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The Impact of Business Synergy and Digital Orientation on University Performance

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Abstract

This study aims to analyze the influence of business synergy and digital orientation on university performance. Ninety respondents from various universities were selected using purposive sampling. Data were analyzed using Smart PLS software to test the structural model and relationships between variables. The results indicate that business synergy significantly influences university performance, while digital orientation does not. These findings highlight that improving university performance in the digital era depends on the institution's ability to develop digital capabilities and implement them effectively in a structured manner. The main limitations of this study lie in the relatively small sample size and the use of cross-sectional data. Future research is recommended to expand the sample size and employ a longitudinal approach to obtain more comprehensive results.

Introduction

In the digital era, higher education institutions are expected to play a strategic role in producing high-quality human capital capable of adapting to rapid technological change and global competition (Keskes et al., 2018; Mamanazarov et al., 2025; Xiao et al., 2025). Digitalization is now a fundamental component in driving university performance, as it affects the way we access and disseminate information, as well as how organizations operate and compete (Ramadania et al., 2024). University performance is often reflected in national accreditation results, where the quality of teaching, research, and institutional management are assessed. Lecturers, as core academic resources, contribute significantly to shaping these outcomes by delivering knowledge, conducting research, and mentoring students. In response to the demands of the Fourth Industrial Revolution, universities are under increasing pressure to improve performance and demonstrate competitiveness on both national and international levels (Alasiri & AlKubaisy, 2022). Additionally, internal factors such as a supportive work environment influence staff motivation and productivity, which in turn impacts institutional outcomes. Therefore, the integration of digital technologies across academic and administrative functions is not only essential for operational efficiency, but also for enhancing educational quality, institutional relevance, and long-term competitiveness in a rapidly evolving digital landscape (Al-Jubouri, 2023). Performance is the work results that can be achieved by a person or group of people in an organization, both quantitatively, in accordance with the authority and duties of each individual, in an effort to achieve the goals of the organization concerned legally, without violating the law and in accordance with morals or ethics (Santoso & Afifah, 2020). In other words, the survival of a company is determined by the performance of its employees (Budiono & Santoso, 2020). There are several factors that influence the university performance, such as business synergy and digital orientation (Baawain et al., 2025; Renta & Ali, 2025; Joesoep & Daihani, 2023).

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In the era of globalization and technological disruption, universities are faced with the challenge of not only fulfilling their traditional functions as institutions of education and research but also transforming into adaptive, innovative, and collaborative organizations (Ul Hassan et al., 2025; Aithal & Maiya, 2023; Wawak et al., 2024). One increasingly relevant strategy in this context is the implementation of business synergy, which refers to strategic integration and collaboration between universities and businesses, industries, governments, and other stakeholders. This synergy facilitates the exchange of resources and knowledge, as well as the co-creation of value, which can strengthen the university's position and competitiveness in the long term. A study by Sitiari et al. (2024) found that business strategy serves as a key mediator in the relationship between knowledge management and competitive advantage in universities, indicating that business management principles can be effectively applied in higher education governance. Furthermore, the integration of higher education resources with digital infrastructure has also been shown to significantly improve the efficiency and performance of universities, representing a form of internal and external synergy that reinforces institutional capacity. Therefore, business synergy is a crucial element in enhancing university performance holistically, both in academic and non-academic aspects, and in responding to the increasingly complex and competitive external environment (Xie & Zhang, 2024).

Digital orientation is a form of strategic organizational orientation that focuses on leveraging digital technologies to create competitive advantage and enhance organizational performance. Conceptually, digital orientation reflects the extent to which an organization possesses the commitment, strategy, and capability to identify, evaluate, and exploit opportunities arising from digital technological developments. Digital orientation refers to a company's strategic commitment to adopting digital technologies in order to enhance innovation and competitiveness (Kindermann et al., 2021). In the context of higher education, digital orientation refers to an institution's readiness to adopt and utilize digital technologies in learning processes, administration, and interactions with stakeholders. This includes aspects such as digital infrastructure, the digital competencies of lecturers and students, as well as policies that support digital transformation (Chounta et al., 2024). Organizations with a strong digital orientation tend to be more adaptive to technological changes and quicker in integrating digital solutions into their operations. With a strong digital orientation, universities can be more responsive to technological advancements, improve the quality of teaching and learning, and expand educational access and participation across the academic community.

