

The Moderating Effect of Organizational Training Support on the Relationship Between Technology Adoption and Business Sustainability Across Enterprises

Vinzent Anjeliuse S. Bañares, Daniela M. Banag, and Ellenita R. Red*

Enrique T. Yuchengco, College of Business, Mapúa Malayan Colleges Laguna, Cabuyao City, 4025 Philippines

*Corresponding author, E-mail: erred@mcl.edu.ph

Abstract

As industries continue to shift toward digitalization, enterprises are challenged to embrace technological advancements while ensuring long-term sustainability in an increasingly competitive business landscape. However, technology adoption alone does not always guarantee sustainable outcomes, especially when internal organizational support and employee readiness are lacking. This study examined the moderating effect of organizational training support on the relationship between technology adoption and business sustainability among hospitality enterprises in Laguna. A quantitative descriptive-correlational design was employed, and data were collected from 163 enterprise respondents using a structured online survey questionnaire through non-probability convenience sampling. Pearson correlation and hierarchical multiple regression were applied to analyze the relationships among the variables. Results revealed a significant positive relationship between technology adoption and business sustainability. Regression results showed that TA significantly predicted BS ($R^2 = 0.409$, $p < 0.001$), while the inclusion of OTS increased the explained variance ($\Delta R^2 = 0.070$). The interaction term (TA \times OTS) was also significant ($B = -0.101$, $\Delta R^2 = 0.015$, $p = 0.032$), indicating a moderating effect. The negative interaction suggests that the incremental impact of technology adoption on sustainability becomes slightly smaller when training support is already high. These findings highlight the importance of balancing technology investment with continuous employee development to achieve long-term business sustainability.

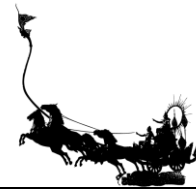
Keywords: *Technology Adoption, Organizational Training Support, Business Sustainability, Digital Transformation, TOE Framework, Moderation Analysis, Hierarchical Regression, Hospitality Industry*

1. Introduction

Over the past years, technological advancement has continued to reshape the way enterprises operate, communicate, and compete in an increasingly digital environment. In many industries, organizations are now adopting digital tools and platforms to improve operational efficiency, accuracy, and customer engagement. This shift has become more evident in recent years as digital transformation is no longer treated as optional, but rather as a strategic requirement for enterprises that aim to remain competitive. As businesses continue to pursue growth through technology, they are also expected to maintain sustainability by ensuring that their operations contribute not only to profitability, but also to long-term environmental and social responsibility. In today's setting, sustainability has become a major concern because enterprises are increasingly evaluated not only through financial performance, but also through their ability to operate responsibly and remain resilient in the long run.

According to Hamad and Ahmed (2024), digital transformation has been recognized as an important driver of organizational performance because it enhances operational efficiency, strengthens innovation capabilities, and improves strategic decision making through data-driven processes. However, despite the advantages brought by technology adoption, many organizations still experience difficulties in ensuring that technology investments lead to long-term sustainability outcomes. Omrani et al. (2022) emphasized that technology adoption success depends not only on technological availability, but also on the internal readiness and capability of the organization implementing it.

Although several studies have highlighted the positive impact of technology adoption, not all enterprises achieve the same level of success when implementing digital systems. Some organizations are able to enhance productivity and sustainability performance, while others struggle due to internal barriers such as limited knowledge and poor implementation strategies. Seppänen et al. (2025) emphasized that digital transformation is influenced not only by technological adoption but also by internal organizational capabilities and readiness, which determine how effectively digital tools are integrated into management functions. This



situation supports the Technology–Organization–Environment (TOE) framework, which explains that organizational factors are major determinants of whether a technology innovation can be successfully implemented (N'Dri & Su, 2024). Furthermore, digital transformation requires more than financial investment, since enterprises must also develop internal capabilities to ensure that technology becomes functional and useful in real operations. In this process, organizational training support plays an important role because it equips employees with the skills and confidence needed to adjust to new digital systems. According to Riesner et al. (2025), enterprises that provide employee training and strong internal support are more likely to enhance employee competencies, which contributes to improved organizational performance and the effective implementation of workplace systems. However, despite the importance of training support, limited studies have focused on its moderating role in strengthening the relationship between technology adoption and business sustainability across enterprises.

