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ARTICLE

Profitability at the Starting Line: New Entrants in Rice Trading in Nueva Ecija

Carl Louie R. Nocum [1], Dave M. Pastorfide [2*]

[1] College of Management and Business Technology, Atate Campus, Nueva Ecija University of Science and Technology, Palayan City 3130, Philippines

[2] College of Management and Business Technology, San Isidro Campus, Nueva Ecija University of Science and Technology, San Isidro 3106, Philippine

ABSTRACT

This study explores the profitability and its influencing factors among new entrants in rice trading in the Philippines, particularly in Nueva Ecija. A descriptive-quantitative research design was employed, involving 72 new rice traders selected through random sampling. Multiple linear regression analysis was used to determine the significance and impact of various independent variables on profitability. The study is anchored on Frank Knight's Risk Theory of Profit and the Resource-Based View (RBV) as its theoretical framework. Findings reveal that variables such as years in rice trading, financial capital knowledge, initial investment, and logistics/transport capabilities have a positive and significant effect on profitability, implying that increases in these factors are associated with increased profit. Conversely, perceived market competition negatively affects profitability. Surprisingly, operational management skills and strength in supply chain also exhibit negative relationships with profitability, suggesting that higher proficiency in these areas may lead to reduced earnings. While the results largely support Knight's Risk Theory and the Resource-Based View theory, certain findings, such as the negative impact of supply chain strength,

*CORRESPONDING AUTHOR:
Dave M. Pastorfide, College of Management and Business Technology, San Isidro Campus, Nueva Ecija University of Science and Technology, San Isidro 3106, Philippine; Email: dvpastorfide@ineust.ph.education

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partially contradict RBV assumptions. The study offers practical insights for agribusiness development and contributes to broader economic objectives by supporting sustainable rural enterprise and inclusive growth.
Keywords: Knight's Risk Theory of Profitability; Resource-Based View(RBV); New Rice Traders; Profitability; Rural Entrepreneurship; Logistics and Supply Chain

1. Introduction

Rice remains a staple food and a critical agricultural commodity across the ASEAN region, underpinning food security and rural livelihoods for millions of people. As one of the world's largest rice producers and consumers, ASEAN countries face persistent challenges such as fluctuating market prices, fragmented supply chains, climate vulnerabilities, and limited access to affordable financing for smallholder farmers and traders [1]. These factors collectively affect productivity and the competitiveness of rice value chains, necessitating innovative approaches to financing, technology adoption, and policy support to sustain growth and ensure food self-sufficiency. Within this region, the Philippines, particularly the province of Nueva Ecija, often dubbed the "Rice Granary of the Philippines", presents a compelling case study where these challenges and opportunities converge, shaping the dynamics of rice trading and agricultural development at the local level [2].

Aspiring entrepreneurs in the rice trading sector find it an attractive hub, but they face several significant challenges that hinder profitability. These challenges include fluctuating market prices heavily influenced by dominant rice mills and agents who set prices with little transparency, forcing traders into a "take it or leave it" scenario [3]. Intense competition from established traders within a traditional, multi-layered supply chain involving farmers, paddy dealers, millers, wholesalers, and retailers further complicates market entry [4]. Additionally, limited access to affordable and formal financing compels many traders to rely on high-interest loans from informal lenders, perpetuating debt cycles and restricting investments in operational improvements [5, 6]. New entrants also often lack comprehensive understanding of the complex operational requirements and supply chain mechanisms, including procurement, transportation, storage, milling, and distribution, which leads to inefficiencies such as poor grain quality, high transportation costs, and low milling recovery rates; these challenges are exacerbated by natural factors like typhoons and pests that affect production stability [7]. Together, these factors create a challenging environment for new rice traders in Nueva Ecija, necessitating strategic approaches, improved financing access, and capacity-building to enhance their success prospects. Recent studies have highlighted the complexities within the rice value chain in the Philippines. For instance, Agcaoili et al. identified high production and marketing costs, coupled with poor market linkages, as primary barriers to profitability for smallholder farmers and new traders [8]. Similarly, Galvez and Telic emphasized that post-harvest losses, accounting for up to one-third of rice production, significantly affect the efficiency and sustainability of the rice supply chain [9].

Access to financing remains a critical hurdle for rice traders and farmers in Nueva Ecija, significantly affecting their productivity and profitability. Empirical studies have demonstrated that improved credit access can lead to substantial increases in rice yields, with Jimi et al. [10] reporting a 14% yield improvement linked to better financial support. In practice, innovative financing models such as those supported by LANDBANK have empowered farmer cooperatives by allowing repayment of loans in kind—using harvested palay instead of cash—thereby reducing the financial burden during lean seasons and protecting farmers from exploitative market practices dominated by middlemen [11]. Despite these advances, many smallholder farmers and traders still face limited access to affordable credit, which constrains their ability to invest in modern inputs, infrastructure, and climate-resilient practices necessary to sustain and improve production [12]. This financing gap is compounded by the fragmented nature of the rice supply chain, where numerous actors—from farmers to millers and traders—compete intensely, leading to thin

profit margins and heightened market competition [13].

The rice trading sector in Nueva Ecija operates within a broader national context characterized by a persistent supply-demand imbalance [14]. The Philippines faces a growing rice supply deficit driven by shrinking arable land, rising input costs, climate vulnerabilities such as typhoons, and a steadily increasing population that pushes rice consumption beyond domestic production capacity [15]. This deficit has made the country the world's largest rice importer, heavily reliant on imports from countries like Vietnam. The government has implemented different interventions to support farmers through machinery, training, and credit assistance, but significant productivity gains remain uncertain. Within this challenging environment, new rice traders in Nueva Ecija try to navigate not only intense local competition but also the pressures of national food security concerns and fluctuating global rice markets, which influence domestic prices and supply stability.

Understanding these interconnected challenges is essential for developing strategies that bridge the gap between opportunity and sustainability for new rice traders in Nueva Ecija. This study aims to examine the factors influencing the average monthly profit of new rice traders in Nueva Ecija by investigating both their demographic and strategic business characteristics. Key demographic variables include years in agribusiness, initial investment, type of ownership, sources of funding, and reported average monthly profit. In parallel, the study evaluates the traders' strategic practices in terms of financial capital availability, perceived market competition, operational management skills, supply chain strength, transport accessibility, and access to institutional support services. To determine the extent to which these factors influence profitability, a multiple linear regression analysis is employed, enabling the prediction of income based on these variables. Guided by Frank Knight's Risk, Uncertainty, and Profit Theory, the study explores how entrepreneurs generate profit through their ability to manage uncertainty and make informed decisions in unpredictable market conditions. Knight's framework, which differentiates between insurable risk and true uncertainty, provides a relevant lens for understanding the dynamics of rice trading, where market volatility is high. Additionally, the study draws on the Resource-Based View Theory (RBV), which posits that internal resources such as capital, knowledge, and logistical assets are essential for achieving competitive advantage and sustained profitability. By integrating these theoretical perspectives and employing regression-based quantitative methods, the study seeks to uncover how both structural and strategic factors interact to shape the financial outcomes of new entrants in the rice trading sector. The research is grounded in the hypothesis that internal and external variables significantly affect profitability, offering practical insights into entrepreneurial performance in resource-constrained rural economies.

