



DOI: <https://doi.org/10.38035/ijam.v4i1>
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Does Competitive Advantage Mediate the Relationship between Innovation and Business Performance?

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Abstract: The aim of the study is to describe product innovation implementation and marketing innovation implementation, competitive advantage of private Vocational Higher Education Institutions (VHEIs), and their business performances. The study is also to examine the effects of product innovation and marketing innovation on business performance which is mediated by competitive advantage. The unit analysis is leaders of private VHEIs operating in West Java Province Indonesia. This research applies quantitative methods. The populations of the research were 118 private VHEIs in West Java Province, Indonesia and the respondents were 100 leaders of private VHEIs. The sampling technique is simple random sampling. And the study uses the Partial Least Square technique for data analysis. The findings are both product innovation and marketing innovation have positive effects on competitive advantage. Besides, they also have positive effects on business performance. Furthermore, competitive advantage mediates the innovation – business performance relationship. The leaders of VHEIs need to implement product and marketing innovation as well as their competitive advantage to improve their business performance.

Keywords: Product Innovation, Marketing Innovation, Competitive Advantage, Business Performance, Higher Learning Institutions.

INTRODUCTION

According to data from the Central Statistics Agency of Indonesia for February 2023, the unemployment rate in West Java Province was recorded at 7.89%. West Java is the province with the second highest unemployment rate in Indonesia. Banten Province is the province with the highest unemployment rate nationally, namely 7.97% (*Indonesia Official Statistical News No. 35/05/Th. XXVI 5 May 2023*).

Vocational Higher Education Institutions are designed to decrease the unemployment rate in Indonesia. Unemployment originating from Vocational Higher Education Institutions abbreviated as VHEI in West Java province was recorded at 6.37%. This percentage is lower than unemployment from academic higher education which is recorded at 7.58% (*West Java Official Statistical News No. 32/05/32/Th. XXV, 5 May 2023*).

Law No. 20 of 2003 on the National Education System stipulates that vocational education is higher education that prepares for employment with specific applied skills that

are roughly equivalent to a bachelor's degree. Furthermore, vocational training is described as the administration of formal courses in higher education, such as colleges of technology and diploma courses (*National Education System Law*, 2003). By definition, a vocational training program is a higher education program organized by universities / research institutes / academic institutions in addition to undergraduate and professional programs, where they can define their specialized expertise and skills and are motivated to work. The purpose is to develop human resources to be globally competitive. VHEI programs are structured to prioritize skills and practical courses over theoretical courses.

Although VHEIs can decrease the unemployment rate the interest of prospective students to study at vocational higher education institutions is much lower than academic higher education institutions. In 2020, there were 284,481 new students choosing vocational higher education and 1,617,869 new students choosing academic higher education (*Higher Education Statistic 2020*). Some studies on the improvement of VHEI business performance are needed due to lack of literature.

This research aims to analyze and answer some research problems concerning with private Vocational Higher Education Institutions in West Java Province, Indonesia. The research problems are whether product innovation has positive and significant effects on competitive advantage, whether marketing innovation has positive and significant effects on competitive advantage, whether both product innovation and marketing innovation have positive and significant effects on business performance and whether competitive advantage plays its role as mediator in the innovation – business performance relationship.

The research objectives are to describe the variables and confirm the relationships among product innovation, marketing innovation, competitive advantage, and business performance. Referring to the research objectives, this research measures only 4 (four) variables, namely product innovation, marketing innovation, competitive advantage, and business performance. There are some studies about the variables being measured but they are not widely and commonly discussed in terms of private VHEIs.

The research took place in West Java Province, Republic of Indonesia. There were 118 private VHEI listed in Directorate General of Higher Education Research and Technology Regional Office IV West Java and Banten provinces.

This research is based on Resource-Based Theory (RBT) and Knowledge Based Theory (KBT). RBT is a management theory that focuses on the strategic importance of a firm's unique resources and capabilities in gaining a competitive advantage and achieving superior performance. This theory emphasizes that not all resources are equal in terms of their potential to create a sustainable competitive advantage. RBT proposes that a firm's competitive advantage and performance are driven by the distinct and difficult-to-replicate resources and capabilities it possesses. These resources can include tangible assets (such as physical infrastructure and technology), intangible assets (such as brand reputation, intellectual property, and organizational culture), and organizational capabilities (such as efficient processes and skilled workforce) (Bhandari, K. R., Ranta, M., & Salo, 2022).

KBT is a theoretical framework used in strategic management and organizational studies to explain how a firm's knowledge and capabilities contribute to its competitive advantage and overall performance. KBT emphasizes the role of knowledge, information, and expertise as critical assets that enable organizations to create and sustain a competitive advantage in the marketplace. This theory builds on the resource-based view of the firm, which suggests that a firm's unique resources and capabilities are the sources of its competitive advantage. Its key concepts and principles are innovation and competitive advantages. The theory emphasizes the role of knowledge in fostering innovation. Firms that can access and integrate diverse knowledge sources are often more innovative and can develop new products, services, and processes. A firm's competitive advantage arises from its

ability to create, acquire, transfer, and apply knowledge more effectively than its competitors. This advantage is difficult for competitors to replicate, as knowledge is often complex and context-dependent (Grant, R., & Phene, 2022).

