

Technopreneurship Based Horticultural Diversification

Yusup Hari Subagya¹, Ikhsan Gunawan²

¹ Prodi Manajemen Fakultas Ekonomi dan Bisnis Universitas Pignatelli Triputra, Indonesia

² Prodi Agribisnis Fakultas Pertanian Universitas Pasir Pangaraian, Riau, Indonesia

Email: yusuphari67@gmail.com; ikhsanupp@gmail.com

ABSTRACT

Pacet District is a highland area recognized as a horticultural production center with various leading commodities. Despite its substantial natural resource potential, most horticultural enterprises are still operated on a small scale, rely heavily on a single commodity, and adopt conventional business practices. These conditions lead to income instability and increase vulnerability to price fluctuations and market dynamics. Horticultural business diversification is considered an important strategy to reduce business risks and enhance economic resilience, particularly through the integration of technology and entrepreneurship, known as technopreneurship. This study aims to analyze patterns of technopreneurship-based horticultural business diversification and their implications for strengthening and developing horticultural enterprises in Pacet District. The study employs a descriptive approach using secondary data obtained from official publications and relevant scientific literature. The results of descriptive statistical analysis for the 2020–2024 period reveal dynamic changes in horticultural business diversification, characterized by decreasing variability among business units and a tendency toward performance stabilization in the later years. These findings indicate that both horizontal and vertical diversification, supported by the application of technopreneurship, contribute positively to business stability and more equitable performance among horticultural enterprises. Therefore, strengthening technopreneurship-based horticultural diversification represents a relevant strategy for promoting competitive and sustainable horticultural development at the local level.

Keywords: business diversification, horticulture, technopreneurship

ISSN: 3090-0875

DOI: -

INTRODUCTION

Pacet District is one of the highland areas known as horticultural centers with various superior commodities. The potential of natural resources owned by this area supports the development of horticultural businesses widely. However, most horticultural business actors still carry out their business activities on a small scale and tend to depend on one type of commodity and conventional business pattern (Maryoni et al. 2023). This dependence causes farmers' incomes to be unstable and increases the vulnerability of businesses to changes in prices and market conditions.

Diversification of horticultural businesses is seen as one of the important strategies in reducing business risks and increasing the economic resilience of farming actors. Diversification is not only limited to the cultivation of various types of commodities, but also includes the development of non-cultivation business activities, such as product processing, marketing, and development of agricultural support services (Bell, Moore, and Thomas 2021). Diversification plays a role in strengthening the bargaining position of business actors in the market and reducing dependence on one type of commodity or marketing channel (Azc 2023). Through business diversification, horticultural actors have the opportunity to increase product added value, expand sources of income, and strengthen business competitiveness in a sustainable manner.

The development of information and communication technology provides an opportunity to encourage the diversification of horticultural businesses through a technopreneurship approach. Technopreneurship in the agricultural sector integrates technological innovation with entrepreneurial skills in business management, covering aspects of production, post-harvest, digital marketing, and business management (Mouratiadou et al. 2023). The application of technopreneurship allows horticultural business actors to develop various forms of business diversification. Diversification is carried out through the development of a variety of commodities, products, including product processing, packaging, and development of value-added processed products (Dasgupta and Roy 2021). With the support of digital technology, horticultural business actors also have the opportunity to reach a wider market, shorten the distribution chain, and increase the bargaining position against other market players.

This study examines the pattern of diversification of horticultural businesses based on technopreneurship and its implications for strengthening and developing horticultural businesses.

RESEARCH LOCATION

This research was carried out in Pacet District. The determination of the research location was carried out purposively with the consideration that the area is one of the highland horticultural centers that has great potential for horticultural business development.

DATA COLLECTOR

This study uses **secondary** data-based. Data was obtained from the results of publications of related agencies and scientific journals that discuss the diversification of horticultural businesses.