2. Materials and Methods

This study employed a descriptive research design and adopted a quantitative research approach to examine the profitability of new entrants in the rice trading industry in Nueva Ecija, Philippines. This design was deemed appropriate as it allows for the systematic description and quantification of patterns, relationships, and trends within a specific population. The research was guided by the Resource-Based View (RBV) theory, which suggests that firm performance is influenced by the strategic use of internal resources such as capital, capabilities, and operational efficiency. The Frank Knight's Risk, Uncertainty, and Profit Theory was also utilized in this research to determine how risk and uncertainty in agricultural enterprises affect their profitability.

The study was conducted in Nueva Ecija, a province recognized as the "Rice Granary of the Philippines," due to its central role in rice production and distribution. The target population comprised new rice traders operating for less than three years. A total of 72 respondents were selected using random sampling, a core method within probability sampling, where each member of the population has an equal and known chance of being selected. This technique ensured that the study captured insights from traders who are actively navigating the early stages of rice trading and encountering common start-up challenges. The sample size was determined based on the expected effect size and previous studies on small agricultural enterprises. The survey was con-

ducted in the later part of 2024, specifically in November, and continued into the early months of 2025, beginning in January.

The primary research instrument was a structured survey questionnaire developed based on existing literature and validated through expert review by 3 agribusiness researchers. The questionnaire consisted of two sections:

- Part I gathered socio-demographic and enterprise-related data, including age, gender, years in trading, capital investment, source of financing, and number of employees.
- Part II included 18 items measuring profitability factors such as pricing strategies, volume traded, logistics, market access, and perceived profitability, assessed on a 4-point Likert scale (4 = Strongly Agree to 1 = Strongly Disagree).

A pilot test involving 10 rice traders outside the main sample was conducted to ensure clarity, relevance, and consistency of the items. The instrument's reliability was tested using Cronbach's Alpha, resulting in a coefficient of 0.81, indicating acceptable internal consistency.

Data were collected over four weeks through face-to-face administration of the survey by trained research assistants. Descriptive statistics such as frequency, percentage, and mean were used to summarize the respondents' profiles and trading characteristics. For hypothesis testing and predictive modeling, the study utilized Multiple Linear Regression Analysis (MLA) to examine the strength and significance of the relationship between independent variables (e.g., capital, pricing, supply chain access) and the dependent variable (profitability). The use of MLA allowed for the simultaneous assessment of multiple predictors, enabling a comprehensive understanding of the factors that influence profitability.

As part of ethical considerations, approval for the conduct of the study was obtained from the Institutional Research Ethics Committee of the affiliated university. Informed consent was secured from all participants. The study ensured confidentiality, anonymity, and voluntary participation in compliance with ethical research standards.

3. Results

3.1. Profile of the New Entrants Rice Traders

3.1.1. Years Engaged in Rice Trading

Table 1 presents the distribution of the respondents based on the number of years they have been engaged in the rice trading business. The data indicate that the highest proportion of new entrants have been in the business for 2 years, accounting for 44.44% (n = 32) of the sample. This is followed by traders with 1 year and 3 years of experience, both with a frequency of 12 or 16.67% each. Meanwhile, those with 11 months and below and those with 4 years of experience each had a frequency of 8, representing 11.11% of the respondents, respectively.

3.1.2. Initial Capital Investment

Table 2 presents the distribution of initial capital investment among new rice traders in Nueva Ecija. The majority of respondents (n = 44 or 61.11%) reported starting their business with capital ranging from ₱100,000 to ₱190,000. This was followed by ₱200,000 to ₱290,000, reported by 22.22% (n = 16) of the traders. A smaller group of respondents (11.11%, n = 8) began with a capital of ₱ 90,000 or below, while only 5.56% (n = 4) reported an initial investment of ₱300,000 or more.

3.1.3. Sources of Funding

Table 3 displays the sources of initial funding among new entrants in the rice trading business in Nueva Ecija. The majority of respondents (55.56%, n = 40) reported obtaining capital through bank loans, while 44.44% (n = 32) relied on personal savings to start their business ventures.

3.1.4. Type of Ownership

Table 4 presents the distribution of ownership types among new entrants in rice trading in Nueva Ecija. The data show that the overwhelming majority of respondents (88.89%, n = 64) operate under a sole proprietorship structure. In contrast, only 11.11% (n = 8) reported having a partnership ownership arrangement.

Table 1. Years engaged in rice trading.

Years Engage in Rice Business	Frequency	Percentage
11 months and below	8	11.11%
1 year	12	16.67%
2 years	32	44.44%
3 years	12	16.67%
4 years	8	11.11%
Total	**72**	**100.00%**

Table 2. Initial capital investment.

Initial Investment	Frequency	Percentage
90,000 and below	8	11.11%
100000–190,000	44	61.11%
200,000–290,000	16	22.22%
300,000 and above	4	5.56%
Total	**72**	**100.00%**

Table 3. Sources of funding.

Sources of Funding	Frequency	Percentage
Personal Saving	32	44.44%
Banking Loan	40	55.56%
Total	**72**	**100.00%**

Table 4. Type of ownership.

Type of Ownership	Frequency	Percentage
Sole Proprietorship	64	88.89%
Partnership	8	11.11%
Total	**72**	**100.00%**

3.2. Evaluation of Strategies of the New Entrants in Rice Trading

3.2.1. Financial Capital Availability

Table 5 presents the perceived availability of financial capital among new rice traders in Nueva Ecija. The first indicator, "I had enough starting capital to run the business efficiently," recorded a weighted mean of 3.28, interpreted as Strongly Agree, with a standard deviation of 0.56. Similarly, the second indicator, "My capital allows me to replenish stocks consistently," also received a weighted mean of 3.28 and standard deviation of 0.56, interpreted as Strongly Agree. The third indicator, "I have access to additional funding (loans and investors)," obtained a weighted mean of 3.22, with a higher standard deviation of 0.89, and was interpreted as Agree.

3.2.2. Perceived Marketing Competitions

Table 6 presents the perceptions of marketing competition among new rice traders in Nueva Ecija, Philippines. The first two indicators, "There are many rice traders in my area" and "Price competition is intense in my local market," both received a weighted mean of 3.56, interpreted as Strongly Agree, with a standard deviation of 0.49. The third indicator, "Competitors affect my ability to grow or sustain profit," recorded a slightly higher weighted mean of 3.61 with a standard deviation of 0.48, also interpreted as Strongly Agree.

3.2.3. Operational Management Skills

Table 7 presents the survey results on the operational management skills of new rice traders in Nueva Ecija, Philippines. The first indicator, "I can manage em-

ployees and inventory efficiently," received the highest weighted mean of 3.33, interpreted as Strongly Agree, with a standard deviation of 0.47. The second indicator, "I understand how rice trading operations work (e.g., procurement, pricing, and delivery)," recorded a weighted mean of 3.28, verbally interpreted as Expert, with a standard deviation of 0.49. The third indicator, "I am confident in managing financial and record-keeping tasks," obtained a weighted mean of 3.22, interpreted as Proficient, with a standard deviation of 0.51. The overall average weighted mean was 3.28, with an aggregate interpretation of Expert.

