

MANAGEMENT PRACTICES AND FINANCIAL PERFORMANCE OF AGRI-BASED ENTERPRISES IN PHILIPPINE STATE UNIVERSITIES AND COLLEGES

Jacinto P. BACLAYON*, Melvin S. SARSALE**

Southern Leyte State University, *Faculty of Agriculture, Food, and Environmental Sciences,
**Faculty of Business and Management, Southern Leyte, Philippines, E-mails:
jbaclayon@southernleytestateu.edu.ph, msarsale@southernleytestateu.edu.ph

Corresponding author: msarsale@southernleytestateu.edu.ph

Abstract

This paper used a descriptive-correlational research approach to investigate the agriculture-based enterprises' management practices and financial performance of within Philippine state universities and colleges (SUCs) in Leyte and Biliran islands. This study assessed the SUCs' management practices using eight dimensions: strategy, execution, culture, structure, leadership, innovation, talent, strategic linkages and partnerships, and net profit margin in measuring the financial outcomes of these enterprises. Findings revealed that managing talents, innovation, strategic linkages, and partnerships were practiced slightly among SUCs. Findings showed that level 4 SUCs exhibited better net profit margins for agri-based ventures. Moreover, strategy, culture, structure, talent, innovation, and strategic linkages and partnerships are significantly correlated to the financial performance of SUCs agri-based enterprises. This paper offers another perspective for stakeholders to create focused strategies and assistance frameworks, fostering the success and expansion of SUCs' agricultural enterprises.

Key words: essential management practices, financial health, public universities, agri-focused ventures, SUCs

INTRODUCTION

In the Philippines, government-funded higher education institutions frequently struggle to obtain sufficient financial resources, prompting them to look for extra income beyond what the state offers [7, 28, 30, 40, 49]. Numerous public colleges and universities have adopted income-generating projects (IGPs), particularly in agriculture, to tackle this issue [11, 49, 54]. These ventures include farms, livestock operations, and aquaculture, which help fund essential needs like infrastructure, faculty salaries, student scholarships, and research and offer students and faculty hands-on training and research opportunities [7, 28]. The income from these projects improves educational outcomes, lessens reliance on unpredictable government funding, and boosts local and regional development [1, 15].

Several studies have explored the management practices and financial performance of IGPs in higher education institutions, focusing on various sectors and settings [7, 28, 54]. Research has highlighted

the critical role of effective management in ensuring the sustainability and profitability of IGPs, emphasizing strategic planning, resource allocation, and stakeholder engagement [30]. Studies specific to agri-based enterprises have demonstrated the potential for these ventures to enhance educational outcomes and provide practical training opportunities while generating additional revenue [49].

While research explores IGPs in higher education and their link to financial health, a significant gap exists regarding agri-based enterprises within Philippine SUCs. Existing studies often focus on the financial performance and sustainability of IGPs [1, 7, 11, 15, 28, 30, 35, 49, 54].

This study fills this gap by analyzing the management strategies and financial sustainability of agri-based businesses in SUCs. In particular, it sought to accomplish the following objectives:

- (i) Examine the SUCs' practices in managing agri-based enterprises;
- (ii) Assess the financial performance of these agriculture-based businesses; and

(iii) Evaluate the correlation between management practices and financial outcomes.

This research intends to offer specific and actionable insights for enhancing the performance of SUC agribusiness ventures in the country by examining management practices and their influence on financial performance. Recognizing efficient management practices for SUCs agri-focused IGPs can improve operational efficiency, inform training programs, and guide policy decisions to strengthen the financial health of agri-based enterprises.

Literature review

Impact of management practices on the financial performance of agri-based enterprises in higher education institutions

Understanding how management practices influence the financial performance of agri-based enterprises is a complex but essential topic [53]. Strong management practices are the backbone of financial success for agribusinesses [34]. Every aspect needs to be well-managed, from financial planning and efficient production processes to strategic marketing, risk management, and a skilled workforce [18]. Embracing technologies like precision agriculture and digital marketing can further optimize resources, boost yields, and expand the customer base, leading to long-term financial stability [21].