Product innovation is the efforts of an economic entity that manufactures a product to improve, refine, or evolve a previously manufactured product into a better product (Christa, U., & Kristinae, 2021). Product innovations can also be defined as new products or services that companies introduce to the market in an attempt to meet the needs of the market or external customers (Heij, C. V., Volberda, H. W., Van den Bosch, F. A., & Hollen, 2020). It is a set of different functional processes that interact to be adaptable to a dynamic environment. For this reason, companies are required to explore new ideas and their creativities (Yusuf, 2021). Overall, product innovation is a dynamic process that fosters creativity, embraces market opportunities, and aims to deliver innovative and valuable products that meet customer demands and drive business success. Dimensions to measure product innovation are product quality, product variety, product design and style (Aniyati, I., & Indayani, 2023).

Marketing innovation is now defined as new marketing tactic applications significantly changing the positioning of the products, the pricing policy, advertising and design/packaging of the products (Medrano, N., Cornejo-Cañamares, M., & Olarte-Pascual, 2020). Nadda, V., & Arnott (2020) defined marketing innovation as new ways companies can market their products. Marketing innovation constitutes a tool used to help managers efficiently use the company resources in order to achieve company competitive advantage (Khairusy, M. A., Hurriyati, R., Suwatno, S., Gaffar, V., Dirgantari, P. D., & Setiana, 2022). In other words, marketing innovation is a dynamic and forward-thinking approach that aims to create competitive advantage, enhance customer experiences, and drive business growth through the adoption of new marketing techniques, technologies, and strategies. The indicators to measure the variable of marketing innovation are the elements of marketing mix, namely product, promotion, place, price, and service (Medrano et al., 2020).

Competitive advantage is defined as the collection of various factors that distinguish the SMEs from their rivals and create uniqueness and superiority for them to compete in the market (Udriyah, U., Tham, J., & Azam, 2019). Competitive advantage is some characteristics, providing a company with a significant advantage for its customers, leading to increased revenue and profits, and sustaining long-term success. It is a series of steps to differentiate one company from its rivals through proactive strategies. And, an organized competitive advantage can help the company capture a larger market share. It means that an increase in the volume of turnover and profits as it becomes the engine and catalyst for companies to develop and enhance their R&D resources and capabilities accordingly. Maintaining this advantage is not only a competitive advantage, but also excellent profitability (Al-khawaldah, R., Al-zoubi, W., Alshaer, S., Almarshad, M., ALShalabi, F., Altahrawi, M., & Al-hawary, 2022). It can also be defined as a set of trusted capabilities of the employees in a company to improve the uniqueness of its resources so as to meet customers' needs, desires and customer value (Muis, I., & Isyanto, 2021). In conclusion, competitive advantage are company abilities to create unique attributes, effective strategies, or excellent capabilities that can make a company outperform its rivals and be superior in the marketplace. It is the advantage a company possesses over its competitors that can attract its customers, make more sales, and make sustainable profitability.

Competitive advantage dimensions are superior efficiency, superior quality, customer responsiveness (Distanont, A., & Khongmalai, 2020), product uniqueness, product quality, competitive pricing (Aniyati, I., & Indayani, 2023), innovation, differentiation, and low-cost leadership (Udriyah, U., Tham, J., & Azam, 2019). Competitive advantage is obtained by means of focusing on production quality, cost minimization and better customer and supplier

engagement, so that an organization can persuade customers about the products offered, capacity will increase, and the market will strengthen its market share, differentiate companies from competitors and increase sales, win rate, and return on investment (Al-khawaldah, R., Al-zoubi, W., Alshaer, S., Almarshad, M., ALShalabi, F., Altahrawi, M., & Al-hawary, 2022).

Performance is the effort that can be made by individuals or groups within an organization according to their powers and responsibilities, morally and legally, in an attempt to achieve the organization objectives (Adnani, L., Jusuf, E., Alamsyah, K., & Jamaludin, 2023). A phenomenon consisting of a set of attributes focused on the satisfaction of construction SME stakeholders, delivered in a culture that motivates construction SME owner-managers to coordinate resources and activities (Wentzel, L., Fapohunda, J. A., & Haldenwang, 2022). Organizational performance can be defined as the measurable results that an organization achieves relative to its goals (Muis, I., & Isyanto, 2021). Business performance is the measurement and evaluation of a company's success in the achievement of goals and objectives. It is about an assessment on how well the company is performing on various key performance indicators (KPIs) and financial indicators. Business performance includes both quantitative and qualitative aspects, providing insight into the overall health and effectiveness of an organization. The indicators used to measure company performance are that all employees are satisfied with their jobs, that all graduates have high work qualifications, and that all employees are agreement on the efficient use of resources to complete (Muis, I., & Isyanto, 2021).