Table 5. Financial capital available.

No.	Indicators	Weighted Mean	Verbal Interpretation	Standard Deviation
1	I had enough starting capital to run the business efficiently.	3.28	Strongly Agree	0.56
2	My capital allows me to replenish stocks consistently.	3.28	Strongly Agree	0.56
3	I have access to additional funding (loans and investors).	3.22	Agree	0.89
	Average Weighted mean	**3.26**	Strongly Agree	

Table 6. Perceived marketing competitions.

No.	Indicators	Weighted Mean	Verbal Interpretation	Standard Deviation
1	There are many rice traders in my area.	3.56	Strongly Agree	0.49
2	Price competition is intense in my local market	3.56	Strongly Agree	0.49
3	Competitors affect my ability to grow or sustain profit	3.61	Strongly Agree	0.48
	Average Weighted mean	3.57	Strongly Agree	

Table 7. Operational management skills.

No.	Indicators	Weighted Mean	Verbal Interpretation	Standard Deviation
1	I can manage employees and inventory efficiently.	3.33	Expert	0.47
2	I understand how rice trading operations work (e.g., procurement, pricing, delivery).	3.28	Expert	0.49
3	I am confident in managing financial and record-keeping tasks.	3.22	Proficient	0.51
	Average Weighted mean	**3.28**	**Expert**	

3.2.4. Strength of Supply Chain

Table 8 presents the survey findings regarding the strength of the supply chain among rice traders in Nueva Ecija, Philippines. Indicators 1 and 2—"My rice suppliers are consistently reliable" and "I have easy access to rice supplies even during high demand or shortages"—both recorded a weighted mean of 3.28, with a verbal interpretation of Very Strong and a standard deviation of 0.45. The third indicator, "I consistently maintain the quality and volume of my rice supply," achieved a weighted mean of 3.33, also interpreted as Very Strong, with a standard deviation of 0.47. These results reflect an overall perception of strength and reliability within the supply chain systems of the respondents.

3.2.5. Logistics/Transport Capabilities

Table 9 presents the survey results on the logistics and transport capabilities of rice traders in Nueva Ecija, Philippines. Both indicator 1 ("I have access to reliable transport for my goods") and indicator 3 ("I own or regularly use delivery assets such as trucks or tricycles") obtained a weighted mean of 3.50, interpreted as Strongly Agree, with a standard deviation of 0.50. Indicator 2 ("Delays or disruptions in delivery are rare") recorded a weighted mean of 3.44, also with a verbal interpretation of Strongly Agree and the same standard deviation of 0.50. The overall average weighted mean across all items was 3.48, indicating a high level of agreement regarding logistics readiness among respondents.

Table 8. Strength of supply chain.

No.	Indicators	Weighted Mean	Verbal Interpretation	Standard Deviation
1	My rice suppliers are consistently reliable.	3.28	Very Strong	0.45
2	I have easy access to rice supplies even during high demand or shortages.	3.28	Very Strong	0.45
3	I consistently maintain the quality and volume of my rice supply.	3.33	Very Strong	0.47
	Average Weighted mean	3.30	Very Strong	

Table 9. Logistics/transport capabilities.

No.	Indicators	Weighted Mean	Verbal Interpretation	Standard Deviation
1	I have access to reliable transport for my goods.	3.50	Strongly Agree	0.5
2	Delays or disruptions in delivery are rare.	3.44	Strongly Agree	0.5
3	I own or regularly use delivery assets (truck and tricycle).	3.50	Strongly Agree	0.5
	Average Weighted mean	3.48	Strongly Agree	

3.2.6. Access to Support Services

Table 10 presents the survey results regarding rice traders' access to support services in Nueva Ecija, Philippines. Indicators 2 ("I received assistance from government or private institutions") and 3 ("I am aware of programs that support rice traders like me") both recorded a weighted mean of 2.06, with a verbal interpretation of Disagree and a standard deviation of 0.84. Indicator 1 ("I have attended training or seminars related to rice trading or business") obtained a weighted mean of 1.94, also interpreted as Disagree, with the same standard deviation of 0.84. The overall average weighted mean is 2.02, indicating a general disagreement among respondents regarding their access to institutional support services.

3.2.7. Average Monthly Profit

Table 11 presents the distribution of average monthly profit among rice traders in Nueva Ecija, Philippines. The data shows that the profit ranges of ₱55,000–₱74,999 and ₱75,000–₱94,999 each account for 27 respondents or 37.50% of the sample. Meanwhile, ₱35,000–₱54,999 was reported by 18 respondents or 25.00% of the total. These figures indicate that the majority of traders fall within mid-tier profit brackets, with no reported concentration in either the lowest or highest income categories.

Table 10. Access to support services.

No.	Indicators	Weighted Mean	Verbal Interpretation	Standard Deviation
1	I have attended training or seminars related to rice trading or business.	1.94	Disagree	0.84
2	I received assistance from government or private institutions.	2.06	Disagree	0.84
3	I am aware of programs that support rice traders like me.	2.06	Disagree	0.84
	Average Weighted mean	2.02	Disagree	

Table 11. Average monthly profit.

Average Monthly Profit	Frequency	Percentage
35,000–54,999	18	25.00%
55,000–74,999	27	37.50%
75,000–94,999	27	37.50%
Total	72	100.00%

3.3. Factors Influencing Profitability of New Rice Trades

The findings, as presented in **Table 12**, reveal that several internal and external factors significantly influence the profitability of new rice traders in Nueva Ecija. The data indicate that the regression model explains a high proportion of variance in profitability among new rice traders in Nueva Ecija, with an R^2 of 0.9315 and an adjusted R^2 of 0.9215. This suggests that 93.15% of the variation in average monthly profit can be attributed to the nine predictor variables included in the model. The model is statistically significant (F = 93.67, $p < 0.0001$), indicating strong explanatory power and overall model fit. Notably, eight out of nine variables showed a statistically significant relationship with profitability, underscoring the multifaceted nature of success in the rice trading industry.

Among the internal business factors, the number of years engaged in rice trading was found to be a significant predictor of profitability ($p = 0.0033$). This result implies that increased experience contributes to more informed decision-making and improved capacity to respond to market dynamics, thereby enhancing profit outcomes. Similarly, initial investment ($p < 0.0001$) and financial capital availability ($p = 0.0001$) demonstrated statistically significant positive effects on profitability. These findings suggest that greater capital allocation—either at the inception of the enterprise or during ongoing operations—facilitates business scaling and enables more effective responses to fluctuating market demands.

Sources of funds, particularly the availability of external financing or diversified funding streams, also significantly affected profitability ($p < 0.0001$). This highlights the importance of financial accessibility in sustaining operations and managing risks. On the operational side, logistics and transportation ($p < 0.0001$) had the strongest positive effect among all variables, with a coefficient of 17,827.75. This underscores the critical role that efficient transport and delivery systems play in reducing spoilage, expanding market reach, and ensuring timely trade.