Previous studies have examined business sustainability as an outcome influenced by various technological and organizational factors, yet these studies focus on mechanisms other than employee training support. For instance, Chen and Wang (2024) examined how digital transformation impacts environmental and social and governance performance in small and medium enterprises. The study found that innovation capability and servitization function as mediating mechanisms which enable digital transformation to produce better sustainability results. It suggests that organizations achieve sustainable performance through digital technologies which improve their innovation capabilities and service delivery systems. Similarly, Wang and Zhang (2024) discovered that environmental dynamism affects how digital transformation impacts sustainable innovation performance because organizations in fast-evolving sectors achieve greater sustainability results from their digital investments. However, while prior studies highlight the importance of innovation mechanisms and environmental conditions in explaining business sustainability, limited research has examined the role of organizational training support as a moderating factor that strengthens employees' ability to adopt digital technologies and translate them into sustainable business performance. Therefore, this study addresses this gap by investigating organizational training support as a moderator in the relationship between technology adoption and business sustainability.

This study is grounded in the idea that technology adoption alone may not be sufficient to improve sustainability outcomes unless enterprises are able to provide the necessary internal support for employees. Technology adoption in this research refers to the integration and actual utilization of digital tools and systems that enhance business operations, while business sustainability refers to an enterprise's ability to maintain long-term competitiveness, stability, and growth. Organizational training support, on the other hand, refers to the commitment of enterprises to provide structured training programs, skill development, and guidance that help employees properly use new technologies. This factor is considered important because employees are the primary users of digital systems, and their competence and readiness influence the success of technology implementation. Guandalini (2022) emphasized that digital transformation contributes to sustainability when organizations are able to align technological initiatives with organizational learning and capability development. Similarly, Al-Emran and Griffy-Brown (2023) explained that technology adoption can support sustainability goals only when enterprises address internal barriers and ensure effective utilization of the system. Therefore, this study intends to contribute to existing literature by clarifying whether organizational training support strengthens the relationship between technology adoption and business sustainability across enterprises.

To provide a clearer direction for this research, the study presents a conceptual framework that illustrates the relationship between technology adoption and business sustainability across enterprises. In this framework, organizational training support is positioned as a moderating variable that may strengthen the effect of technology adoption on sustainability outcomes. This framework is anchored in the Technology–Organization–Environment (TOE) framework, which is widely used in Information Systems research to explain the likelihood of firms adopting technological innovation through technological, organizational, and environmental contexts (Tornatzky & Fleischer, 1990). Moreover, recent studies have extended the TOE framework to examine digital transformation and organizational outcomes, highlighting the relevance of technological and organizational factors in improving firm performance and long-term sustainability (Badghish & Soomro, 2024; Nguyen et al., 2022).

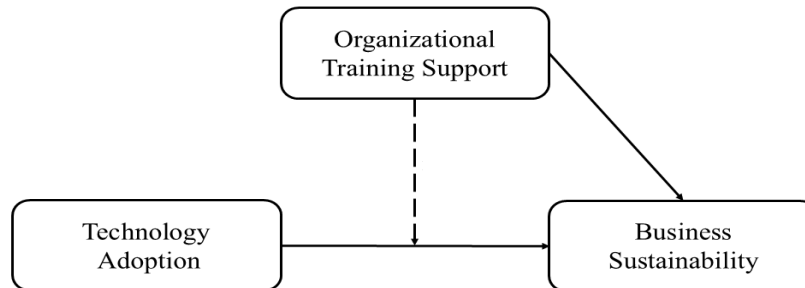
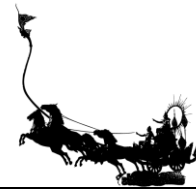


Figure 1 Conceptual Framework of the Study

The study focuses on the intricate dynamics between Technology Adoption (TA), Organizational Training Support (OTS), and Business Sustainability (BS) within enterprises.