ANALYSIS METHODS

The analysis approach is carried out with descriptive analysis, including the pattern of diversification of horticultural businesses, the use of technology, and the role of technopreneurship in supporting the development of competitive and sustainable horticultural businesses.

RESULTS AND DISCUSSION

Geographical and Demographic Conditions of Pacet District

Geographically, Pacet sub-district has **an average altitude of about 470 meters above sea level**, so it has cooler temperatures than lowlands. This condition is suitable for the cultivation of various horticultural commodities such as highland vegetables and horticultural crops with high economic value. The area of Pacet District is recorded at around **±45.16 km²**, which includes various villages with considerable agricultural land potential. This geographical situation shows that the agroecological potential in Pacet relatively supports sustainable agricultural activities.

Pacet District has a population of around **60,944 people**. This number reflects a relatively dense population and is part of the social structure in Mojokerto Regency. Most of the population works in the agricultural sector and other sectors related to local natural resources, so the demographics of the area greatly influence the work structure and economic activity of the community. Demographic characteristics such as the number of population, productive age structure, and education level are important factors in the capacity of technology adoption and the development of innovation-based businesses such as technopreneurship.

Pacet District has natural and community conditions that have the potential to be developed through a more modern and sustainable agribusiness strategy, especially through the diversification of horticultural businesses supported by the application of technopreneurship. However, to make optimal use of this potential, it is necessary to strengthen the capacity of human resources and access to technology and a wider market.

Table 1 Descriptive Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Hours of deviation
2020	10	1.56	808.66	161.7326	268.41515
2021	10	1.86	583.58	116.7154	214.19654
2022	10	2.12	163.05	32.6094	50.65712
2023	10	2.47	197.93	39.5858	64.51522
2024	10	2.66	203.59	40.7182	63.93278
Valid N (listwise)	10				

The results of descriptive statistical analysis show that there are quite clear dynamics in the variables analyzed during the **2020–2024 period**, which reflects the development of diversification of horticultural businesses in Pacet District. The number of observations (**N**) is **10 units** per year. The minimum, maximum, mean values and standard deviation describe the dynamics and levels of variation between horticultural business units analyzed in Pacet District.

In the year **2020**, the average score was recorded as **161,73** with a very high maximum value, i.e. **808,66**, as well as the standard deviation of **268,42**. The high value of the standard deviation indicates that there is a huge variation between horticultural business units. This condition reflects a business structure that is still not evenly diversified, where a small number of business units have a very dominant performance compared to other business units (Hamdi Sari Maryoni 2024). The context of diversification indicates dependence on a particular commodity or scale of business.

In 2021, the average value decreased to 116.72 with a standard deviation of 214.20. The decrease in average value and standard deviation indicates that the dominance of certain business units is beginning to decrease, although the variation between business units is still relatively high. This shows that there is an beginning of the process of adjusting horticultural business patterns towards a more equitable structure. More significant changes were seen in 2022, where the average score dropped drastically to 32.61 with a standard deviation of 50.66. This decline shows a change in the scale and structure of the horticultural business. In relation to business diversification, this condition can be interpreted as a transition phase, where business actors begin to develop various forms of business diversification so that they no longer depend on one type of business on a large scale.

In the 2023 and 2024 periods, the average values were relatively stable, at 39.59 and 40.72, respectively, with lower standard deviations compared to the initial period, namely 64.52 and 63.93. The stability of the average value and the decrease in variation between business units show that the structure of the horticultural business is beginning to form more consistently. This condition indicates that business diversification, both horizontally and vertically, has begun to run and contributes to the equitable distribution of horticultural business performance.

The increase in the minimum value from year to year also shows that the business units with the lowest performance have improved. This indicates that the application of technopreneurship plays a role in expanding access to technology and markets more evenly, thereby supporting the strengthening of the diversification of horticultural businesses at the local level. Thus, the results of this descriptive statistics strengthen the finding that the diversification of technopreneurship-based horticultural businesses in Pacet District contributes to increasing business stability and equitable performance between business units.