The leadership style in agri-based enterprises is also important and can significantly affect how well these businesses do financially [14]. A visionary and inspiring leader always looks for innovative ways to improve and pushing for the adoption of new technologies [2, 46]. Transformational leadership can boost productivity and cut costs by encouraging sustainable practices [6]. On the other hand, a leader who focuses on routine operations and efficiency, known as a transactional leader, ensures that everything runs smoothly and standards are consistently met [52]. Both styles have their strengths, but the right choice can significantly affect employee morale, innovation, and operational efficiency, which are essential for financial success [5].

How resources are allocated also plays a crucial role in the financial health of agri-

based enterprises [30]. When these enterprises carefully manage their finances, workforce, and equipment, they can produce more while spending less [20]. It might mean investing in cutting-edge farming technologies, upgrading facilities, or continuously training their team to stay ahead of the curve [26]. Such thoughtful allocation leads to better harvests, higher quality products, and a stronger position in the market, which all boosts financial performance. In universities, aligning these resource decisions with research goals and educational objectives can create powerful synergies, enhancing the enterprise and the institution [55].

Meanwhile, operational efficiency is essential for the financial health of agri-based enterprises [30]. Streamlining processes, cutting waste, and fine-tuning supply management can save money and increase profits [19]. Advanced techniques like precision agriculture, integrated pest management, and sustainable practices can significantly boost crop yields while protecting the environment [22]. Universities are crucial in this progress, leveraging their research to develop and improve these innovative methods [4]. This work paves the way for a more productive and eco-friendly future in farming [41]. By continuously striving for improvement and utilizing academic expertise, agri-based enterprises can greatly enhance their financial performance [47].

On-campus agricultural enterprises must be flexible, embracing changes such as market trends and regulations and adopting new technologies [13]. Universities act as crucibles for innovation and adaptability, equipping businesses to thrive in a competitive landscape [32]. Strong leadership, strategic planning, and efficient resource allocation – these effective management practices are the bedrock of long-term success [38]. By fostering such a foundation, universities empower businesses to achieve sustainability and prosperity.

Measuring the financial performance of IGPs in Philippine SUCs

Monitoring the financial health of state universities and colleges income-generating

projects (IGPs) is crucial to ensure long-term success [10, 28, 30, 43]. These diverse projects, ranging from farms to shops and services, are essential for boosting SUCs' financial resources [15]. By analyzing key metrics like profitability, return on investment, and efficiency, we can understand each IGP's economic viability and make informed future decisions [7].

Profitability is a key indicator of financial performance for IGPs [49]. This measure involves calculating the net income generated by the project after accounting for all expenses, including operational costs, labor, and materials. Profitability shows SUCs if the project brings in enough money to cover expenses and contribute to the university's budget [40]. It helps identify areas where they can cut costs or find ways to make more money. With this information, SUCs can make better decisions about the future of each IGP. On the other hand, return on investment (ROI) is like a scorecard for IGPs. It shows SUCs how much profit they get back for every peso they invest. A high ROI means the project uses its money well and generates a good return [7]. SUC administrators can easily compare different IGPs, see which ones are the most successful, and decide where to put their money and resources for the biggest impact by looking at ROI [45]. It helps them pick the winning projects to bring the most money for the university.

SUCs can also monitor the health of their IGPs, like financial fitness trackers. Tools like cost-to-revenue and asset turnover ratios help us see how efficiently these projects turn resources into income [51]. The cost-to-revenue ratio reveals expense control (lower is better), while the asset turnover ratio shows how much revenue each peso invested in equipment generates. These tools clearly show how well the projects are performing financially. By monitoring these ratios, SUCs can spot areas where they can do better and make informed decisions to keep their income-generating projects financially healthy and contribute significantly to the university's budget [30].

Another measurement tool is the cash flow analysis. It tracks incoming and outgoing

money to see if there is enough for daily operations and future investments [33]. Positive cash flow means the project is healthy, generating enough to grow smoothly [12]. However, negative cash flow indicates potential financial trouble needing attention to ensure the IGP's long-term success [16]. By regularly analyzing cash flow, SUCs can maintain economic stability and avoid cash shortages that could threaten the success of their projects [35].

Benchmarking against similar projects and industry standards is crucial for contextualizing the financial performance of IGPs [24]. Institutions can gain valuable insights into their relative strengths and weaknesses by comparing their performance metrics with those of other SUCs or private sector equivalents [25]. Benchmarking helps identify best practices, set realistic performance targets, and drive continuous improvement [48]. It also provides a broader perspective on the competitive landscape, enabling SUCs to adapt their strategies to enhance the financial results of their IGPs [15].