Technology Adoption (TA) is conceptually defined as the organizational-level process involving the successful integration and utilization of new information and communication technologies (ICT), systems, and digital tools into the enterprise's core operations and strategic functions. This concept is not merely about purchasing new hardware or software but fundamentally concerns the degree to which an organization embeds these technologies from simple cloud services to complex IT infrastructures to streamline processes, enhance efficiency, and create value.

Organizational Training Support (OTS) represents the formal organizational commitment, resources, and structures dedicated to equipping employees with the necessary competencies to effectively use and leverage the adopted technologies. Conceptually, OTS encompasses the provision of relevant training sessions, the development of digital skills (including basic computer literacy and advanced software proficiency), and the availability of responsive guidance and technical assistance. This variable is crucial as it signifies the internal readiness and human capital investment required to transform technology from a mere cost into a strategic asset.

Business Sustainability (BS) serves as the central dependent outcome variable, referring to the enterprise's long-term capacity to thrive, maintain competitive advantage, and ensure continuous viability, growth, and performance. While rooted in the economic dimension of success, this conceptual definition also implies a firm's adaptive ability to manage change and leverage its technological and human resources to secure its future position in the market. The achievement of BS is thus viewed as the ultimate organizational goal resulting from the successful interplay of technology and support mechanisms.

2. Objectives

This study is intended to accomplish the following objectives:

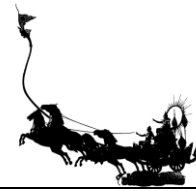
- 1) To determine the level of Technology Adoption, Business Sustainability, and Organizational Training Support among enterprises.
- 2) To examine the significant relationship between Technology Adoption and Business Sustainability across enterprises.
- 3) To examine the significant relationship between Organizational Training Support and Business Sustainability across enterprises.
- 4) To determine whether Organizational Training Support significantly moderates the relationship between Technology Adoption and Business Sustainability across enterprises.

Based on the objectives and conceptual framework of the study, the following hypotheses are proposed:

H1: *Technology Adoption significantly predicts Business Sustainability.*

H2: *Organizational Training Support significantly predicts Business Sustainability.*

H3: *Organizational Training Support significantly moderates the relationship between Technology Adoption and Business Sustainability.*



3. Materials and Methods

This study adopted a quantitative research design using a descriptive–correlational approach to examine the moderating effect of Organizational Training Support on the relationship between Technology Adoption and Business Sustainability. The design was appropriate as it allowed the researchers to determine the level of the study variables and examine the nature of their relationships within enterprise settings.

Data were collected from enterprises operating in the hospitality industry in Laguna, including hotels, resorts, restaurants, cafés, and related businesses. The respondents consisted of business owners, managers, supervisors, and staff who were directly involved in enterprise operations and the use of digital tools. A total of 163 valid responses were gathered through an online survey administered via Google Forms using convenience sampling. This non-probability sampling technique enabled the researchers to select participants based on accessibility and willingness to participate, allowing efficient data collection from respondents actively engaged in technology adoption within hospitality enterprises.

The instrument consisted of four sections covering the demographic profile, technology adoption (TA), organizational training support (OTS), and business sustainability (BS). Technology Adoption was measured using eight items adapted from Vial (2019), Martín-Peña et al. (2018), and Ghobakhloo and Ching (2019), which assessed the extent to which enterprises integrate digital tools and systems into their operations. Organizational Training Support was measured using five items adapted from Aguinis and Kraiger (2009), Chiaburu and Tekleab (2005), and Naujokaitienė et al. (2015), focusing on the degree to which enterprises provide resources, opportunities, and encouragement for employees to develop digital skills. Business Sustainability was assessed using eight items adapted from Teece (2018), Agyemang and Ansong (2016), and Martín-Peña et al. (2018), which examined the enterprise's ability to survive, grow, and remain competitive over time. All variables were measured using a five-point Likert scale ranging from Strongly Disagree to Strongly Agree.