CONCLUSION

The diversification of horticultural businesses in Pacet District shows dynamic development and tends to lead to a more stable and equitable business structure. In the early observation period, the structure of horticultural businesses was still characterized by a high level of variation between business units, which reflected dependence on a particular commodity or business scale. However, over time, there has been a decrease in the level of variation and dominance of certain businesses, which indicates a process of adjustment and restructuring of horticultural businesses. The mid-to-late period of observation shows a tendency to stabilize the average value and decrease in variation between business units. This condition reflects the beginning of a more consistent pattern of diversification of horticultural businesses, both through horizontal and vertical diversification. The increase in the performance of the business unit with the lowest value also shows a more even improvement at the business actor level. The implementation of diversification of horticultural businesses supported by the technopreneurship approach contributes positively to increasing business stability and equitable performance between horticultural business units in Pacet District.

REFERENCES

- Azc, Francisco M. 2023. "Exploring the Effect of Landscape Composition and Agroecological Practices on Wild Bees in Horticultural Farms In" 71:33–44. <https://doi.org/10.1016/j.baae.2023.05.003>.
- Bell, L W, A D Moore, and D T Thomas. 2021. "Diversified Crop-Livestock Farms Are Risk-Efficient in the Face of Price and Production Variability." *Agricultural Systems* 189:103050. <https://doi.org/10.1016/j.agsy.2021.103050>.
- Dasgupta, Subash, and Indrajit Roy. 2021. *GOOD AGRICULTURAL GOVERNANCE A Resource Guide Focused on Smallholder Crop Production*.
- Maryoni, Hamdi Sari, Siwi Gayatri, Titik Ekowati, Dwi Sunarti, Faculty of Animal Husbandry, and Diponegoro University. 2023. "Broiler Business Is the Best Diversification for Furniture Business" 12 (2): 890–98. <https://doi.org/10.18421/TEM122>.
- Mouratiadou, Ioanna, Nahleen Lemke, Cheng Chen, Ariani Wartenberg, Ralf Bloch, Marco Donat, Thomas Gaiser, et al. 2023. "Environmental Science and Ecotechnology The Digital Agricultural Knowledge and Information System (DAKIS): Employing Digitalisation to Encourage Diversi Fi Ed and Multifunctional Agricultural Systems." *Environmental Science and Ecotechnology* 16:100274. <https://doi.org/10.1016/j.es.2023.100274>.
- Sarimaryoni, Hamdi. 2024. "Improving Operational Efficiency Analysis through Marketing Performance (Cymbopogon Nardus L.)."
- Ratela, G. D., & Taroreh, R. (2016). Analysis of Differentiation Strategy, Quality Products and Price on Purchase Decision Coffee House in Coffee Island. *Jurnal EMBA*, ISSN 2303-1174, 4(1), 460–471.
- Safitri, R., Subhan Prasetyo, A., & Mariyono, J. (2022). *THE INFLUENCE OF MEMBERS' PARTICIPATION AND SATISFACTION TOWARD COOPERATIVES ' PERFORMANCE IN THE CITRA KINA RAYA PRODUCER COOPERATIVE. 1*.
- Sari, C., & Satan, E. (2022). *THE EFFECT OF CUSTOMER LOYALTY ON PROFITABILITY IN A HERBAL MEDICINE COMPANY IN SURABAYA. 6(2022)*.
- Tanjung, M. (2021). Analysis of the Influence of Supervision of Security Performance of Assisted Residents of Class II A Sibolga Correctional Institution (Lapas). *Journal of Social Sciences*, 6(4), 172. <https://doi.org/10.58487/akrabjuara.v6i4.1581>

Trilaksono, A. I., & Prabowo, B. (2023). *Reslaj : Religion Education Social Laa Roiba Journal Analysis of the Influence of Experiential Marketing on Loyalty Reslaj : Religion Education Social Laa Roiba Journal*. 5, 101–112. <https://doi.org/10.47476/reslaj.v5i1.1262>