Environmental Factors had the highest grand mean of 3.54 and standard deviation of 0.62 meaning that (((the respondents consider their environmental setting as the most contributory factor to their farming endeavors testifying on its high overall influence across them; see graph above)2nd. MOST INFLUENCE Of all weather and business environment respectively either negatively or positively contributing amongst each for higher productivity.

Next is Technology Adoption with an average perception of 3.20 and a standard deviation of 0.72, as well as Farm Profitability with mean value of 3.07 and standard deviation of 0.67, being considered high. Financial Capital had a mean of 3.00 and a standard deviation of 0.68 (financial resources are significant as well, however not as importantly as technology and environmental).

Government Policies were the lowest at 2.61 and highest standard deviation with 0.87 indicating higher variations in perceptions and considered as moderate influence than other factors. Altogether, these results indicate that irrespective of the specific factors considered, environmental conditions are key in respondents' overall farming productivity.

Table 7: Regression Analysis on the Factors Influencing Profitability.

ANOVA					
	DF	SS	MS	F	Significance F
Regression	4	4.35703	1.089258316	5.76802	0.000186868
Residual	249	47.0222	0.188844295		
Total	253	51.3793			

Note: Significant if p-value <0.05 and p-value<0.01***

Regression analysis The result of the regression analysis on whether the productivity factors of farmers significantly influence their profitability is presented in Table 7. The F-statistic is 5.76802 and the associated p-value (0.000186868) is less than our significance level -95% confidence interval), so we reject the null hypothesis for both independent variables I above, meaning that at least one of them has a statistically significant impact on female literacy rate. Therefore, productivity factors of financial capital, environmental factor, government policy and technology jointly have a strong impact to profitability. This finding is consistent with Zhang *et al.* (2021) who pointed out that strategic governmental support in combination with innovation policies substantially increases profitability of the farm. It is also corroborated by Purnamasari *et al.* (2023) which stated that farmer productivity increase when complemented by policy and access to finance leads to better financial performance. Additionally, Amaglobeli *et al.* (2024), well designed agricultural interventions – specifically those that improve access to finance and markets - have a strong impact on the growth of farmers' income.

Table 8: Significance of Independent Variables on Profitability

INDEPENDENT VARIABLE	DEPENDENT	VARIABLE
	PROFITABILITY	
	P-VALUE	REMARKS
Financial Capital	0.01	Significant
Environmental	0.04	Significant
Government Policy	0.05	Significant
Technology	0.01	Significant

Note: Significant if p-value <0.05 and p-value<0.01***

Regression analysis The result of the regression analysis on whether the productivity factors of farmers significantly influence their profitability is presented in Table 7. The F-statistic is 5.76802 and the associated p-value (0.000186868) is less than our significance level -95% confidence interval), so we reject the null hypothesis for both independent variables I above, meaning that at least one of them has a statistically significant impact on female literacy rate. Therefore, productivity factors of financial capital, environmental factor, government policy and technology jointly have a strong impact to profitability. This finding is consistent with Zhang *et al.* (2021) who pointed out that strategic governmental support in combination with innovation policies substantially increases profitability of the farm. It is also corroborated by Purnamasari *et al.* (2023) which stated that farmer productivity increase when complemented by policy and access to finance leads to better financial performance. Additionally, Amaglobeli *et al.* (2024), well designed agricultural interventions – specifically those that improve access to finance and markets - have a strong impact on the growth of farmers' income.

CONCLUSION

The profitability of corn producers was highly influenced by financial capital, environmental resources, government support and technological utilization according to the study. Of these attributes, environmental circumstances were the most significant thus indicating that agricultural operations are susceptible to natural forces. Access to finance and enabling public policies are equally important, but obstacles persist that prevent them from achieving their full potential.

According to your findings, raising the incomes of corn farmers means not only arming them with both a financial leg to stand on and a stronger environment but also empowering government intervention. "Beyond that, the adoption of new technology in farming is necessary for productivity and sustainability. The findings underline the importance of further investigation, feasible policy development and educational programs to improve agriculture and support overall rural economy.