The collected data were analyzed using IBM SPSS Statistics. Reliability analysis using Cronbach's alpha was conducted to assess the internal consistency of the measurement scales. Descriptive statistics, including the mean and standard deviation, were used to describe the levels of the study variables. Exploratory factor analysis (EFA) was performed to examine construct validity and evaluate factor loadings of the measurement items. Pearson's correlation analysis was employed to determine the relationships among technology adoption, organizational training support, and business sustainability.

To test the proposed relationships and the moderating effect of organizational training support, hierarchical multiple regression (HMR) analysis was applied. Prior to regression analysis, diagnostic tests were conducted to examine key regression assumptions, including multicollinearity using tolerance and the variance inflation factor (VIF) and independence of residuals using the Durbin–Watson statistic. Statistical significance was assessed at the 0.05 level.

4. Results and Discussion

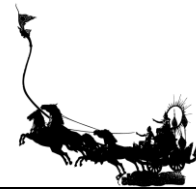
This section presents the findings of the study in line with the research objectives. It first examines the reliability and level of Technology Adoption, Organizational Training Support, and Business Sustainability, followed by an analysis of their relationships and the moderating effect of Organizational Training Support.

Table 1 Cronbach's Alpha of the Variables

Variable	CA
Technology Adoption	0.84
Business Sustainability	0.91
Organizational Training Support	0.92

Note: Interpretation of Cronbach's Alpha: Excellent Reliability (≥ 0.90); Good Reliability (0.80 – 0.89); Acceptable Reliability (0.70 – 0.79); Needs Improvement (< 0.70)

Technology Adoption yielded a reliability value of 0.84, indicating good internal consistency after the refinement of the measurement scale during construct validation. This suggests that the remaining items under this construct measure technology adoption in a stable and dependable manner. Meanwhile, Business



Sustainability recorded a Cronbach's alpha coefficient of 0.91, categorized as excellent. This implies that the items included in this section consistently represent the concept of sustainability across different enterprises. Furthermore, Organizational Training Support obtained the highest value at 0.92, also classified as excellent reliability, indicating that the indicators used are highly cohesive and accurately capture the support mechanisms related to organizational training. Overall, these results confirm that the measurement instrument demonstrates strong reliability, indicating that the survey items are reliable, coherent, and suitable for analyzing the study.

Table 2 Descriptive Statistics of the Variables

Variable	N	Scale Range	Mean	Median	Mode	SD
Technology Adoption	163	1-5	4.19	4.25	4.38	0.64
Business Sustainability	163	1-5	4.33	4.38	5.00	0.62
Organizational Training Support	163	1-5	3.91	4.00	5.00	0.95

Interpretation of Mean: Very High (4.20 – 5.00); High (3.40 – 4.19); Moderate (2.60 – 3.39); Low (1.80 – 2.59); Very Low (1.00 – 1.79)

The results for Technology Adoption ($M = 4.19$, $SD = 0.64$) indicate a high level of digital integration among enterprises. Respondents reported active use of digital payments (e.g., GCash, QR codes), e-commerce platforms (such as Shopee, Lazada, and Facebook Marketplace), accounting systems, and communication tools, indicating that digital adoption extends beyond sales to financial management and internal operations. These practices collectively enhance accuracy, collaboration, and customer accessibility.

Business Sustainability received the highest rating ($M = 4.33$, $SD = 0.62$), interpreted as very high, reflecting strong perceptions of long-term stability and competitiveness. Respondents noted that digital tools improve financial viability, attract and retain customers, streamline operations, and reduce errors. High ratings on innovation-related items also indicate that enterprises continuously adapt to new technologies to secure long-term survival. Overall, digital adoption appears closely linked to improved performance, resilience, and growth.