MATERIALS AND METHODS

This study employed a descriptive-correlational research approach to explore the management practices and the financial performance of agri-based enterprises of SUCs in the Leyte and Biliran islands of the Philippines. These SUCs are engaged in animal, crop, and fish production enterprises. In determining the management practices of these agri-based enterprises, the researchers utilized an adopted research instrument [42, 44], drawn from Nohria et al.'s [36] concept of eight essential management practices that must be exhibited among firms to achieve business success (Table 1).

Each dimension contains eight describing statements to which respondents rated its extent of manifestation as management practice on their enterprises with the following categories: (1) not practiced, (2) moderate extent, (3) great extent, and (4) very great extent.

Table 1. Description of the dimensions of management practices

Dimensions	Description
Strategy	is a clear plan that aligns resources and goals to adapt to market changes and achieve objectives.
Execution	is the alignment of leadership, employee participation, and efficient processes to implement strategies, meet market demands, and boost productivity.
Culture	reflects shared beliefs, values, and norms that drive teamwork, encourage learning from mistakes, and promote a customer-focused, results-oriented environment.
Structure	defines roles, responsibilities, and processes to enhance productivity, foster collaboration, streamline decisions, and deliver value by placing key personnel close to critical operations.
Talent	refers to skilled individuals whose recruitment, development, and retention through training, fair compensation, and meaningful roles are vital for achieving goals and ensuring success.
Leadership	is the ability to inspire innovation, guide teams with knowledge and support, and foster a culture of commitment and creativity to drive performance and sustainability.
Innovation	is the creation of value through new ideas and practices that improve adaptability, strengthen partnerships, and seize opportunities for competitive advantage in a changing market.
Strategic linkages and partnerships	are collaborations that enhance governance, provide training access, and foster alliances to boost productivity and profitability.

Source: Authors' preparation (2024).

The mean rating for each indicator was obtained and interpreted with the following guidelines: not practiced ($\mu=1.00-1.75$), slightly practiced ($\mu=1.76-2.50$), moderately practiced ($\mu=2.51-3.25$), and highly practiced

($\mu=3.26-4.00$). They were administered to 40 participants who are IGP directors, coordinators, and project managers of the covered SUCs (Table 2).

Table 2. Distribution of respondents

SUC level	SUC	Campus	IGP directors and coordinators	Project managers	Total
4	A	A	1	5	6
4	A	B	1	4	5
4	A	C	1	3	4
3	B	D	1	4	5
3	B	E	1	4	5
3	C	F	1	4	5
2	D	G	1	4	5
2	E	H	1	4	5
Total			8	32	40

Source: Authors' preparation (2024).

To evaluate the financial health of the agribusinesses, the researchers analyzed net profit margins from the annual financial reports provided by each enterprise. Additionally, they obtained institutional approval from all participating SUCs and ensured the anonymity of both respondents and institutions.

RESULTS AND DISCUSSIONS

Management practices of SUCs engaged in agri-based enterprises

Table 3 shows how state universities and colleges (SUCs) manage agricultural

enterprises. It analyzes eight key areas of management practices.

The data reveals that most dimensions fall under "moderately practiced," indicating these practices are generally implemented to a moderate extent, but there is room for improvement.

A significant weakness identified is 'talent,' with all SUC levels scoring around 2.45. This underscores the urgent need to focus on attracting and retaining skilled personnel for these agricultural ventures. On the other hand, 'structure' appears to be a relative strength, with scores around 2.71, indicating a somewhat established organizational

framework across SUC levels. Interestingly, both 'leadership' and 'strategy' fall under 'moderately practiced' despite their crucial role in success. It highlights the potential for strengthening leadership and developing clearer strategic direction for these businesses. Furthermore, the areas scoring the lowest,

'innovation' and 'strategic linkages and partnerships', present significant opportunities for growth. Encouraging a culture of innovation and fostering partnerships with other institutions or businesses could be key drivers of success for SUC agri-businesses, inspiring hope and a sense of possibility.