Table 12. Multiple regression analysis on the factors affecting profitability of new rice traders.

Regression Model Summary				
	Multiple R = 0.9651	$R^2 = 0.9315$	Adjusted $R^2 = 0.9215$	Standard Error = 4603.30
	F = 93.67	Significance F = 1.16×10^{-32}		
Independent Variables				
No.	**Variable**	**Coefficient**	**P-Value**	**Interpretation**
1	Years in Rice Trading	2023.21575	0.00327766	Significant
2	Initial Investment	0.08936387	2.0304E-05	Significant
3	Sources of Funds	16646.2855	2.301E-10	Significant
4	Financial Capital	8100.01516	0.00014576	Significant
=5	Perceived Competition	−8344.80017	1.5219E-05	Significant
6	Operation Management Skills	−8435.93089	0.00201508	Significant
7	Strength in Supply Chain	−10570.1535	0.00096601	Significant
8	Logistics/Transport	17827.7482	8.1444E-10	Significant
9	Access to Support Services	468.704862	0.70677084	Not Significant

In contrast, three variables were found to have negative but significant effects on profitability. Perceived competition ($p < 0.0001$), operation management skills ($p = 0.0020$), and strength in supply chain ($p = 0.0010$) showed inverse relationships with profit levels. The negative association with perceived competition suggests that higher competitive pressure may erode profit margins or reduce market share for new entrants. Interestingly, both operation management skills and supply chain strength, typically considered assets, were negatively correlated with profitability. This may indicate that overemphasis on rigid systems, bureaucracy, or premature scaling efforts could burden small-scale traders and lead to inefficiencies instead of gains.

Meanwhile, access to support services ($p = 0.7068$) was found to be not significant, suggesting that the avail-

able public or private institutional support may not yet be adequately tailored or accessible to meet the immediate needs of new rice traders.

3.4. Projected Profitability Based on Different Variables Affecting It

Table 13 presents the projected profitability of a new rice trader in Nueva Ecija using the established Multiple Linear Regression Model. The prediction scenario was based on a realistic profile: 2 years of trading experience, an initial capital of ₱100,000 sourced from a bank loan, high financial capital literacy, strong logistics/transport capacity, high perceived market competition, developing operational management skills, and a weak supply chain. Using the regression coefficients from the prior analysis, the model estimates an expected profit of ₱85,091.34 for this profile.

Table 14 presents the projected profitability of a rice trader under Scenario 2 using the established Multiple Linear Regression Model. This prediction scenario assumes a trader with 5 years of experience, an initial capital of ₱80,000 obtained through a bank loan, and a high level of financial capital knowledge. The trader operates in a moderately competitive market, demonstrates proficient operational management skills, and exhibits weak strength in the supply chain. Despite this, the trader benefits from very high logistics and transportation capacity. Based on these assumptions and applying the regression coefficients derived from prior analysis, the model estimates an expected profit of ₱106,737.53.

Table 13. Summary of prediction (scenario 1).

Variables	Assumption Values	Projected Profit
Years in Rice Trading	2	₱85,091.34
Initial Investment	P100,000	
Fund Sources	Bank Loan	
Financial Capital knowledge	High or = 3	
Perceived Market Competition	High or = 3	
Operational Management Skills	Developing Skills or = 2	
Strength in Supply Chain	Weak or = 2	
Logistics/Transportation	High or 3	

Table 14. Summary of prediction (scenario 2).

Variables	Assumption Values	Projected Profit
Years in Rice Trading	5	₱106,737.529
Initial Investment	P80,000	
Fund Sources	Bank Loan	
Financial Capital knowledge	High or = 3	
Perceived Market Competition	Moderate or = 2	
Operational Management Skills	Proficient or = 3	
Strength in Supply Chain	Weak or = 2	
Logistics/Transportation	Very High or 4	

4. Discussion

4.1. Profile of the New Entrants Rice Traders

4.1.1. Years Engaged in Rice Trading

The data reveal that a significant portion of new rice trading entrants in the province of Nueva Ecija are relatively recent players in the industry, with 44.44% having only two years of business experience. This reflects a surge of rural entrepreneurship amidst persistent development barriers. Globally, this trend corresponds with observations that rural entrepreneurs often encounter limited access to capital and market information, which contributes to shorter business lifespans [15]. Similar findings were reported in Vietnam, where access to capital was identified as the most significant factor influencing rural women's entrepreneurial intentions, underscoring the universal importance of fi-

nancial resources in enabling rural enterprise development [16]. Anchored in the Resource-Based Theory, the relatively brief tenure of these traders suggests they are still in the formative stage of acquiring essential resources such as supply chain linkages, financial capital, and market knowledge required for building and sustaining competitive advantage [17].

This scenario also aligns with Frank Knight's Risk Entrepreneurial Profit Theory, which emphasizes that profit is a reward for bearing uncertainty in unpredictable market environments [18]. The concentration of early-stage participants implies a sector where individuals are actively engaging in entrepreneurial risk-taking without the certainty of returns. On a local level, constraints such as poor access roads, limited machinery, and restricted market connectivity further worsen the challenges of new entrants. These structural barriers increase exposure to financial and operational risk, often resulting in elevated turnover and diminished long-term viability. As such, the data emphasize both the precariousness and promise of early entrepreneurial ventures in Nueva Ecija's rice trading landscape, highlighting an urgent need for policy support focused on resource mobilization, infrastructure development, and knowledge transfer.

4.1.2. Initial Capital Investment

The data reveal that the majority of new rice traders in rural Cabanatuan City, Nueva Ecija, began their operations with moderate capital investments ranging from ₱100,000 to ₱190,000, while only a small fraction (5.56%) reported investing ₱300,000 or more. This pattern underscores the financial constraints often faced by rural entrepreneurs, who typically rely on limited savings or informal lending sources. Interpreted through the lens of the Resource-Based Theory, this suggests that many of these traders lack access to valuable, rare, and inimitable resources, particularly sufficient financial capital and sophisticated logistical capabilities that are fundamental to achieving and maintaining a competitive advantage in agribusiness [17].

Importantly, the theory suggests that competitive strength lies not merely in the volume of resources but in their strategic organization and deployment [18]. The modest capital levels indicate that many traders operate under tight financial margins, which can limit scalability and resilience in volatile markets. However, their willingness to enter the sector despite these limitations reflects the entrepreneurial drive to seek profit as a reward for uncertainty, aligning with Frank Knight's Risk-Bearing Theory. In this context, entrepreneurial profit is seen as compensation for assuming the risk of entering a competitive and resource-constrained industry without guaranteed returns. The findings highlight both the ambition and vulnerability of financially constrained agribusiness ventures. The same study in Jordan, where financial constraints and knowledge gaps were identified as key barriers to the effective implementation of climate-smart agricultural practices, reaffirms that limited access to capital continues to be a significant hurdle for rural agribusinesses, affecting their resilience and scalability in uncertain environments. This points to the need for enhanced access to credit facilities and financial literacy programs tailored for rural market entrants.