Several studies have been done so far and found relationships among the variables. Product innovation has a positive and significant effect on competitive advantage as confirmed by Dong, Q., Wu, Y., Lin, H., Sun, Z., & Liang (2022), Hang, Y., Sarfraz, M., Khalid, R., Ozturk, I., & Tariq (2022), and Aniyati, I., & Indayani (2023). Marketing innovation has a positive and significant effect on competitive advantage as confirmed by Jeong, S. W., & Chung (2023), Olazo, (2020), Hussain, I., Mu, S., Mohiuddin, M., Danish, R. Q., & Sair (2020). Product innovation has a positive and significant effect on business performance as confirmed by Christa, U., & Kristinae (2021), Khamaludin, K., Syam, S., Rismaningsih, F., Lusiani, L., Arlianti, L., Herlani, A., ... & Widiyatun (2022), and Ramadani, V., Hisrich, R. D., Abazi-Alili, H., Dana, L. P., Panthi, L., & Abazi-Bexheti (2019). Marketing innovation has a positive and significant effect on business performance as confirmed by Cuevas-Vargas, H., & Cortés-Palacios, (2020), Cuevas Vargas, H., Fernández Escobedo, R., Cortés Palacios, H. A., & Ramírez Lemus (2021) and Na, Y. K., Kang, S., & Jeong (2019). The positive and significant competitive advantage and business performance relationship has been confirmed by Lestari, D. M., Haryono, S., & Furwanti (2022), Wongsansukcharoen, J., & Thaweepaiboonwong, (2023), and Muis, I., & Isyanto (2023). Competitive advantage has become a mediator in relationship between product innovation and business performance as confirmed by Hang, Y., Sarfraz, M., Khalid, R., Ozturk, I., & Tariq (2022) and Udriyah, U., Tham, J., & Azam (2019). And competitive advantage has become a mediator in marketing innovation and business performance relationship as confirmed by Na, Y. K., Kang, S., & Jeong (2019) and Jeong, S. W., & Chung (2023).

Referring to the theories mentioned before, some hypothesis are formulated as follows:

H1: Product innovation affects business performance positively and significantly.

H2: Product innovation affects competitive advantage positively and significantly.

H3: Marketing Innovation affects business performance positively and significantly.

H4: Marketing innovation affects competitive advantage positively and significantly.

H5: Competitive advantage affects business performance positively and significantly.

H6: Product innovation affects business performance positively and significantly mediated by competitive advantage.

H7: Marketing innovation affects business performance positively and significantly mediated by competitive advantage.

The above hypotheses are formulated with reference to the following conceptual model:

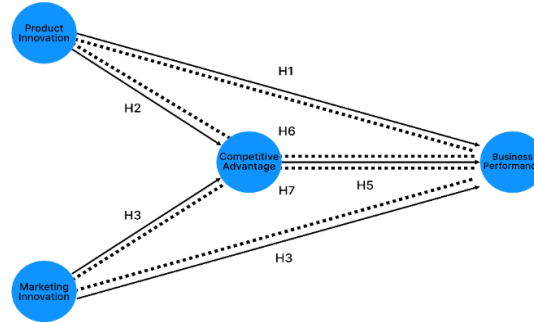


Figure 1. Conceptual Model

Source: Author

Many researchers have measured the four observational variables so far, but few observe them on private VHEIs. As a result, the impact of product and marketing innovations on private VHEI performance via competitive advantage has not been fully explained. It is caused by the lack of literature.

The research examines the relationship between the variables of product innovation and marketing innovation and the variable of competitive advantage, the relationship between the variables of product innovation and marketing innovation and the variable of business performance, and also the existence of competitive advantage as an intermediary in the relationship between product and marketing innovation and business performance.

METHOD

Partial Least Squares (PLS) method using the Smart PLS version 3 was used. It investigated the relationship between product innovation and marketing innovation in private VHEIs performance mediated by competitive advantage. Product innovation and marketing innovation are the independent variables and business performance is the dependent variable. Competitive advantage is a mediating variable.

The study population included 118 civilian VHEIs from West Java, Indonesia. There were 100 respondents who are the leaders of the private VHEIs. The ideal sample size is 100 – 200 (Hair JR, 2010). A simple random sample was used. Questionnaires were randomly distributed electronically. Respondents were asked to participate voluntarily.