Table 3. Manifestation of management practices among SUCs engaged in agri-based enterprises

Dimensions	SUC level 2		SUC level 3		SUC level 4		Mean	Descr.
	Mean	Descr.	Mean	Descr.	Mean	Descr.		
Strategy	2.73	MP	2.50	SP	2.80	MP	2.68	MP
Execution	2.68	MP	2.59	MP	3.02	MP	2.76	MP
Culture	2.54	MP	2.63	MP	3.05	MP	2.74	MP
Structure	2.85	MP	2.47	SP	2.83	MP	2.71	MP
Talent	2.30	SP	2.21	SP	2.85	MP	2.45	SP
Leadership	2.58	MP	2.52	MP	2.98	MP	2.69	MP
Innovation	2.43	SP	2.38	SP	2.62	MP	2.48	SP
Strategic linkages and partnerships	2.38	SP	2.43	SP	2.62	MP	2.47	SP

Source: Authors' calculations (2024).

There are some observations specific to SUC levels. SUC Level 4 consistently scores higher in most dimensions, suggesting a stronger management emphasis. On the other hand, SUC Level 2 scores the lowest in "talent" and "strategic linkages and partnerships," highlighting areas for targeted improvement. Addressing these weaknesses and capitalizing on strengths, SUC agri-businesses can enhance their overall project and strategic management practices, leading to a brighter future for these agricultural enterprises.

Financial performance of SUCs engaged in agri-based enterprises

Figure 1 presents the financial performance of SUCs engaged in agri-based enterprises from 2014-2018 by SUC level. The financial viability of these agri-based ventures is measured using the net profit margin. It is worth noting that the financial performance of these agri-based enterprises has consistently shown a positive net profit margin, a promising sign for their financial health.

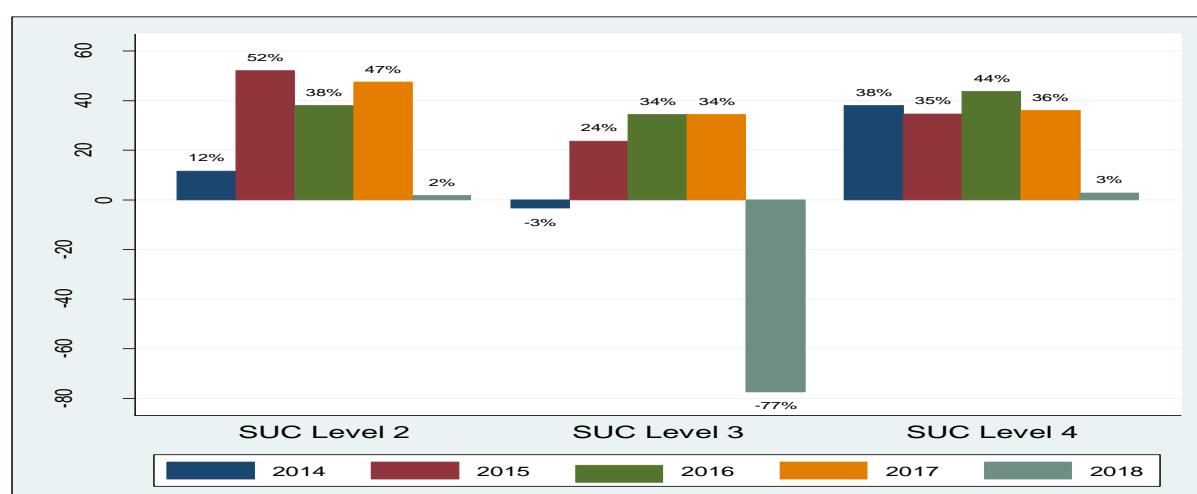


Fig. 1. Financial performance of SUCs engaged in agri-based enterprises from 2014-2018

Source: Own results.

Figure 1 reveals that SUC level 4 presents a stable net profit margin for the last four years

among all the SUCs in the region. It shows that the agri-based enterprises under this SUC

are relatively stable and mature, considering their income stream level is consistently within the SUC's average. Meanwhile, SUC level 3 agri-based enterprises show negative net profit margins in 2014 and 2018. These enterprises are operating negatively. On the other hand, SUC level 2 agri-based enterprises show the highest net profit margin among the SUCs in the region. This implies that these enterprises provide significant income to their respective SUCs, thereby augmenting their income levels, which will reduce the need for more resources to address the demands and services of the university.