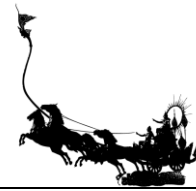
Organizational Training Support was rated high ($M = 3.91$, $SD = 0.95$) but showed variability across enterprises. Some organizations provide structured training, resource materials, and hands-on coaching, while others offer limited opportunities for practice or attendance at workshops. Despite differences, the overall rating reflects a positive effort by many MSMEs to build digital capability and help employees adapt to new technologies.

Table 3 Factor Loadings for Technology Adoption

Item	Technology Adoption
TA1	0.716
TA2	0.565
TA4	0.581
TA5	0.626
TA6	0.647
TA7	0.720
TA8	0.778

Note: Factor loadings ≥ 0.50 indicate acceptable item reliability.

This shows the factor loadings for Technology Adoption. The retained items demonstrated acceptable loadings ranging from 0.565 to 0.778, which exceed the recommended threshold of 0.50, indicating adequate item reliability. TA8 (0.778) and TA7 (0.720) showed the strongest loadings, suggesting that these items strongly represent the Technology Adoption construct. However, TA3 was removed because its loading was below 0.50, indicating that it did not sufficiently measure the construct. The remaining items demonstrated satisfactory factor loadings, confirming that the indicators appropriately represent the



Technology Adoption construct and supporting the reliability of the measurement model.

Table 4 Factor Loadings for Organizational Training Support

Item	Organizational Training Support
OTS1	0.842
OTS2	0.839
OTS3	0.858
OTS4	0.836
OTS5	0.822

Note: Factor loadings ≥ 0.50 indicate acceptable item reliability.

This table represents the factor loadings for Organizational Training Support. All items showed high loadings ranging from 0.822 to 0.858, which are well above the 0.50 threshold. This indicates that the indicators strongly and consistently represent the Organizational Training Support construct.

Table 5 Factor Loadings for Business Sustainability

Item	Business Sustainability
BS1	0.588
BS2	0.727
BS3	0.761
BS4	0.769
BS5	0.769
BS6	0.673
BS7	0.772
BS8	0.732

Note: Factor loadings ≥ 0.50 indicate acceptable item reliability.

Table 5 shows the factor loadings for Business Sustainability. All eight indicators met the acceptable level, with loadings ranging from 0.588 to 0.772. These results confirm that the items adequately represent the Business Sustainability construct.

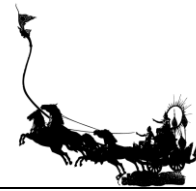
The results from this factor analysis indicate that the measurement items adequately represent their respective constructs. The Kaiser–Meyer–Olkin (KMO) value of 0.900 indicates excellent sampling adequacy, while Bartlett's Test of Sphericity was significant ($\chi^2 = 2113.868$, $p < .001$), confirming that the data were suitable for factor analysis.

Table 6 Correlation Analysis

	Pearson Correlation	P-Value	Hypothesis
TA > OTS	0.37	<0.001	Accept H_a
BS > OTS	0.49	<0.001	Accept H_a
TA > BS	0.62	<0.001	Accept H_a

Note: TA - Technology Adoption; BS - Business Sustainability; OTS - Organizational Training Support; Correlation is significant at 0.001 ($p < 0.001$); r correlation of 0.30 or greater indicates moderate to strong relationship.

The results from this table indicate significant positive relationships among the key variables. Technology Adoption (TA) and Organizational Training Support (OTS) showed a moderate positive correlation ($r = 0.37$, $p < 0.001$), suggesting that enterprises with stronger organizational support, such as resources, leadership encouragement, and technical assistance, tend to adopt technology more effectively. Similarly, Business Sustainability (BS) and OTS demonstrated a moderate positive correlation ($r = 0.49$, $p < 0.001$), highlighting that organizational training support contributes meaningfully to long-term business resilience, operational efficiency, and competitiveness. The strongest relationship was observed between TA and BS, with a strong positive correlation ($r = 0.62$, $p < 0.001$), indicating that higher levels of technology



adoption are closely associated with greater business sustainability outcomes. Overall, these correlations are highly statistically significant, reinforcing the importance of both technology adoption and organizational support in promoting sustainable business performance.