Primary data were collected from questionnaires in June 2023. Secondary data now supports primary data. Secondary data is obtained from information such as magazines, report, news, etc. The variable indicators are as follows:

Table 1. Indicators of the Variables

No.	Indicators of Product Innovation
1	We always improve the quality of educational services in our campus
2	We always provide the best educational services for students and parents
3	We always create new added value in education services for students and parents
4	We always strive for the added value that we create to be the uniqueness of our campus
5	We always update our educational service process to make it much better
No.	Indicators of Marketing Innovation
1	We always implement educational service excellence on our campus
2	We always carry out marketing activities in new ways and according to trends
3	We always set tuition fees with a strategy or approach that is different from our closest competitors
4	We are always updating our marketing channels so that we are closer to prospective students
5	We always update the process of delivering educational services on our campus
No.	Indicators of Competitive Advantage
1	We are very efficient in campus management activities
2	The quality of our educational services is better than our closest competitors
3	Our lecturers and education staff are very responsive to the needs of students and parents
4	The educational services on our campus are different and unique when compared to

	competitors
5	Tuition fees at our campus are very competitive compared to our closest competitors
No.	Indicators of Business Performance
1	Lecturers and education staff always feel satisfied at work
2	All employees use resources efficiently
3	All work targets can be achieved effectively and productively
4	Our students are always satisfied with the educational services provided
5	All graduates are of high quality for work

Source: Author

RESULTS AND DISCUSSIONS

We will discuss the relationships between variables in more detail. The SmartPLS output of the load factor analyzed by the partial least squares algorithm gives the following result:

Table 2. Result for Outer Loadings

	Competitive Advantage	Business Performance	Marketing Innovation	Product Innovation
X11				0,833
X12				0,807
X13				0,870
X14				0,819
X15				0,866
X21			0,796	
X22			0,854	
X23			0,841	
X24			0,819	
X25			0,802	
Y11	0,845			
Y12	0,740			
Y13	0,739			
Y14	0,842			
Y15	0,771			
Z11		0,898		
Z12		0,865		
Z13		0,834		
Z14		0,866		
Z15		0,839		

Source: Data Processed

Convergence validity is satisfied if the load factor value is greater than 0.5 (Sugiyono, 2018). The minimum loading factor value is 0.622, as shown in Table 8. This means that all indices for all variables satisfy convergence validity. Figure 2 shows the graph of loading factor values for all indicators in the structural model.

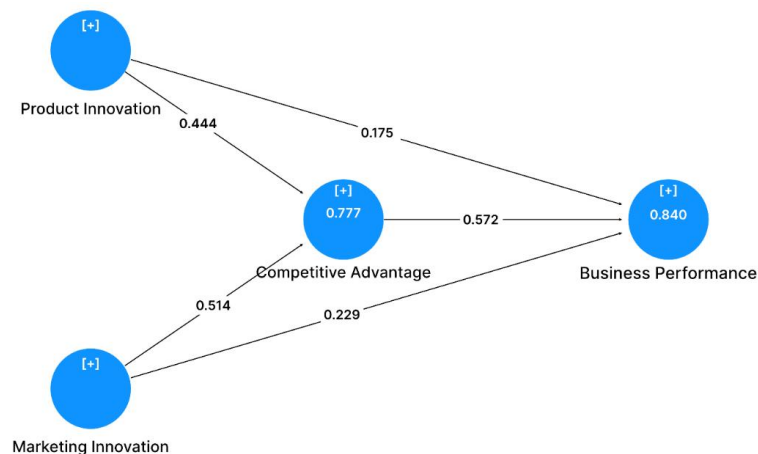


Figure 2. Loading Factor Value

Source: Data Processed Discriminant validity can be seen in the cross loading as listed in the following table below:

Table 3. Result for Cross Loadings

	Competitive Advantage	Business Performance	Marketing Innovation	Product Orientation
X11	0,554	0,580	0,424	0,833
X12	0,458	0,482	0,409	0,807
X13	0,675	0,671	0,538	0,870
X14	0,819	0,827	0,813	0,853
X15	0,685	0,645	0,571	0,866
X21	0,612	0,637	0,796	0,619
X22	0,845	0,854	0,866	0,753
X23	0,576	0,589	0,841	0,408
X24	0,526	0,529	0,819	0,336
X25	0,723	0,656	0,802	0,599
Y11	0,866	0,845	0,854	0,753
Y12	0,740	0,536	0,501	0,536
Y13	0,739	0,525	0,608	0,606
Y14	0,898	0,842	0,636	0,721
Y15	0,771	0,601	0,565	0,464
Z11	0,842	0,898	0,636	0,721
Z12	0,694	0,865	0,705	0,625
Z13	0,680	0,834	0,660	0,589
Z14	0,845	0,866	0,854	0,753
Z15	0,785	0,839	0,650	0,686

Source: Data Processed

An indicator is valid if its loading factor value is greater than the loading factor values of other indicators. (Sugiyono, 2018). Table 3 shows loading factor value for Y14 in competitive advantage variable is 0,898 which is higher than loading factors for indicators of product innovation (0,721), marketing innovation (0,636), and business performance (0,842). Based on the data shown in table 3 it is concluded that all indicators in all variables observed have discriminant validity.

Another way to check the validity of the discriminant is to consider the average sample variance (AVE) value. An AVE result of 0.5 or greater is satisfactory (Sugiyono, 2018).