Relationship between management practices of SUCs engaged in agri-based enterprises and their financial performance

Table 4 provides correlation statistics examining the relationship between net profit margin and management dimensions among SUCs engaged in agri-based enterprises. Several key findings emerge from the analysis:

Firstly, the analysis highlights the significant positive correlations between strategic aspects such as strategy, culture, and net profit margin. These correlations, specifically a moderate positive correlation for strategy ($r=.312$, $p=.0497$) and a strong correlation for organizational culture ($r=.312$, $p=.0497$), underscore the importance of well-defined strategies and strong cultures in achieving higher profitability.

Furthermore, the analysis underscores the importance of an effective organizational structure in driving profitability. The significant positive correlation ($r=.363$, $p=.0215$) between structural elements and net profit margin highlights the role of structure in supporting operational efficiency and strategic alignment. Moreover, dimensions related to human capital management, such as talent, demonstrate a notably strong correlation with a net profit margin ($r=.463$, $p=.0026$). It highlights the critical role of recruiting, retaining, and developing skilled employees in driving organizational success and financial performance.

Conversely, dimensions like execution and leadership show non-significant correlations with net profit margin. Execution, while

positively correlated ($r=.276$, $p=.0843$), does not meet the threshold for statistical significance, suggesting that effective implementation of strategies may not consistently translate into higher profitability in this context. Similarly, leadership exhibits a negligible correlation ($r=.034$, $p=.8375$), indicating that leadership qualities assessed in this study do not significantly impact net profit margin.

Beyond core management practices, the study found innovation and strong partnerships to be key drivers of profitability. Analyzed data revealed a significant correlation between innovative practices ($r=.440$, $p=.0045$) and strategic linkages ($r=.344$, $p=.0297$) with higher financial returns. It underscores the crucial role of fostering a culture of creativity and collaboration for SUCs' agri-businesses to thrive in the competitive landscape.

Table 4. Correlation statistics between net profit margin and project and strategic management dimensions

Management dimensions	Correlation coefficient	p-value	Description
Strategy	0.312	0.0497*	Significant
Execution	0.276	0.0843 ^{ns}	Not significant
Culture	0.312	0.0497*	Significant
Structure	0.363	0.0215*	Significant
Talent	0.463	0.0026**	Significant
Leadership	0.034	0.8375 ^{ns}	Not significant
Innovation	0.440	0.0045**	Significant
Strategic linkages and partnerships	0.344	0.0297*	Significant

Note: * $p<.05$; ** $p<.01$; *** $p<.001$; ^{ns} not significant
Source: Authors' calculations (2024).

Discussions and implications

Building on the results of this empirical study, we highlight critical areas that contribute significantly to our attempt to provide an understanding of the financial viability and management practices of agri-based enterprises of Philippine public higher educational institutions. This understanding not only identifies current challenges but also paves the way for potential growth and improvement in the future.

First, it is crucial to recognize that managing talent requires attention among SUCs' agri-based enterprises. The existing scenario calls for immediate action to actively recruit,

develop, and retain skilled personnel involved in agri-based enterprises within these institutions [11]. It can harm the overall efficiency of agricultural projects and initiatives undertaken by these [54]. Managing farm workers in SUCs' agri-based enterprises faces several challenges [30]. A key issue lies in the limited talent pool and heavily employing occasional workers [15]. This situation can weaken the talent management within SUCs as they will not invest in capacity buildings for temporary workers. This talent management issue could lead to a need for more skilled workers. However, finding individuals with the necessary experience and knowledge for these jobs is daunting, especially when compensation remains challenging for SUCs engaged in agri-enterprises. This situation could result in decreased productivity and financial outcomes. Thus, SUCs should prioritize retaining the right talent while ensuring the profitability of these IGPs.

Further, motivation and retention issues can plague SUCs' agri-businesses. Unclear compensation structures or limited career advancement opportunities make attracting and retaining qualified individuals easier [29]. It creates a cycle of constantly training new staff, hindering long-term progress in agricultural endeavors [37]. SUCs, being government institutions, can also face bureaucratic hurdles in hiring and managing personnel [50]. Stricter regulations and slower processes might make these jobs less attractive for farm workers who prefer more flexible or faster-paced environments. The core mission of SUCs, which is often focused on academics and research, can lead to a lack of dedicated resources or management focus on the day-to-day operations of the agri-based enterprise. It can negatively impact farm worker support and morale, hindering the smooth running of agricultural projects.