Table 7 Regression Assumption Tests

Predictor	Tolerance	VIF
Technology Adoption	0.855	1.170
Organizational Training Support	0.855	1.170

Durbin-Watson = 1.858

The results from this table indicate that the assumptions required for regression analysis were satisfied. Multicollinearity was evaluated using tolerance and Variance Inflation Factor (VIF) values. The results show that tolerance values were 0.855, exceeding the recommended threshold of 0.10, while VIF values were 1.170, which are well below the critical value of 5, indicating that multicollinearity is not a concern. Furthermore, the Durbin–Watson statistic was 1.858, which falls within the acceptable range of 1.5 to 2.5, confirming the independence of residuals. These results indicate that the regression assumptions were satisfied.

Table 8 Hierarchical Regression Predicting Business Sustainability

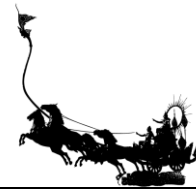
Predictor	B	SE	β	t	p	VIF
Technology Adoption (TA)	0.462	0.061	0.488	7.601	<0.001	1.292
Organizational Training Support (OTS)	0.182	0.040	0.280	4.580	<0.001	1.172
TA × OTS (Interaction)	-0.101	0.047	-0.130	-2.164	0.032	1.136

Model Statistics	R ²	Δ R ²	F Change	p
Model 1	0.409	-	111.279	<0.001
Model 2	0.478	0.070	21.355	<0.001
Model 3	0.493	0.015	4.685	0.032

Note: TA - Technology Adoption; BS - Business Sustainability; OTS - Organizational Training Support; Coefficients reported in the table correspond to the final hierarchical model (Model 3); TA and OTS were centered prior to computing the interaction term (TA × OTS). Δ R² indicates change in explained variance across models.

The hierarchical multiple regression results further elaborate on these relationships and examine the moderating role of Organizational Training Support (OTS). In Model 1, Technology Adoption (TA) significantly predicted Business Sustainability (BS), explaining 40.9% of the variance ($R^2 = 0.409$, $p < .001$), indicating that enterprises with higher levels of technology adoption tend to achieve stronger sustainability outcomes. In Model 2, the inclusion of Organizational Training Support improved the model, increasing the explained variance to 47.8% ($\Delta R^2 = 0.070$, $p < .001$), suggesting that organizational training support contributes additional explanatory power to business sustainability. Model 3 introduced the interaction term between TA and OTS to test the moderating effect. The interaction term was statistically significant ($\beta = -0.130$, $p = 0.032$), increasing the explained variance slightly to 49.3% ($\Delta R^2 = 0.015$). This result indicates that while both technology adoption and organizational training support positively contribute to business sustainability, the strength of the relationship between technology adoption and sustainability slightly decreases at higher levels of organizational training support. Overall, these findings highlight that both technological advancement and organizational support mechanisms play important roles in enhancing business sustainability outcomes.

Figure 2 illustrates the moderating effect of Organizational Training Support on the relationship between Technology Adoption and Business Sustainability. The plot shows the predicted levels of business sustainability across different levels of technology adoption under conditions of low and high organizational training support. As technology adoption increases, predicted business sustainability also increases for both



levels of organizational training support, indicating a positive relationship between technology adoption and sustainability outcomes. However, the slope of the relationship differs slightly between the two lines, with the line representing high organizational training support appearing slightly flatter than that of low organizational training support. This pattern suggests that the positive effect of technology adoption on business sustainability becomes marginally weaker at higher levels of organizational training support, supporting the significant interaction effect identified in the hierarchical regression analysis.