Table 4. Average Variance Extracted (AVE)

Average Variance Extracted (AVE)	
Competitive Advantage	0,622
Business Performance	0,741
Marketing Innovation	0,677
Product Innovation	0,704

Source: Data Processed

Table 4 shows that the value 0.622 in the competitive advantage construct is the lowest value of AVE. The other variables are also above 0,5. It also indicates that each variable is valid.

Reliability is tested by examining the composite reliability value of each indicator in the variables. Table 5 shows composite reliability results of all variables being observed. It is considered a satisfactory value if it is above 0,7 (Sugiyono, 2018).

Table 5. Reliability Indicators

	Composite Reliability	Cronbach's Alpha	rho_A
Competitive Advantage	0,891	0,850	0,874
Business Performance	0,935	0,913	0,917
Marketing Innovation	0,913	0,882	0,900
Product Innovation	0,922	0,897	0,915

Source: Data Processed

The variable with the lowest value of composite reliability is business performance variable (0,935). The rest of the variables are more than 0,7. It also indicates that the indicators are reliable. Besides, table 5 also shows Cronbach's alpha result as another indicator of reliability. It is considered satisfactory if the value is above 0,6 (Sugiyono, 2018). The variable with the lowest value of Cronbach's alpha is competitive advantage (0,850). The other values of the variables are above 0,6. It indicates that all indicators are reliable. Reliability is also tested by rho-a result. It is considered a satisfactory value if it is above 0,5 (Sugiyono, 2018). As shown in Table 5 the variable with the lowest value of rho a is competitive advantage (0.874). And the rest of the variables are above 0,5 indicating that the indicators are reliable.

Considering the values of indicators of all variables based on the above tables it is concluded that all indicators in the model meet the reliability and validity criteria.

After the estimated model satisfies the external model criteria, the structural model then is tested. Table 6 below shows the R-squared values.

Table 6. R Square and R Square Adjusted

	R Square	R Square Adjusted
Competitive Advantage	0,777	0,767
Business Performance	0,840	0,829

Source: Data Processed

Table 6 shows that competitive advantage simultaneously affects business performance. It means that competitive advantage can explain the variable of business performance.

As shown in Table 7 the values of criteria in saturated and estimated model have met model fit as follows:

Table 7. Model Fit

	Saturated Model	Estimated Model
SRMR	0,128	0,128
d_ULS	3,464	3,464

d_G	n/a	n/a
Chi-Square	Infinite	Infinite
NFI	n/a	n/a

Source: Data Processed

The following table 8 shows in the total effects (mean, standard deviation, t-values) that indicate hypothesis testing in Smart PLS.

Table 8. Hypothesis Testing

Kode	Hipotesis	Original Sample	Sample Mean	Standard Deviation	T statistics	P values	Hypothesi Results
H1	Product Innovation (X1) -> Business Performance (Z1)	0,175	0,180	0,084	2,082	0,038	Accepted
H2	Product Innovation (X1) -> Competitive Advantage (Y1)	0,444	0,434	0,089	4,968	0,000	Accepted
H3	Marketing Innovation (X2) -> Business Performance (Z1)	0,229	0,216	0,114	2,003	0,046	Accepted
H4	Marketing Innovation (X2) -> Competitive Advantage (Y1)	0,514	0,526	0,080	6,406	0,000	Accepted
H5	Competitive Advantage (Y1) -> Business Performance (Z1)	0,572	0,579	0,112	5,097	0,000	Accepted
H6	Product Innovation -> Competitive Advantage (Y1) -> Business Performance (Z1)	0,294	0,305	0,078	3,763	0,000	Accepted
H7	Marketing Innovation-> Competitive Advantage (Y1) -> Business Performance (Z1)	0,254	0,250	0,069	3,663	0,000	Accepted

Source: Data Processed

Table 8 shows the relationship between product innovation and business performance. It is significant with t-statistics of $2,082 > t$ table $1,96$ and P values $0,038 < 0,05$. As P value is not more than 0.05 it is confirmed that the product innovation and business performance relationship is significant. The original sample estimate is 0,175, which indicates a positive direction for the product innovation and business performance relationship. Therefore, the H1 hypothesis that product innovation has a positive impact on business performance is accepted. The implementation of product innovation in VHEIs can improve business performance of VHEIs. By improving the quality of educational services of VHEIs, providing the best educational services for students and parents, creating new added value in education services for students and parents, striving for the added value created to be the uniqueness of VHEIs, and updating the educational service process to make it much better VHEIs will create work satisfaction of the faculty members, efficiency, effectiveness, student satisfaction and graduates with high quality for work. This finding supports the previous

researches of Christa, U., & Kristinae, (2021), Khamaludin, K., Syam, S., Rismaningsih, F., Lusiani, L., Arlianti, L., Herlani, A., ... & Widiyatun (2022), Ramadani, V., Hisrich, R. D., Abazi-Alili, H., Dana, L. P., Panthi, L., & Abazi-Bexheti, (2019).