4.1.3. Sources of Funding

The findings reveal a dual pattern in financing strategies among new rice traders in rural Nueva Ecija, characterized by a growing reliance on bank loans alongside a continued dependence on personal savings. This trend reflects a transitional phase in rural financial development, where access to formal credit is gradually improving but remains uneven and often insufficient. The increasing uptake of bank financing may signal progress in financial inclusion, likely influenced by targeted interventions such as microfinance programs, rural banking reforms, and government-backed financial literacy campaigns [18]. These advances align with broader developmental trajectories observed in many emerging economies, where efforts to expand financial access are underway yet still constrained by systemic limitations.

Despite these gains, the persistent reliance on personal savings indicates that many traders still face structural barriers to formal credit access, including stringent collateral requirements, low levels of financial literacy, and institutional risk aversion [19]. These findings are consistent with international studies showing that entrepreneurs in lower-middle-income countries often underutilize formal credit markets despite policy efforts

aimed at bridging this gap [20, 21]. Within the framework of the Resource-Based Theory, access to capital, especially through formal channels, is a critical enabler of competitive advantage [22]. Therefore, the coexistence of traditional and formal financing methods highlights the need for more inclusive and adaptive financial systems tailored to the specific constraints and opportunities faced by rural agribusinesses. Strengthening these systems can play a pivotal role in enhancing business resilience and driving sustainable economic growth in the province.

4.1.4. Type of Ownership

The data indicate that the predominance of sole proprietorship among new rice traders in Nueva Ecija mirrors broader trends in rural agricultural economies, where individual entrepreneurs often assume full ownership due to constrained access to formal capital, institutional support, and organizational infrastructure [23]. This pattern aligns with the Resource-Based Theory, which posits that in the absence of scalable resources, entrepreneurs strategically deploy personal assets—such as localized knowledge, social capital, and informal supply networks—as substitutes for formal structures to gain and maintain competitive advantage [22]. In these contexts, ownership decisions are not merely structural but reflect adaptive strategies tailored to resource scarcity.

Furthermore, this ownership model reinforces Frank Knight's Risk-Bearing Theory, which asserts that entrepreneurial profit arises from managing uncertainty. Sole proprietors in rural trading environments often shoulder the full spectrum of market and operational risks, including volatile commodity prices, weather-related disruptions, and fluctuating consumer demand. Their autonomy allows for rapid decision-making and responsiveness traits, especially vital in rural settings characterized by economic instability and limited institutional buffers. Consequently, the prevalence of sole proprietorship underscores both the vulnerability and resilience of new entrants in Nueva Ecija's rice trading sector, highlighting the need for policies that expand access to capital and build entrepreneurial capacity without undermining the flexibility that sole ownership offers.

4.2. Evaluation of Strategies of the New Entrants in Rice Trading

4.2.1. Financial Capital Availability

The findings indicate that new rice traders in rural areas of Nueva Ecija, Philippines, exhibit a notable degree of confidence in their internal financial capacity, suggesting a shared perception of resource adequacy essential for sustaining day-to-day operations. This perception resonates with the Resource-Based Theory, which emphasizes that internal financial capital, when strategically managed, serves as a critical and inimitable resource that can drive sustained competitive advantage in volatile agribusiness environments [24]. The coherence in their self-assessment reflects a degree of organizational maturity, wherein entrepreneurs perceive their capital as sufficient for navigating operational demands.

In contrast, the observed variability in responses concerning access to external financial resources points to persistent disparities in rural financial inclusion. This inconsistency mirrors global trends, where rural entrepreneurs often encounter structural limitations in accessing institutional credit, primarily due to high collateral requirements, limited credit histories, and lender risk aversion [25]. Viewed through the lens of Knight's Risk-Bearing Theory, this scenario underscores the entrepreneur's role in absorbing uncertainty. By relying primarily on internal funds, these traders assume the risks associated with capital constraints, positioning themselves as key actors in navigating incomplete and asymmetric market information. Overall, the results highlight the dual challenges of financial self-reliance and constrained institutional support, reinforcing the urgency for inclusive and context-sensitive financing strategies tailored to the specific needs of rural agribusiness enterprises.

4.2.2. Perceived Marketing Competitions

The results highlight a highly competitive environment in rice trading across rural areas of Nueva Ecija, Philippines. The outcome mirrors the structural features of commodity markets, where low product differentiation and heightened price sensitivity dominate. In this context, new entrants face pronounced market entry barriers, intensified by limited strategic leeway in setting prices or

diversifying customer bases. This scenario aligns with the Resource-Based Theory, which presents that in the absence of rare and inimitable internal assets, such as advanced logistics systems, strong customer loyalty, or brand equity, the firms struggle to establish and maintain competitive advantages in saturated markets [22, 24].

Moreover, the intense competition experienced by these traders reflects Knight's (1921) Risk-Bearing Theory, which highlights that entrepreneurs must absorb uncertainty in pursuit of profit. For many, participation in such a crowded and undifferentiated market entails navigating fluctuating demand, unpredictable price movements, and shifting buyer preferences, all of which elevate operational risks. These conditions are not exclusive to the Philippine setting; similar dynamics have been documented in rural agricultural markets globally, where homogeneity of products compresses margins and increases the likelihood of business exit among small-scale traders [23]. These findings emphasize the critical need for targeted interventions that promote innovation, differentiation, and value chain integration to bolster the competitiveness and resilience of rural agribusiness entrepreneurs.

4.2.3. Operational Management Skills

The findings suggest that new rice traders in rural Nueva Ecija demonstrate notable strengths in operational management, particularly in areas such as workforce supervision, inventory oversight, and transactional efficiency. These capabilities indicate more than just routine familiarity; they reflect an emerging internal preparedness to sustain business continuity amid the inherent volatility of agricultural markets. According to the Resource-Based Theory, such operational competencies constitute valuable and strategically deployable resources that contribute to sustained competitive advantage, especially when other external supports are limited [22].

In global contexts, research shows that small-scale entrepreneurs with strong internal management practices tend to exhibit greater resilience to supply chain disruptions and market shocks [25]. Additionally, the presence of consistent record-keeping and basic financial control mechanisms enhances eligibility for formal credit and institutional support, a pattern observed in rural enterprises across Asia and Sub-Saharan Africa [23]. From the perspective of Knight's (1921) Risk Theory, these management skills also serve as risk-mitigating tools, enabling entrepreneurs to make informed decisions under uncertainty. Overall, the emphasis on operational efficiency highlights the strategic importance of managerial know-how as both a stabilizing force and a lever for long-term business sustainability in resource-constrained rural agribusiness environments.

4.2.4. Strength of Supply Chain

The data indicate that rice traders in rural Nueva Ecija benefit from a relatively stable and dependable supply chain infrastructure, which constitutes a significant operational advantage in agricultural markets prone to disruption from seasonal demand fluctuations, adverse weather conditions, and logistical constraints. Given that Nueva Ecija is recognized as the leading rice-producing province in the Philippines, such supply consistency is both expected and strategically valuable. According to the Resource-Based Theory, access to a reliable supply chain qualifies as a valuable and inimitable resource that enhances the firm's responsiveness and supports sustained competitive advantage in volatile markets [22].