This study aims to analyze the impact of business synergy and digital orientation on university performance. Specifically, this study seeks to measure how business synergy influences university performance, while also examining the role of digital orientation in improving academic achievement, research productivity, and institutional management. This study is expected to provide empirical contributions that explain the mechanisms of these relationships and offer strategic recommendations for university administrators to optimize digital to achieve superior performance.

Literature Review

Business Synergy and University Performance

Business synergy is an essential concept in organizational management that describes how strategic collaboration between units or organizations can generate greater value than when they operate independently. In the context of universities, business synergy encompasses collaboration among faculties, research institutions, industry partners, and university business units to enhance overall institutional performance. Through such synergy, universities can optimize resources such as academic staff, facilities, and management information systems to

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support their vision and mission (Sudirman & Ridwan, 2025). Synergy among units such as research centers, training institutions, and university enterprises also facilitates knowledge exchange, financial efficiency, improved faculty productivity, and expanded industrial partnerships. With proper integration, the three pillars of higher education teaching, research, and community service can function harmoniously within a sustainable business orientation (Astuty et al., 2022). Furthermore, business synergy within universities encourages the emergence of innovation and program diversification. However, the implementation of synergy often faces several challenges, including organizational cultural differences, resistance to change, and lack of coordination. Therefore, visionary leadership and open communication are required to ensure that all units pursue common goals. Universities that are able to establish effective business synergy generally possess adaptive governance and a collaborative work culture (Sukandi, 2024). Work results that can be carried out by individuals or groups of people in a company in accordance with their respective authorities and responsibilities to illegally achieve the goals of an organization without violating the law, morals or ethics (Afandi, 2018 in Islamiyah et al., 2021). Thus, the first hypothesis in this study is as follows: H1: The business synergy has a significant effect on the university performance.

Digital Orientation and University Performance

Digital orientation is a strategic approach that focuses on leveraging digital technologies to enhance organizational efficiency, innovation, and competitiveness, including within the higher education sector. In the context of universities, digital orientation reflects the extent to which institutions are able to adopt technology to support academic, administrative, and collaborative processes, thereby improving institutional adaptability to global technological change (Kindermann et al., 2024). The implementation of digital orientation strengthens university performance through managerial efficiency and increased research productivity. By integrating academic information systems, big data analytics, and collaborative technologies, universities can optimize the performance of academic and administrative staff while accelerating innovation processes and organizational effectiveness. Moreover, digital orientation fosters the development of an innovative academic culture that is open to change. Faculty members and students who are accustomed to using digital technologies tend to be more adaptive to modern learning models such as blended learning and virtual collaboration. With a well-developed digital orientation, universities can achieve excellence in academic, administrative, and social dimensions while reinforcing their role within an increasingly digital global education ecosystem (Chounta et al., 2024). Work results that can be carried out by individuals or groups of people in a company in accordance with their respective authorities and responsibilities to illegally achieve the goals of an organization without violating the law, morals or ethics (Afandi, 2018 in Islamiyah et al., 2021). Performance is an action, not an event (Nurhidayati et al, 2022). Thus, the second hypothesis in this study is as follows: H2: The digital orientation has a significant effect on the university performance.

Based on the description of the background, research objectives, problem formulation, and hypothesis development, this study develops a research model that explains the relationship between Business Synergy, Digital Orientation, and University Performance. Business Synergy and Digital Orientation are positioned as independent variables, while University Performance is positioned as the dependent variable. The model is used to examine the extent to which collaboration, strategic resource integration, and digital readiness contribute to improving university performance. Therefore, the research model proposed by the author is presented as follows:

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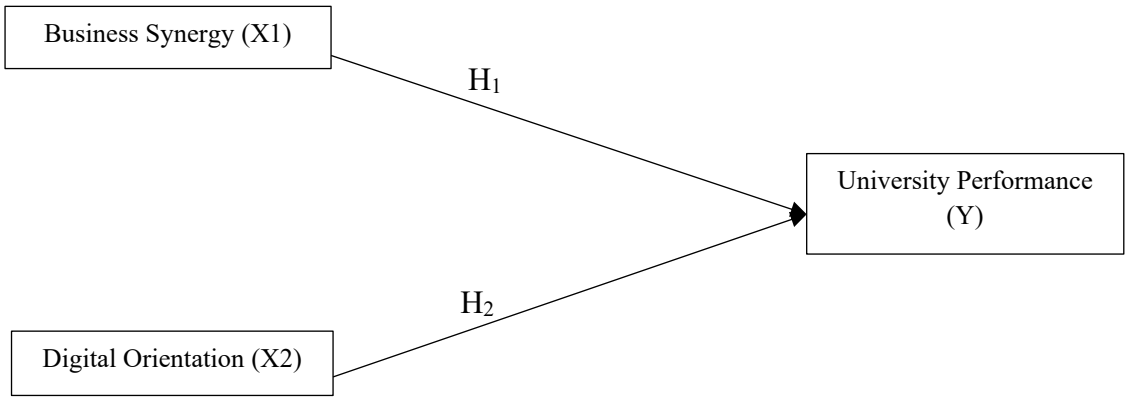

Figure 1. Research Model

Methods

This study employed a quantitative research approach with an explanatory research design to examine the influence of business synergy and digital orientation on university performance. The quantitative approach was considered appropriate because the study aimed to test the relationships among variables using numerical data obtained from respondents through a structured questionnaire. The research model consisted of two independent variables, namely Business Synergy (X1) and Digital Orientation (X2), and one dependent variable, namely University Performance (Y).

The primary data were collected from 90 respondents who were active university students from various semesters. Students were selected as respondents because they are direct users of academic and administrative services and are therefore able to provide perceptions regarding digital services, institutional collaboration, academic service quality, and university performance. The respondents were selected using purposive sampling. The criteria for respondent selection included students who were actively enrolled, had experienced university academic and administrative services, and were considered capable of evaluating the implementation of business synergy and digital orientation based on their learning and service experiences.

Data were collected using a structured questionnaire developed from indicators adapted from previous studies. Business Synergy was measured through five indicators, namely external collaboration, alignment of internal strategies, synergistic utilization of resources, joint innovation and co-creation of value, and performance measurement and feedback. Digital Orientation was measured through four indicators, namely technology orientation, customer or user orientation, competitor or benchmark orientation, and digital orientation. University Performance was measured through indicators related to research excellence, education excellence, internationalisation or global outlook, financial or efficiency performance, and institutional reputation and visibility. All questionnaire items were measured using a Likert scale to determine respondents' level of agreement with each statement.

The data were analyzed using Partial Least Squares Structural Equation Modeling with the assistance of SmartPLS version 3.29. PLS-SEM was selected because it is appropriate for predictive research models, latent variable analysis, and studies with relatively small sample

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sizes. The analysis was carried out in two main stages. The first stage was the evaluation of the measurement model, which included convergent validity and reliability tests. Convergent validity was assessed based on outer loading values and Average Variance Extracted, while reliability was assessed using Cronbach's Alpha and Composite Reliability. The second stage was the evaluation of the structural model, which included the assessment of path coefficients, t-statistics, p-values, and R-square values. The hypotheses were accepted when the t-statistic value exceeded the critical value and the p-value was less than 0.05.

Table 1. Operational Definition and Measurement Indicators

Variable	Indicator	Statement	Source
Business Synergy (X1)	1. External collaboration	1. The collaboration between the university and external parties provides tangible benefits for the development of academic programs.	(Bertoletti & Johnes, 2021), (Leydesdorff et al., 2014)
	2. Alignment of internal strategies	2. Academic, research, and community service functions at universities are mutually supportive and integrated..	
	3. Synergistic utilization of resources	3. The university efficiently utilizes shared resources (human resources, infrastructure, technology) across units.	
	4. Joint innovation and co-creation of value	4. The collaboration that occurred resulted in new products/services that are relevant to stakeholder needs	
	5. Performance measurement and feedback	5. The results of the collaboration/synergy are evaluated periodically and used as a basis for improvement	
Digital Orientation (X2)	1. Technology Orientation	1. The university has adequate digital infrastructure to support online learning.	(Yu & Moon, 2021)
	2. Customer/User Orientation	2. The university collects feedback from students regarding academic services and provides online student support services.	
	3. Competitor/Benchmark Orientation	3. The university routinely monitors higher education trends to remain competitive.	
	4. Digital Orientation	4. The university integrates digital technology into all aspects of its operations	