As also shown in table 8 the relationship between product innovation and competitive advantage is significant with a T-statistic of $4,968 > t$ table 1,96 and P values $0,000 < 0,05$. The original sample estimate is 0,444 which indicates a positive product innovation and competitive advantage relationship. Thus, the H2 hypothesis in this study stating that product innovation affects competitive advantage significantly and positively is accepted. The implementation of product innovation can encourage the leaders of VHEIs to create competitive advantage. By improving the quality of educational services of VHEIs, providing the best educational services for students and parents, creating new added value in education services for students and parents, striving for the added value created to be the uniqueness of VHEIs, and updating the educational service process to make it much better VHEIs are encouraged to be more efficient, effective, responsive to the needs of the market, and unique. This finding confirms some previous research results of Dong, Q., Wu, Y., Lin, H., Sun, Z., & Liang (2022), Hang, Y., Sarfraz, M., Khalid, R., Ozturk, I., & Tariq (2022), and Aniyati, I., & Indayani (2023).

Furthermore, in table 8 it is shown that marketing innovation and business performance association is significant, with t-statistics of $2.003 > t$ table 1.96 and P values $0,046 < 0,05$. The original sample estimate is 0.229, which indicates a positive direction for the relationship between marketing innovation and business performance. Thus, the H3 hypothesis in this study stating that marketing innovation has a positive and significant effect is also accepted. By implementing educational service excellence, carrying out marketing activities in new ways and according to trends, setting tuition fees with a strategy or approach that is different from closest competitors, updating marketing channels to be much closer to prospective students, and updating the process of delivering educational services VHEIs create work satisfaction of the faculty members, efficiency, effectiveness, student satisfaction and graduates with high quality for work. This finding confirms some previous research findings of Cuevas-Vargas, H., & Cortés-Palacios (2020), Cuevas Vargas, H., Fernández Escobedo, R., Cortés Palacios, H. A., & Ramírez Lemus (2021), Na, Y. K., Kang, S., & Jeong (2019).

Table 8 shows that the relationship between marketing innovation and competitive advantage is significant with $6,406 > t$ statistics in t table 1.96 and P values $0,000 < 0,05$. The original sample estimate is positive and equal to 0.514, indicating that the direction of the relationship between marketing innovation and competitive advantage is positive. Thus, the H4 hypothesis in this study stating that marketing innovation affects competitive advantage significantly and positively is also accepted. VHEIs implement educational service excellence, carry out marketing activities in new ways and according to trends, set tuition fees with a strategy or approach that is different from closest competitors, update marketing channels to be closer to prospective students, and update the process of delivering educational services. By doing so VHEIs create their competitive advantage by being efficient in campus management activities, improving the quality of educational services, encouraging lecturers and education staff to be very responsive to the needs of students and parents, and being different and unique when compared to competitors as well pricing competitively. This finding confirms some previous research findings of Jeong, S. W., & Chung, (2023), Olazo (2020), and Hussain, I., Mu, S., Mohiuddin, M., Danish, R. Q., & Sair (2020).

As shown in table 8 the t-statistic is $5,097 > t$ table 1.96 and P values $0,000 < 0,05$, which indicates that the relationship between competitive advantage and performance is significant. The original estimate of the sample is 0.572 that indicates a positive direction of competitive advantage and business performance relationship. Thus, the H5 hypothesis stating that competitive advantage affects business performance significantly and positively

is also accepted. By being efficient in campus management activities, improving the quality of educational services, encouraging lecturers and education staff to be very responsive to the needs of students and parents, and being different and unique when compared to competitors as well pricing competitively VHEIs create work satisfaction of the faculty members, efficiency, effectiveness, student satisfaction and graduates with high quality. This finding confirms some previous research findings of Lestari, D. M., Haryono, S., & Furwanti (2022), Wongsansukcharoen, J., & Thaweepaiboonwong (2023), and Muis, I., & Isyanto (2023)

Table 8 shows that product innovation and performance relationship, which is mediated by competitive advantage is significant with the t-statistic is $3,763 > t$ table 1.96 and P values $0,000 > 0.05$. The original sample estimate is 0,294 which indicates that the direction of the relationship positive. Thus, the H6 hypothesis stating that product innovation affects business performance significantly and positively mediated by competitive advantage is also accepted. It means that the implementation of product innovation can improve the business performance of the VHEIs when VHEIs create competitive advantage in their business operations. This finding confirms some previous research findings of Hang, Y., Sarfraz, M., Khalid, R., Ozturk, I., & Tariq (2022) and Udriyah, U., Tham, J., & Azam (2019).

Table 8 shows that marketing innovation and business performance, which is mediated by competitive advantage is significant with the t-statistic is $3.663 > t$ table 1.96 and P values $0,000 > 0.05$. The original sample estimate is 0.254 which shows that the direction of the relationship between marketing innovation and business performance which is mediated by competitive advantage is positive. Thus, the H7 hypothesis stating that marketing innovation affects business performance significantly and positively mediated by competitive advantage is also accepted. It means that the implementation of marketing innovation improves business performance of VHEIs if they create competitive advantage in their business operations. This finding supports some previous research findings of Na, Y. K., Kang, S., & Jeong (2019) and Jeong, S. W., & Chung (2023).