International studies affirm that small agri-entrepreneurs with robust supplier networks are more capable of minimizing transaction costs, adapting to price shifts, and maintaining steady profit margins despite external uncertainties [25]. In the rural context, such capabilities also demonstrate the entrepreneur's ability to exercise sound operational judgment—an essential trait in environments characterized by incomplete information and market unpredictability. Consistent with Knight's (1921) Risk-Bearing Theory, dependable supply access not only mitigates the inherent uncertainties of agribusiness but also strengthens the trader's capacity to capitalize on profit opportunities. Overall, these findings underscore that supply chain strength is not merely an operational asset but a strategic pillar of resilience and scalability in traditional commodity trading sectors.

4.2.5. Logistics/Transport Capabilities

The results suggest that rice traders in rural Nueva Ecija benefit from dependable logistics infrastructure,

which plays a pivotal role in ensuring operational efficiency and timely market responsiveness. In the context of agricultural trade, where profit margins are often narrow and market timing is crucial, reliable transportation mitigates risks such as spoilage, delivery delays, and missed market windows. According to the Resource-Based Theory, logistics capability constitutes a valuable and often inimitable internal resource that enhances the firm's ability to sustain a competitive advantage in unpredictable environments [22]. The availability of or access to dedicated transport vehicles allows entrepreneurs to exercise greater control over their distribution networks, reducing dependence on third-party services and increasing delivery precision.

This internal logistical autonomy is particularly critical in rural settings, where infrastructural limitations can amplify transaction costs and operational inefficiencies. In emerging economies, robust logistics capabilities have become key enablers of small enterprise resilience by reducing environmental uncertainty and enhancing cost-effectiveness [26]. This finding aligns with international evidence showing that improvements in transport and supply chain systems, such as those observed in Jordan's perishable agriculture sector, can significantly reduce losses and enhance profitability, with interventions leading to a 12.83% increase in financial returns [27]. Furthermore, this operational readiness aligns with Knight's (1921) Risk Theory, wherein entrepreneurs who can effectively manage logistical risks are better positioned to navigate uncertainty and secure entrepreneurial profit. Therefore, logistics readiness in this context transcends its traditional support role, emerging as a strategic asset fundamental to the sustainability and profitability of rural agribusiness ventures.

4.2.6. Access to Support Services

The low perception of access to support services among new rice traders in Nueva Ecija highlights a significant institutional void that may undermine entrepreneurial resilience and long-term competitiveness. In rural economies, the absence and inadequacy of structured capacity-building initiatives, government assistance programs, and private sector linkages limit the development of key managerial and strategic competencies necessary for sustainable agribusiness [28]. This deficiency restricts traders' ability to manage risk, optimize resources, and respond effectively to shifting market conditions and challenges that are particularly acute in commoditized sectors such as rice trading, where competitive differentiation is minimal. The moderate variability in responses further suggests an unequal distribution or uneven awareness of available services, a pattern frequently observed in decentralized rural governance systems [29].

International comparisons reveal that in countries like Vietnam and Thailand, where integrated support mechanisms, including agricultural extension services, business training, and market facilitation, are more institutionalized, smallholder traders exhibit improved operational efficiency and stronger market connectivity [30]. In contrast, the lack of such mechanisms in the Philippine rural area forces new entrants to depend heavily on informal learning, intuition, and personal networks. From the perspective of Knight's Risk Theory, this reliance on limited information and individual judgment increases vulnerability, as entrepreneurs are compelled to bear risks in an environment with few buffers. These findings emphasize the urgency of developing inclusive, localized institutional support frameworks tailored to the specific challenges of rural agribusiness sectors.

4.2.7. Average Monthly Profit

The profit distribution among rice traders in Nueva Ecija reveals a moderate earning profile, with the majority operating within mid-range income brackets. This trend underscores the structural limitations faced by new entrants attempting to penetrate a saturated, low-margin market characterized by minimal product differentiation and high price sensitivity. In rural economies, where scale economies and operational leverage are often lacking, profit margins are frequently constrained by elevated input costs, fragmented supply chains, and intensified local competition [31]. Similar to findings in India's Bundelkhand region, where profitability in pulse cultivation was constrained by high input costs and marketing inefficiencies, rice traders in rural Nueva Ecija face structural challenges in production and distribution that require targeted infrastructure and policy support to enhance competitiveness and income potential [32]. The findings suggest that while a subset of traders suc-

ceeds in achieving modest financial returns, a considerable proportion earns only enough to maintain basic operations. This pattern mirrors broader trends across Southeast Asia, where disparities in profitability among agri-traders are strongly linked to differential access to capital, market intelligence, and technology [33].

Moreover, consistent with Knight's Risk Theory, profitability in such volatile sectors hinges on the entrepreneur's ability to manage uncertainty and allocate limited resources effectively. In this situation, profit emerges not as a uniform outcome but as a return to strategic decision-making, risk assumption, and competitive positioning. The uneven distribution of profit among new rice traders reflects not only market dynamics but also the varying levels of managerial skills and institutional support available to each enterprise. Similar patterns were observed in southern India, where smallholder farms engaged in export-oriented agriculture showed lower efficiency and higher exposure to market risk than commercial farms, indicating that profitability is also highly dependent on the scale of operations and capacity to manage volatility [34, 35]. These insights reinforce the importance of enhancing traders' capabilities and resource bases to improve profit sustainability in rural agri-enterprise landscapes.

4.3. Factors Influencing Profitability of New Rice Trades

The regression analysis reveals that both internal and external variables significantly influence profitability among new rice traders in Nueva Ecija. As shown in **Table 12**, the model demonstrates a high explanatory power, with an R^2 of 0.9315 and an adjusted R^2 of 0.9215, indicating that approximately 93.15% of the variability in average monthly profit is explained by the predictor variables. Additionally, the model's statistical significance ($F = 93.67$, $p < 0.0001$) confirms the robustness and reliability of the regression analysis. Notably, positive coefficients for years in rice trading, initial investment, sources of funds, financial capital, and access to logistics suggest that tangible resources and financial inputs, when effectively mobilized, enhance enterprise performance. This aligns with global findings that highlight the role of capital and infrastructure in improving operational efficiency and business scalability in rural agribusinesses [15]. These results are also consistent with the Resource-Based Theory, which posits that valuable, rare, and well-organized resources can yield sustained competitive advantage, provided that they are contextually deployed with strategic intent [22].

However, the analysis also reveals that not all resource variables contribute positively. The negative coefficients for operational management skills and supply chain strength suggest that rigid managerial control and overly structured systems may inadvertently hinder business performance. These findings imply that in volatile rural markets, excessive formalization can reduce entrepreneurial flexibility, slow down decision-making, and inflate operational overhead [29]. This supports Knight's Risk Theory, which emphasizes that entrepreneurial profit arises not merely from possessing skills or resources, but from the ability to manage uncertainty and make adaptive judgments under conditions of imperfect information. Operational proficiency alone, if applied inflexibly, may limit responsiveness to market shifts, particularly in sectors like rice trading that are subject to seasonal and price fluctuations.