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University Performance (Y)	1. Research Excellence	1. The university's academic staff publish articles in international indexed journals at above-average levels	(Multan et al., 2023)
	2. Education Excellence	2. The university offers internationally recognised programmes and meets global teaching standards	
	3. Internationalisation / Global Outlook	3. The university engages in joint research publications or student exchange programmes with foreign institutions	
	4. Financial / Efficiency Performance	4. The university uses its resources efficiently, achieving favourable return on equity compared to peers	
	5. Investment attitude	5. Employers regard the university graduates positively and the institution enjoys a strong reputation in the region/nation	
	6. Institutional Reputation & Visibility		

Results and Discussion

Respondent Description

The table below displays the completed responses from 90 participants who were asked to complete the questionnaire used in this study. This represents the actual sample size that was employed in the study's data analysis.

Table 2. Respondent Description

Description	Frequency	Percentage
Gender		
Male	50	55.56%
Female	40	44.44%
Age		
18 – 22	32	35.56%
22 – 26	25	27.78%
27 – 31	27	30%
>30	6	6.67%
Semester		
1	20	22.22%
3	20	22.22%
5	20	22.22%
7	20	22.22%
>7	10	11.11%
Educational Backround		

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Diploma Degree	45	50%
Bachelor's Degree	45	50%

Validity Test (Convergent Validity)

Validity testing, which is evaluated through the loading factor values of latent variables, is employed to determine the validity of each item, a process known as convergent validity. Ideally, the loading factor value should be greater than 0.7 (> 0.7).

Table 3. Result of Outer Loadings

Variable	Indikator	*Outer Loadings*	Keterangan
Business Synergy (X_1)	BS.1	0.904	Valid
	BS.2	0.857	Valid
	BS.3	0.753	Valid
	BS.4	0.787	Valid
	BS.5	0.864	Valid
Digital Orientation (X_2)	DO.1	0.791	Valid
	DO.2	0.790	Valid
	DO.3	0.858	Valid
	DO.4	0.856	Valid
University Performance (Y)			
	UP.1	0.772	Valid
	UP.2	0.825	Valid
	UP.3	0.796	Valid
	UP.4	0.854	Valid
	UP.5	0.762	Valid

Source: Data Processed with SmartPLS 3

Based on the analysis results presented in Table 3, the outer loadings, or the values of each variable and its indicators, are all greater than 0.70, indicating that all indicators for the variables are considered valid. Subsequently, the Average Variance Extracted (AVE) test was conducted, as shown in Table 4 below.

Table 4. AVE Results

	Average Variance Extracted (AVE)	Description
Business Synergy (X1)	0.697	Valid
Digital Orientation (X3)	0.680	Valid
University Performance (Y)	0.644	Valid

Source: Data Processed with SmartPLS 3

Table 4 shows that the Average Variance Extracted (AVE) has a result above 0.5, indicating that AVE has no convergent validity issues in the tested model. Therefore, this study has good validity.

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Composite Reliability and Cronbach's Alpha Test

The next test is the reliability test using composite reliability and Cronbach's alpha. A variable can be considered reliable if each variable has a composite reliability and Cronbach's alpha value > 0.70.

Table 5. Composite Reliability and Cronbach's Alpha Results

Variable	*Cronbach's Alpha*	*Composite Reliability*	Description
Business Synergy (X1)	0.891	0.920	Reliable
Digital Orientation (X3)	0.843	0.894	Reliable
University Performance (Y)	0.861	0.900	Reliable

Source: Data Processed with SmartPLS 3

Based on the analysis results in Table 5, the composite reliability and Cronbach's Alpha values for each variable are greater than 0.70. Therefore, it can be concluded that all of these variables are reliable.

Coefficient Test

The coefficient test, which examines coefficients, is used to determine the level of significance in hypothesis testing using a two-way model. The results of the data analysis can be used to evaluate research hypotheses by considering the t-statistic and p-value. A hypothesis is accepted if the t-statistic exceeds the table t-value or if the p-value is below 0.05.