In theory, product innovation has a positive impact on business performance, and product innovation has a positive impact on competitive advantage. The study also confirmed that marketing innovation impacts business performance and competitive advantage. It has also been confirmed that competitive advantage mediates the relationship between product innovation and business performance, and the relationship between marketing innovation and business performance.

For practical implications, to improve VHEI's performance, it is important that VHEI continuously improve its implementation of product innovation, marketing innovation and competitive advantage.

CONCLUSION

The purposes of this research are to describe the implementation of the observed variables and to confirm the effects of product innovation and marketing innovation on business performance mediated by competitive advantage as confirmed by the previous studies. It is found that all variables observed were well implemented. There are, however, opportunities to improve them. Both product innovation and marketing innovation have positive effects on competitive advantage and also business performance. Furthermore, competitive advantage also has effect on business performance positively and significantly. Competitive advantage also mediates product innovation-business performance relationship and marketing innovation-business performance relationship.

To improve business performance of VHEIs, the VHEI leaders need to implement product innovation. They also need to implement marketing innovation and competitive advantage. VHEIs implement the product innovation by improving the quality of educational services of VHEIs, providing the best educational services for students and parents, creating new added value in education services for students and parents, striving for the added value created to be the uniqueness of VHEIs, and updating the educational service process to make it much better. VHEIs also implement marketing innovation by implementing educational service excellence, carrying out marketing activities in new ways and according to trends, setting tuition fees with a strategy or

approach that is different from closest competitors, updating marketing channels to be much closer to prospective students, and updating the process of delivering educational services. VHEIs create competitive advantage by being efficient in campus management activities, improving the quality of educational services, encouraging lecturers and education staff to be very responsive to the needs of students and parents, and being different and unique when compared to competitors as well pricing competitively. By implementing product innovation and marketing innovation as well as competitive advantage VHEIs improve their business performance such as making lecturers and education staff feel satisfied at work, encouraging all employees to use resources efficiently, achieving all work targets effectively and productively, making students satisfied with the educational services provided and creating all graduates with high quality for work.

There are some limitations in this study. Firstly, the unit analysis is only the leaders of VHEIs operating in West Java Province Indonesia. Secondly, the independent variables being observed in this study are only 2 (two) variables, namely product innovation and marketing innovation.

There are some other variables possibly having effects on business performance for future research. They are market orientation, leadership, organizational culture, and so on.

Last, but not least, it is hoped that this study can inspire VHEIs to improve their business performance by implementing product innovation, marketing innovation, and competitive advantage in the operation of VHEIs.

Acknowledgments

The authors also thank the leaders of Bina Insani University for facilitating the research resources and leaders of VHEIs for their willingness to participate in this research.

REFERENCES

- Adnani, L., Jusuf, E., Alamsyah, K., & Jamaludin, M. (2023). The role of innovation and information sharing in supply chain management and business performance of halal products in tourism destinations. *Uncertain Supply Chain Management*, 11(1), 195–202.
- Al-khawaldah, R., Al-zoubi, W., Alshaer, S., Almarshad, M., ALShalabi, F., Altahrawi, M., & Al-hawary, S. (2022). Green supply chain management and competitive advantage: The mediating role of organizational ambidexterity. *Uncertain Supply Chain Management*, 10(3), 961–972.
- Aniyati, I., & Indayani, L. (2023). The Effect of Market Orientation and Product Innovation on Marketing Performance Through Competitive Advantage as an Intervening Variable in MSME Bags in Sidoarjo. *Academia Open*, 8, 10–21070.
- Bhandari, K. R., Ranta, M., & Salo, J. (2022). The resource-based view, stakeholder capitalism, ESG, and sustainable competitive advantage: The firm's embeddedness into ecology, society, and governance. *Business Strategy and the Environment*, 31(4), 1525–1537.
- Christa, U., & Kristinae, V. (2021). The effect of product innovation on business performance during COVID 19 pandemic. *Uncertain Supply Chain Management*, 9(1), 151–158.
- Cuevas-Vargas, H., & Cortés-Palacios, H. A. (2020). Efectos de la estructura de capital en la innovación. *Investigación Administrativa*, 49(126).
- Cuevas Vargas, H., Fernández Escobedo, R., Cortés Palacios, H. A., & Ramírez Lemus, L. (2021). *The relation between adoption of information and communication technologies and marketing innovation as a key strategy to improve business performance*.
- Distanont, A., & Khongmalai, O. (2020). The role of innovation in creating a competitive advantage. *Kasetsart Journal of Social Sciences*, 41(1), 15–21.
- Dong, Q., Wu, Y., Lin, H., Sun, Z., & Liang, R. (2022). Fostering green innovation for corporate competitive advantages in big data era: the role of institutional benefits. *Technology Analysis & Strategic Management*, 1–14.
- Grant, R., & Phene, A. (2022). The knowledge based view and global strategy: Past impact and future potential. *Global Strategy Journal*, 12(1), 3–30.