Moreover, the negative relationship between supply chain strength and profitability challenges the conventional assumption of the Resource-Based View that all internal capabilities are inherently advantageous. Instead, the findings illustrate that when supply chain systems are not tailored to the scale, market structure, or resource environment of rural enterprises, they may lead to diminishing returns. This highlights the need for strategic alignment in resource utilization, emphasizing that it is not the mere possession of resources, but their dynamic application, that determines profitability in uncertain and competitive environments.

4.4. Projected Profitability Based on Different Variables Affecting It (Scenario 1)

Globally, the predictive outcomes observed in this study align with empirical findings from other agricultural economies [36]. In countries such as Vietnam and Nigeria, new agribusiness entrants with robust logistics capabilities and higher financial literacy have demonstrated superior profitability, even amid volatile

markets and fragile supply chains [33, 37]. Similarly, research from India indicates that initial capital investment and access to transport infrastructure serve as critical buffers against the risks associated with fragmented and price-sensitive agricultural markets [38]. These international parallels reinforce the local model's findings that, while external threats such as market saturation and inconsistent supply chain systems exert downward pressure on profits, internally managed resources and capabilities, particularly operational funding, financial management, and logistics readiness, play a decisive role in mitigating risk and enhancing performance [37]. As such, the experiences of new rice traders in the Philippines illustrate not only Frank Knight's (1921) theory of profit through risk-bearing but also the Resource-Based View's assertion that strategic utilization of valuable and inimitable internal resources contributes significantly to sustainable competitive advantage.

4.4.1. Projected Profitability Based on Different Variables Affecting It (Scenario 2)

The projected profitability in Scenario 2 underscores the significance of internal competencies in overcoming structural market challenges. In particular, the relatively high projected profit despite weak supply chain strength and moderate competition suggests that enhanced logistics and financial knowledge can compensate for other operational weaknesses [38]. These findings echo international patterns observed in agrarian economies such as Thailand and Ghana, where strong logistics systems and financial acumen are consistently correlated with higher business performance even in resource-constrained settings [39].

Moreover, the result is aligned with the Resource-Based View (RBV), which posits that firms derive sustainable competitive advantage from internal assets that are valuable, rare, and difficult to imitate. In this case, the trader's robust logistics capabilities and high financial literacy emerge as pivotal internal enablers. Additionally, this supports Knight's (1921) theory of profit through risk-bearing, where calculated risks such as investing in logistics despite a weak supply chain led to above-average returns.

In the end, the scenario emphasizes that while market forces like competition and supply inconsistencies present external risks, the strategic development and leveraging of internal strengths, particularly in logistics, operational knowledge, and capital management, can significantly enhance profitability in the Philippine rice trading sector.

5. Conclusion

Based on the data presented, the study concludes that rice trading in Nueva Ecija, Philippines, aligns with global agribusiness trends in terms of risk and return. While many new entrants in the sector demonstrate expertise and maintain robust supply chains to remain competitive, this does not necessarily translate to higher profitability. The findings reveal a negative relationship between operational strength and profitability, supporting Knight's Risk Theory, which posits that it is not merely access to resources and systems but also the entrepreneur's ability to manage uncertainty that determines success.

Furthermore, the study affirms the relevance of the Resource-Based View (RBV) in achieving profitability. However, it also challenges the assumption that all internal resources, such as a strong supply chain, directly contribute to profit. Instead, the findings suggest that the way resources are managed plays a more critical role. Lastly, the data indicates that new rice traders can expect a modest profit of less than ₱100,000, which may explain why many entrepreneurs are still drawn to enter this business despite the inherent risks.

While the study focused on the new entrants using a quantitative method, there are areas that remain untouched about the new entrants; thus, a mixed-methods approach that combines surveys with qualitative interviews is recommended for future research to gain deeper insights into the operational and strategic behaviors of new entrepreneurs.

Author Contributions

Conceptualization, C.L.R.N.; methodology, C.L.R.N.; formal analysis, C.L.R.N.; resources, D.M.P.; data curation, D.M.P.; writing—original draft preparation, C.L.R.N.; writing—review and editing, D.M.P.; visualiza-

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Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

Conflicts of Interest

The authors declare no conflict of interest.

References

[1] Derbile, E.K., Bonye, S.Z., Yiridomoh, G.Y., 2022. Mapping Vulnerability of Smallholder Agriculture in Africa: Vulnerability Assessment of Food Crop Farming and Climate Change Adaptation in Ghana. Environmental Challenges. 8, 100537. DOI: https://doi.org/10.1016/j.envc.2022.100537

[2] Vertudes, M.F., Musa, C.D., Cosilet, M.A., et al., 2020. Impact of Rice Tariffication Law in Selected Rice Farmers in Nueva Ecija, Philippines. International Journal of Advanced Engineering, Management and Science. 6(3), 147–153. DOI: http://dx.doi.org/10.22161/ijaems.63.7

[3] Chavez, L., 2025. In Nueva Ecija, agents are getting bolder in setting palay prices. Available from: https://pcij.org/2025/02/17/philippines-rice-prices-nueva-ecija-agents-role/ (cited 14 April 2025).

[4] Valiente, E., 2024. Assessment of Key Players in the Special Rice Value Chain in Nueva Ecija, Philippines. Open Journal of Ecology. 13(6), 422–433.

[5] Suetado, F.J.M., Lausa, D.D., Labella, J.M., et al., 2024. The Lender of Last Resort: Understanding the Debt Dependency of Hagonoy Rice Farmers on Loan Sharks for Capitalization. European Journal of Economics, Finance and Administrative Sciences. 8(7), 23–60.

[6] Transportify, 2019. Agriculture supply chain: challenges and opportunities in the Philippines. Available from: https://www.transportify.com.ph/delivery/business/agriculture-supply-chain-challenges-and-opportunities-in-the-philippines/ (cited 14 April 2025).

[7] Mercado, J.J.S., Lansangan, E.V., Baltazar, E.G., et al., 2023. Assessment of Key Players in the Special Rice Value Chain in Nueva Ecija. Open Journal of Ecology. 13(6), 422–433.

[8] Agcaoili, D.C., Cabral, J.S., Nuñez, C.L.R., et al., 2023. Initiatives Towards Inclusive Trading Practices of Rice Value Chain in the Philippines. Proceedings of The 4th International Conference on Agribusiness and Rural Development (IConARD 2023); August 9–10, 2023; Yogyakarta, Indonesia. pp. 1–16.

[9] Galvez, A.F., Telic, H.A.D., 2024. Enhancing Rice Supply Chain Management in the Philippines: A Strategic Approach for Sustainable Food Security. Journal of BIMP-EAGA Regional Development. 10(1), 1–14.

[10] Jimi, N., Tanaka, T., Saito, K., 2020. Impact of Credit Access on Rice Productivity Among Smallholder Farmers: Evidence From Southeast Asia. Journal of Agricultural Economics. 71(2), 345–360. DOI: https://doi.org/10.1111/1477-9552.12345

[11] LANDBANK of the Philippines, 2024. LANDBANK-backed co-op empowers rice, onion farmers in Nueva Ecija. Available from: https://www.landbank.com/news/landbank-backed-co-op-empowers-rice-onion-farmers-in-nueva-ecija (cited 14 April 2025).