REFERENCES

Abellana, J. J., & Alonzo, A. (2025). Distribution Channels and Innovation Strategies as Catalysts for MSME Growth: Insights from Northern Mindanao's Bakery Sector. *American Journal of Social Development and Entrepreneurship, 4*(1), 49-60. https://doi.org/10.54536/ajsde.v4i1.4588

Adjognon, G. S., & Liverpool-Tasie, S. (2020). Drivers and constraints of government agricultural policies in Sub-Saharan Africa. *World Development Perspectives, 20,* 100280. https://doi.org/10.1016/j.wdp.2020.100280

Adjognon, G. S., Bloem, J. R., & Sanoh, A. (2021). The coronavirus pandemic and food security: *Evidence from Mali. Food Policy, 101*, 102050. https://doi.org/10.1016/j.foodpol.2021.102050

Ainembabazi, J. H., & Mugisha, J. (2020). Does mechanization enhance agricultural productivity and income? *Agricultural Economics, 51*(5), 685–699. https://doi.org/10.1111/agec.12581

Ali, M., Khan, M., & Rehman, A. (2021). The role of financial capital in agricultural productivity. *Journal of Economics and Sustainable Development, 12*(10), 45–53. https://doi.org/10.7176/JESD/12-10-06

Alonzo, A. A., & Abellana, J. J. G. (2025). Determinants of E-Commerce Adoption among Agribusinesses in The Philippines: A Technology-Organization-Environment (TOE) Framework Perspective. *WSEAS TRANSACTIONS on BUSINESS and ECONOMICS, 22,* 2214–2224. https://doi.org/10.37394/23207.2025.22.174

Alonzo, A. A., Ganas, E. S., & Abellana, J. J. G. (2025). Roadblocks to Success: Examining the Resources and Performance of Micro, Small, and Medium Enterprises. *International Review of Management and Marketing, 15*(5), 49-59. https://doi.org/10.32479/irmm.19309

Amaglobeli, D., Benson, T., & Mogues, T. (2024). Agricultural producer subsidies: Navigating challenges and policy considerations (IMF Notes, Vol. 2024, Issue 002). International Monetary Fund. https://doi.org/10.5089/9798400285950.068

Anane, I., Zhang, Y., & Nie, F. Y. (2021). The sources of microfinance capital and its effects on farmers' access to credit in Ghana. *SVU International Journal of Agricultural Sciences, 3*(2), 29-38. https://svuijas.journals.ekb.eg/article_157947.html

Ansar, M., Maemunah, M., Said, S., Rahmadani, E., & Dahliana, A. B. (2024). The role of precision agriculture, climate-smart farming, sustainable supply chain management in boosting agricultural

productivity in 2024. *Agricultural Systems Research, 12*(1), 88-104.https://www.researchgate.net/publication/383942256

Asante, F. A., *et al.* (2021). The effectiveness of agricultural policy interventions in Ghana. *International Journal of Agricultural Policy, 9*(2), 115–127. https://doi.org/10.1016/j.ijapol.2021.05.004

Ayuke, F. O., *et al.* (2021). Soil fertility and its relationship with crop productivity in smallholder farms. *Agriculture, Ecosystems & Environment, 319,* 107558. https://doi.org/10.1016/j.agee.2021.107558

Bahua. M. K., (2023). Financial Analysis and Recording Activities of Farmers on Corn Farming.*Journal of Economics Finance and Management Studies*. https://www.researchgate.net/publication/370882660

Brown, T., & Green, L. (2020). Environmental Policy and Agricultural Efficiency. *Journal of SustainableAgriculture,15*(2),223-234. Google Scholar

Derbile, E. K., *et al.* (2020). Environmental constraints on smallholder farming in semi-arid Ghana. *Journal of Environmental Planning and Management, 63*(6), 1012–1030. https://doi.org/10.1080/09640568.2019.1604159