- Hang, Y., Sarfraz, M., Khalid, R., Ozturk, I., & Tariq, J. (2022). Does corporate social responsibility and green product innovation boost organizational performance? a moderated mediation model of competitive advantage and green trust. *Economic Research-Ekonomska Istraživanja*, 35(1), 5379–5399.
- Heij, C. V., Volberda, H. W., Van den Bosch, F. A., & Hollen, R. M. (2020). How to leverage the impact of R&D on product innovation? The moderating effect of management innovation. *R&D Management*, 50(2), 277–294.
- Higher Education Statistics 2020*. (n.d.).
- Hussain, I., Mu, S., Mohiuddin, M., Danish, R. Q., & Sair, S. A. (2020). Effects of sustainable brand equity and marketing innovation on market performance in hospitality industry: Mediating effects of sustainable competitive advantage. *Sustainability*, 12(7), 2939.
- Indonesia Official Statistical News No. 35/05/Th. XXVI 5 May 2023*. (n.d.).
- Jeong, S. W., & Chung, J. E. (2023). Enhancing competitive advantage and financial performance of consumer-goods SMEs in export markets: how do social capital and marketing innovation matter? *Asia Pacific Journal of Marketing and Logistics*, 35(1), 74–89.
- Khairusy, M. A., Hurriyati, R., Suwatno, S., Gaffar, V., Dirgantari, P. D., & Setiana, S. M. (2022). Marketing innovation: Development strategy of private university in Indonesia. *Journal of Eastern European and Central Asian Research (JEECAR)*, 9(5), 776–788.
- Khamaludin, K., Syam, S., Rismaningsih, F., Lusiani, L., Arlianti, L., Herlani, A., ... & Widiyatun, F. (2022). The influence of social media marketing, product innovation and market orientation on Indonesian SMEs marketing performance. *International Journal of Data and Network Science*, 6(1), 9–16.
- Lestari, D. M., Haryono, S., & Furwanti, R. (2022). The Role of Competitive Advantage and the Exploration of Religiosity to Decrease Customer Switching Behaviour in Islamic Banking. *Annual International Conference on Islamic Economics and Business (AICIEB)*, 119–132.
- Medrano, N., Cornejo-Cañamares, M., & Olarte-Pascual, C. (2020). The impact of marketing innovation on companies' environmental orientation. *Journal of Business & Industrial Marketing*, 35(1), 1–12.
- Muis, I., & Isyanto, P. (2021). Market Orientation, Transformational Leadership, Partnership Effects on Organizational Performance: A Competitive Advantage as a Mediator. *Binus Business Review*, 12(3), 263–277.
- Muis, I., & Isyanto, P. (2023). Does Competitive Advantage Mediate Innovation Capability and Organizational Ambidexterity-Organizational Performance Relationship? *International Journal of Artificial Intelligence Research*, 6(1.1).
- Na, Y. K., Kang, S., & Jeong, H. Y. (2019). The effect of market orientation on performance of sharing economy business: Focusing on marketing innovation and sustainable competitive advantage. *Sustainability*, 11(3), 729.
- Nadda, V., & Arnott, I. (2020). Marketing Innovation in Tourism. In *Handbook of Research on Innovations in Technology and Marketing for the Connected Consumer*. IGI Global, 401–415.
- National Education System Law*. (2003).
- Olazo, D. (2020). The Mediating Role of Marketing Innovation to the Marketing Competence and Sustainable Competitive Advantage of the Selected Small and Medium Enterprises. *EasyChair*, (No. 4738).
- Ramadani, V., Hisrich, R. D., Abazi-Alili, H., Dana, L. P., Panthi, L., & Abazi-Bexheti, L. (2019). Product innovation and firm performance in transition economies: A multi-

- stage estimation approach. *Technological Forecasting and Social Change*, 140, 271–280.
- Sugiyono. (2018). *Metode Penelitian Kuantitatif, Kualitatif dan R&D* (28th ed.). Alfabeta.
- Udriyah, U., Tham, J., & Azam, S. (2019). The effects of market orientation and innovation on competitive advantage and business performance of textile SMEs. *Management Science Letters*, 9(9), 1419–1428.
- Wentzel, L., Fapohunda, J. A., & Haldenwang, R. (2022). The relationship between the integration of CSR and sustainable business performance: Perceptions of SMEs in the South African construction industry. *Sustainability*, 14(3), 1049.
- West Java Official Statistical News No. 32/05/32/Th. XXV, 5 May 2023. (n.d.).
- Wongsansukcharoen, J., & Thaweepaiboonwong, J. (2023). Effect of innovations in human resource practices, innovation capabilities, and competitive advantage on small and medium enterprises' performance in Thailand. *European Research on Management and Business Economics*, 29(1), 100210.
- Yusuf, A. (2021). The Influence of Product Innovation and Brand Image on Customer Purchase Decision on Oppo Smartphone Products in South Tangerang City. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*, 2(1), 472–481.