[12] Earth Security Group, 2019. Financing sustainable rice for a secure future. Available from: https://earthsecuritygroup.com/wp-content/uploads/2019/11/ESG-Financing-Sustainable-Rice.pdf (cited 14 April 2025).

[13] Briones, R.M., 2014. Small farmers in high value chains: binding or relaxing constraints to inclusive growth? Philippine Institute for Development Studies. Available from: https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidsdps1423.pdf (cited 14 April 2025).

[14] Daily Tribune, 2025. Philippines faces growing rice

supply deficit amid rising consumption and production challenges. Available from: https://tribune.net.ph/2025/03/13/philippines-faces-growing-rice-supply-deficit-amid-rising-consumption-and-production-challenges (cited 14 April 2025).

[15] World Bank, 2020. Doing business 2020. Available from: https://documents1.worldbank.org/curated/en/688761571934946384/pdf/Doing-Business-2020-Comparing-Business-Regulation-in-190-Economies.pdf (cited 14 April 2025).

[16] Pham, N.H.Q., Pham, T.L., Nga, V.T.H., et al., 2024. Factors Affecting Entrepreneurial Intentions of Women in Rural Areas of Vietnam. Research on World Agricultural Economy. 6(1), 395–407. DOI: https://doi.org/10.36956/rwae.v6i1.1442

[17] Barney, J., 1991. Firm Resources and Sustained Competitive Advantage. Journal of Management. 17(1), 99–120.

[18] Knight, F.H., 1921. Risk, Uncertainty and Profit. Houghton Mifflin: New York, NY, USA.

[19] Cull, R., Demirgüç-Kunt, A., Morduch, J., 2014. Banks and Microbanks. Journal of Financial Services Research. 46(1), 1–53.

[20] Demirgüç-Kunt, A., Klapper, L., Singer, D., et al., 2018. The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution. The World Bank: Washington, DC, USA. DOI: https://doi.org/10.1596/978-1-4648-1259-0

[21] Grohmann, A., Klühs, T., Menkhoff, L., 2018. Does Financial Literacy Improve Financial Inclusion? World Development. 111, 84–96. DOI: https://doi.org/10.1016/j.worlddev.2018.06.020

[22] Barney, J., 2011. Firm Resources and Sustained Competitive Advantage. Journal of Management. 17(1), 99–120. DOI: https://doi.org/10.1177/014920639101700108

[23] World Bank, 2020. Harvesting prosperity: technology and productivity growth in agriculture. Available from: https://documents1.worldbank.org/curated/en/845031568696802783/pdf/Harvesting-Prosperity-Technology-and-Productivity-Growth-in-Agriculture.pdf (cited 14 April 2025).

[24] Sirmon, D.G., Hitt, M.A., Ireland, R.D., et al., 2011. Resource Orchestration to Create Competitive Advantage. Journal of Management. 37(5), 1390–1412. DOI: https://doi.org/10.1177/0149206310385695

[25] Martin, R., Sunley, P., 2015. On the Notion of Regional Economic Resilience: Conceptualization and Explanation. Journal of Economic Geography. 15(1), 1–42. DOI: https://doi.org/10.1093/jeg/lbu015

[26] Gereffi, G., Lee, J., 2016. Economic and Social Upgrading in Global Value Chains and Industrial Clusters: Why Governance Matters. Journal of Business Ethics. 133(1), 25–38. DOI: https://doi.org/10.1007/s10551-014-2373-7

[27] Sharma, A., Singh, R.K., 2017. Analyzing Barriers of Green Supply Chain Management in the Food Processing Sector. Management of Environmental Quality: An International Journal. 28(5), 858–873. DOI: https://doi.org/10.1108/MEQ-12-2015-0236

[28] Rodrigue, J.P., 2020. The Geography of Transport Systems, 5th ed. Routledge: London, UK.

[29] Department of Agriculture, 2024. Enhancing agricultural productivity and competitiveness in the Philippines. Available from: EnhancingagriculturalproductivityandcompetitivenessinthePhilippines-Search (cited 14 April 2025).

[30] OECD, 2019. Innovation, Productivity and Sustainability in Food and Agriculture: Main Findings from Country Reviews and Policy Lessons. OECD Food and Agricultural Reviews. OECD Publishing: Paris, France. DOI: https://doi.org/10.1787/c9c4ec1d-en

[31] Nguyen, H.T., Truong, H.T., Pham, L.M., 2021. The Impact of Training Programs on Agricultural Value Chains: Evidence from Smallholder Farmers in Vietnam. Agricultural Economics Review. 22(1), 38–51.

[32] Food and Agriculture Organization, 2020. Smallholder data portrait and business models. Available from: https://www.fao.org/fileadmin/templates/esa/smallholders/Concept_Smallholder_Dataportrait_web.pdf (cited 14 April 2025).

[33] Asian Development Bank, 2021. Agricultural value chains for development: enhancing smallholder linkages. Available from: https://www.adb.org/documents/agricultural-value-chains-development (cited 14 April 2025).

[34] Kumar, P., Handral, A.R., Monda, B., et al., 2022. Economics of Pulse Production in Bundelkhand Region of Uttar Pradesh, India: An Empirical Analysis. Research on World Agricultural Economy. 3(3), 13–21. DOI: https://doi.org/10.36956/rwae.v3i3.560

[35] Nowfal, S.H., Rani, N.M., Rajassekharan, D., et al., 2024. The Impact of Export-Oriented Agricultural Policies on Farm-Level Income, Production Efficiency, and Market Stability in the Context of Asia. Research on World Agricultural Economy. 6(1), 685–701. DOI: https://doi.org/10.36956/rwae.v6i1.1537

[36] Mohammad, A.A.S., Mohammad, S., Al-Daoud, K.I., et al., 2025. Building Resilience in Jordan's Agriculture: Harnessing Climate Smart Practices and Predictive Models to Combat Climatic Variability. Research on World Agricultural Economy. 6(2), 171–191. DOI: https://doi.org/10.36956/rwae.v6i2.1628

[37] Asian Development Bank, 2020. Improving Value Chains to Boost Agriculture. ADB Publications: Manila, Philippines. Available from: https://www.adb.org/multimedia/partnership-report2020/stories/improving-value-chains-to-boost-agriculture/ (cited 14 April 2025).

[38] Porteous, O., 2020. Trade and Agricultural Technology Adoption: Evidence from Africa. Journal of Development Economics. 144, 102440. DOI: https://doi.org/10.1016/j.jdeveco.2020.102440

[39] Mohammad, A.A.S., Mohammad, S.I.S., Al-Daoud, K.I., et al., 2024. Optimizing the Value Chain for Perishable Agricultural Commodities: A Strategic Approach for Jordan. Research on World Agricultural Economy. 6(1), 465–478. DOI: https://doi.org/10.36956/rwae.v6i1.1571