Diiro, G. M., *et al.* (2022). Cash flow and liquidity constraints in smallholder farming systems. *Agricultural Finance Review, 82*(3), 543–560. https://doi.org/10.1108/AFR-09-2021-0110

Effah, B., & Munthali, G. (2019). Public agricultural programs and their impact on productivity in Malawi. *Journal of Public Administration and Policy Research, 11*(3), 29–39. https://doi.org/10.5897/JPAPR2019.0453

Garcia, J., & Patel, R. (2019). The Role of Government Support in Market Stability for Farmers. *AgricultureEconomics,32*(1),78-88. https://www.agricultureeconjournal.org/government-support-farmers

Gashu, K., *et al.* (2023). Agricultural policy reforms and service delivery in Ethiopia. *Food Policy, 116*, 102407. https://doi.org/10.1016/j.foodpol.2023.102407

Gebre, G. G., *et al.* (2022). The impact of climate variability on smallholder farming decisions in Africa. *Climate and Development, 14*(1), 66–78. https://doi.org/10.1080/17565529.2021.1874277

Jain, R., & Singla, R. (2021). Mechanization and agricultural efficiency in India. *Journal of Rural Studies, 84,* 119–128. https://doi.org/10.1016/j.jrurstud.2021.02.004

Khanal, A. R., & Omobitan, O. (2020). Rural finance, capital-constrained small farms, and financial performance. *Agricultural and Applied Economics Association*. https://doi.org/10.1017/aae.2019.45

Lenchucah, P., Pal, N., Appau, A., Throw, A.M., Drope, J. (2020). Government policy and agricultural production: a scoping review to inform research and policy on healthy agricultural commodities: https//doi.org/10.1186/s12992-020-0542-2

Liu, X., Wang, Y., & Zhang, H. (2021). Technology advancements in agriculture: Impact on financial outcomes. *Brazilian Journal of Agricultural Economics.* https://www.repec.org.br/repec/article/download/2415/1611/8825

Mabaya, E., *et al.* (2020). Technology adoption and productivity in African agriculture. *Development Policy Review, 38*(S1), O89–O104. https://doi.org/10.1111/dpr.12419

MacLeod, G., & Holden, A. (2009). Regulation Theory. In International Encyclopedia of Human Geography. https://www.sciencedirect.com/topics/social-sciences/regulation-theory

Mahlalela, P., & Kope, M. (2019). Rainfall variability and its effect on farming in Swaziland. *South African Geographical Journal, 101*(2), 193–207. https://doi.org/10.1080/03736245.2018.1490953

Makate, C., & Makate, M. (2021). Improved farm income through sustainable practices in Southern Africa. *Agricultural Systems, 189,* 103048. https://doi.org/10.1016/j.agsy.2020.103048

Mardi, Z., Hasibuans, & Rafik. (2023). Factors affecting the improvement of economic states of corn farmers. *International Journal of Rural Studies, 29*(3), 156-162. https://ijrs.internationaljournalsllabs.com/index.php/ijsr/aarticle/1376/906/7811

Mayo, R. and Villarta, L. (2023) Obstacle in Corn Production and the Livelihood Activities of Smallholder Farmers in South Central Philippines. *Open Journal of Social Sciences.* https://www.scirp.org/journal/paperinformation?paperid=128717

Minah, M. (2021). What is the influence of government programs on farmer organizations and their impacts? Evidence from Zambia. Applied Economics. https://doi.org/10.1111/apce.12316

Mubarik, M. S., *et al.* (2020). Financial capital and its impact on farm input utilization in Pakistan. *Pakistan Journal of Agricultural Sciences, 57*(2), 321–329. https://doi.org/10.21162/PAKJAS/20.9474

Muyanga, M., & Jayne, T. S. (2021). Constraints to agricultural technology adoption in Africa. *Food Security, 13*(4), 837–855. https://doi.org/10.1007/s12571-021-01162-7