Second, managing innovations is practiced slightly among SUCs' agri-based enterprises. Stagnation in innovation can lead to outdated practices, hindering productivity and potentially reducing the overall yield or quality of agricultural products. A lack of focus on innovation can make SUCs less

sustainable in the agricultural sector [11]. SUCs might struggle to keep pace with private enterprises or research institutions at the forefront of agricultural advancements without actively exploring and adopting new technologies and methods. The limited innovation management can stifle the growth of a culture of creativity and problem-solving among staff and students involved in agri-based enterprises [3]. Without actively encouraging the exploration of new ideas, valuable opportunities for local adaptations or unique solutions to agricultural challenges might be missed.

Third, strategic linkages and partnerships are practiced slightly among SUCs' agri-based enterprises. Beyond talent management and innovation, SUCs' agri-based enterprises often need help with establishing strategic linkages and partnerships [27, 28]. This lack of collaboration with external organizations, industries, and stakeholders hinders their access to crucial resources like equipment or funding [15, 39]. Moreover, it limits knowledge exchange, preventing SUCs from learning from experienced players and sharing their research findings [8]. This isolation restricts their growth potential, limiting access to new markets and hindering the ability to scale up successful projects for a wider impact on the agricultural sector.

Fourth, level 4 SUCs managed their agri-based enterprises positively, reflecting their consistent positive margins. Level 4 SUCs' consistent positive margins in agri-businesses are promising, indicating efficient resource management. Established universities with stable resources and capabilities tend to have better financial outcomes compared to lower level SUCs [49]. The SUC level itself reflects an institution's developmental phase against set standards [9]. The highest level signifies comparability to top Asian universities and colleges [9], along with stronger institutional performance [31].

Lastly, managing strategy, culture, structure, talent, innovation, and strategic linkages and partnerships are significantly correlated to the financial performance of SUCs agri-based enterprises. SUCs that excel in strategic planning, fostering a positive and innovative

work environment, and establishing a well-defined organizational framework are more likely to achieve financial success. Developing and retaining skilled talent allows them to leverage expertise for better decision-making [23]. Encouraging innovation fosters the development of new and efficient practices while building strong partnerships with external stakeholders opens doors to valuable resources and knowledge exchange [17]. Focusing on these interconnected elements, SUCs can significantly enhance their financial performance in agri-based enterprises, leading to greater overall success and a stronger contribution to the agricultural sector.

CONCLUSIONS

This empirical study has shed light on critical areas influencing the financial viability and management practices of agri-based enterprises within Philippine SUCs. We identified weaknesses in talent management, innovation, and strategic partnerships, which significantly impact financial performance. These weaknesses manifest as needing help attracting and retaining skilled personnel, requiring more cutting-edge technology adoption, and limited access to resources and knowledge exchange. Meanwhile, the positive financial margins in Level 4 SUCs are promising, signifying that high SUC level tends to have better management practices and improved financial outcomes.

On the other hand, SUCs can lay a robust foundation for their agri-based enterprises by concentrating on strategic planning, fostering a positive and innovative culture, establishing a well-defined structure, developing and retaining talent, and building strong partnerships. This interconnected approach allows SUCs to unlock a future of financial success and a more sustainable and impactful presence within the agricultural sector. Moreover, this research offers policymakers, university administrators, and stakeholders with valuable insights to develop targeted interventions and support systems. These efforts will pave the way for the continued success and growth of SUCs' agri-businesses.

Limitations and future studies

This study offers valuable insights, but some limitations are worth considering. First, relying on respondents' self-reported data can introduce response bias and social desirability effects. Respondents may unintentionally misreport information or be influenced by a desire to present their practices favorably. Second, applying cross-sectional design limits our ability to establish cause-and-effect relationships. We can observe correlations between management practices and financial performance, but we cannot definitively say that one causes the other. Moreover, focusing on a specific region in the Philippines restricts the generalizability of the findings to different areas or educational environments. Finally, the analysis does not account for potential confounding variables such as SUCs' budget allocations and the overall business environment, which could influence the observed correlations.

Future studies may integrate mixed methodologies utilizing both quantitative and qualitative approaches to better describe management practices' impact on the financial performance of agri-based enterprises in Philippine state universities and colleges. Researchers may further investigate the effect of state universities' level and innovation index on the performance of their agri-based enterprises.

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