Table 6. Results of Coefficient Test using the Bootstrapping Technique

Hypothesis	*Original Sample (O)*	*Sample Mean (M)*	*Standard Deviation (STDEV)*	*T Statistics (|O/STDEV|)*	*P-Values*
X1 → Y	0.237	0.237	0.089	2.662	0.008
X2 → Y	0.021	0.034	0.112	0.187	0.852

Source: Data Processed with SmartPLS 3

Based on the figure and Table 6, the direct effect of business synergy (X1) on university performance (Y) obtained a t-statistic value of 2.662, which is greater than the t-statistic value (1.65), and a p-value of 0.008, which is less than 0.05. Therefore, it is concluded that business synergy has a significant direct effect on university performance, so H1 is accepted. The effect of digital orientation (X2) on university performance (Y) obtained a t-statistic value of 0.187 < 0.65 and a p-value of 0.852 > 0.05. Therefore, it can be concluded that digital orientation does not have a significant effect on university performance, so H2 is rejected.

R Square (R^2) Test

Test the coefficient of determination (R^2). R-squared is used to test the extent to which the independent variable influences the dependent variable. The R2 value indicates the level of determination of the exogenous variable compared to its endogenous variable. A higher R^2 value indicates a higher level of determination.

Table 7. R-*Square* Result

	R-Square(R^2)	*R-Square Adjusted*
University Performance (Y)	0.909	0.903

Source: Data Processed with SmartPLS 3

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The R^2 value for the dependent variable that University Performance (Y) is 0.909. This means that the university performance (Y) is influenced business synergy (X1), digital orientation (X2) by 90.9%. The remaining 9.1% is influenced by other factors outside this study. This indicates a very strong influence and a significant impact on university performance.

The Effect of Business Synergy on University Performance

Based on the data analysis results, the influence of business synergy on university performance yielded a probability value of 0.008 < 0.05, thus it can be concluded that busines synergy has a significant impact on university performance. According to Tereshchenko et al. (2024), found that business synergy in the context of higher education can be understood as a form of strategic collaboration between universities and external stakeholders, such as industry, government, and society, aimed at leveraging shared resources to achieve common objectives (Tereshchenko et al., 2024). Supporting this view, a study in Indonesia by Lianto et al. (2025) found that collaboration between universities and industry enhances innovation performance, which serves as an important indicator of university performance (Lianto et al., 2025). Overall, the relationship between business synergy and university performance is mutually reinforcing: universities gain access to industry resources such as funding and technology, while industry benefits from research outputs and applicable innovations. Therefore, business synergy constitutes a key factor in improving the competitiveness and sustainability of university performance in the knowledge-based economy era.

The Effect of Digital Orientation on University Performance

Based on the data analysis results, the influence of digital orientation on university performance yielded a probability value of 0.852 > 0.05, thus it can be concluded that busines synergy does not significantly impact on university performance. The study by Renta & Ali (2025) indicates that digital orientation alone does not have a direct impact. In other words, a strong digital orientation without the support of technological capabilities and IT–business synergy is insufficient to significantly enhance institutional performance. These findings emphasize that digital orientation must be accompanied by concrete strategies in infrastructure strengthening, human resource development, and collaboration between business and technology units for digital transformation to have a tangible effect on university performance (Prans et al., 2025). This supports the argument that the statement digital Orientation does not affect university performance underscores that digital orientation is merely an initial stage or strategic prerequisite, rather than a direct guarantee of improved university performance. Universities with a digital orientation but lacking technological adaptability and effective inter-unit coordination may experience a gap between vision and implementation. Conversely, when digital orientation is supported by cross-functional synergy and strengthened technological capabilities, its positive impact on institutional performance becomes more evident and sustainable (Prans et al., 2025).

Conclusion

Based on the analysis, it can be concluded that business synergy has a significant influence on university performance, while digital orientation has no significant impact. This finding suggests that a university's ability to build business synergy, as well as develop and implement digital capabilities, plays a crucial role in improving institutional performance in higher education. Overall, these findings emphasize that the success of university performance in the digital era largely depends on the institution's ability to integrate its concrete digital capabilities, rather than solely relying on digital orientation. Limitations of this study include the use of data from a limited number of universities, which may limit the generalizability of the findings to all higher education institutions. Furthermore, this study used a cross-sectional

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quantitative approach, which cannot capture changes in variables over time. Finally, the measurement of variables is based on respondents' perceptions, which may introduce subjective bias.

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