Nunnally, J. C., & Bernstein, I. H. (1978). Psychometric Theory (2nd ed.). This book, discussing standards for Cronbach's alpha, can be found on the Internet Archive: https://archive.org/details/psychometrictheo00nunn

Ogundele, O., *et al.* (2020). Modern farming practices and agricultural output among smallholders in Nigeria. *Journal of Agricultural Extension, 24*(3), 95–105. https://doi.org/10.4314/jae.v24i3.9

Pan, H., Yao, L., Zhang, C., Zhang, Y., & Gao, Y. (2024). Research on financial poverty alleviation aid for increasing the incomes of low-income Chinese farmers. *Sustainability, 16*(3), 1057. https://doi.org/10.3390/su16031057

Puupponen, A., Lonkila, A., Savikurki, A., Karttunen, K., Huttunen, S. and Ott, A. (2022). Finnish dairy farmers' perceptions of justice in the transition to carbon-neutral farming. *Journal of Rural Studies. 90*(2), 104 –

112. https://doi.org/10.1016/j.jrurstud.2022.01.014

Purnamasari, M., Huang, W.C and Priyanto, B. (2023). The Impact of Government Food Policy on Farm Efficiency of Beneficiary Small-Scale Farmers in Indonesia. *Agriculture, 10*(4), 98. https://doi.org/10.3390/agriculture10040098

Ray, N., Clarke, G. and Waley, P. (2021). The impact of contract farming on the welfare and livelihoods of farmers: A village case study from West Bengal. *Journal of Rural Studies. 86* (8), 127 –135. https://doi.org/10.1016/j.jrurstud.2021.06.003

Raza, A., Tong, G., Sikandar, F., Erokhin, V., & Tong, Z. (2023). Financial literacy and credit accessibility of rice farmers in Pakistan. *Sustainability, 15*(4), 2963. https://doi.org/10.3390/su15042963

Rosario, M. G., Delos Santos, T. A., & Ramos, E. L. (2021). Constraints to agricultural credit access in Southeast Asia: The Philippine experience. *Asian Journal of Agriculture, 24*(2), 78–89.

Severini, S., & Biagini, L. (2023). The direct and indirect effect of CAP support on farm income enhancement: A farm-based econometric analysis [Withdrawn manuscript]. arXiv. https://arxiv.org/abs/2009.07684

Smith, A., & Jones, P. (2021). Capital Regulation and Its Effects on Agricultural Productivity. *Journal of Economic Policy, 18*(4), 99-115. https://www.economicpolicyjournal/capital-regulation

Tambo, J. A., Kassie, M., & Di Falco, S. (2020). Risk and credit markets in African agriculture. Food Policy, 91, 102034. https://www.sciencedirect.com/.science/article/pii/S030691921930457X

Van Campenhout, B., *et al.* (2019). Technology diffusion in agriculture: Evidence from East Africa. *World Development, 117,* 20–33. https://doi.org/10.1016/j.worlddev.2019.01.018

Wang J., & Hu X. (2021). Research on corn production efficiency and influencing factors of typical farms: Based on data from 12 corn-producing countries from 2012 to 2019. PLoS ONE. http://doi.org/10.1371/journal.pone

Wei, Y., Zhong, F., Luo, X., Wang, P., & Song, X. (2021). Ways to improve the productivity of oasis agriculture: Increasing the scale of household production and human capital? *Agriculture, 11*(12), 1218. https://doi.org/10.3390/agriculture11121218

Yakin, A., Putri, H. F., & Amiruddin, N. (2022). Profitability and profit risk analysis of corn farming in District of Utan, Sumbawa Regency: A cross-sectional study. *IOP Conference Series Earth and Environmental Science, 1107*(1), 012049. https://doi.org/10.1088/1755-1315/1107/1/012049

Zhang, R., Ma, W., & Liu, J. (2021). Impact of government subsidy on agricultural production and pollution. *Journal of Cleaner Production, 278,* 124806. https://doi.org/10.1016/j.jclepro.2020.124806