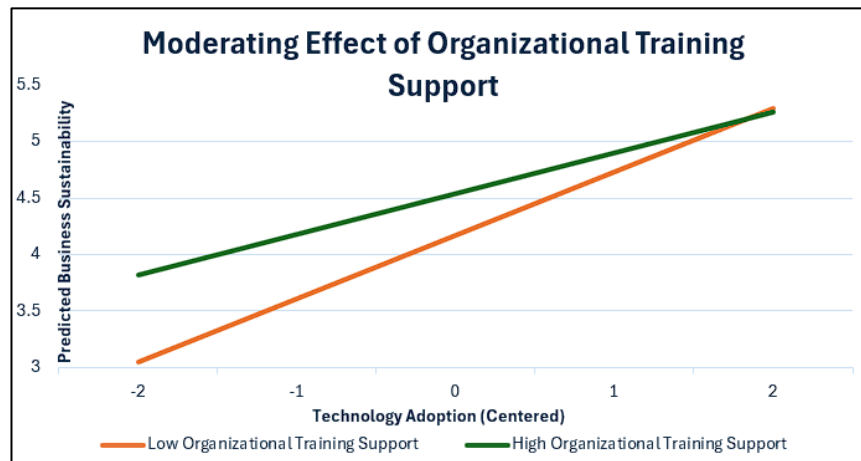
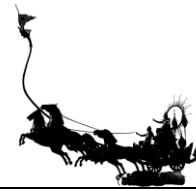


Figure 2 Moderation Plot of Organizational Training Support

5. Conclusion

Based on the findings of the study, it can be concluded that Technology Adoption, Organizational Training Support, and Business Sustainability are strongly associated across enterprises. The results showed that enterprises demonstrate a high level of Technology Adoption, particularly in the use of digital payment systems commonly used in the Philippines, such as GCash and QR codes, as well as online selling platforms like Shopee and Lazada, accounting systems, and collaboration tools. This indicates that many enterprises are actively integrating digital technologies into their daily operations to improve efficiency and overall business performance. Business Sustainability also obtained the highest mean rating, which reflects that enterprises perceive themselves as stable, competitive, and capable of maintaining long-term growth. Organizational Training Support likewise received a positive rating, suggesting that many enterprises are making efforts to provide training, seminars, and workshops that enhance employee readiness and capability in adapting to new technologies. Overall, these findings highlight that digital integration and internal organizational support are important elements in sustaining business competitiveness in today's digital environment.

Moreover, the statistical results revealed that Technology Adoption significantly predicts Business Sustainability, which implies that enterprises that adopt and utilize digital systems are more likely to improve operational performance and achieve long-term sustainability outcomes. The study also confirmed that Organizational Training Support significantly influences Business Sustainability, indicating that employee training initiatives contribute to enterprise stability and performance improvement. In addition, the moderating analysis showed that Organizational Training Support significantly moderates the relationship between Technology Adoption and Business Sustainability. Although the moderating effect revealed a negative interaction coefficient, this suggests that when training support is already high, the incremental contribution of technology adoption becomes slightly weaker. However, this does not lessen the importance of training support but rather emphasizes that enterprises should maintain a balanced approach between technology investment and employee development. This implies that sustainable business performance is best achieved when enterprises invest not only in technology but also in strengthening workforce capability and readiness.



6. Contributions of the study

This study contributes significantly to the understanding of digital transformation and sustainable business practices. From an academic standpoint, it demonstrates that organizations which provide training support to their employees are more likely to achieve greater success in technology adoption because technology alone cannot deliver sustainable results without proper employee skill development. Theoretically, it applies the Technology-Organization-Environment (TOE) framework to demonstrate how organizational elements, especially training, shape both the adoption of technology and its influence on long-term sustainability, affirming the framework's importance for hospitality SMEs. In terms of context, by examining hospitality businesses in Laguna, Philippines, the study reveals how local organizational approaches and industry dynamics affect the value of digital investments, providing managers and policymakers with practical direction on using technology to achieve sustainable operations.

From a practical perspective, this study emphasizes that organizations should pair digital transformation initiatives with training programs that support sustainable results. For managers, there is a need to create digital transformation programs which work together with employee development programs through the assessment of current staff skills and the delivery of specific training and ongoing support for employees who need to learn new technological skills. The findings further highlight that the benefits of technology are maximized only when employees are competent and confident in its use. For policymakers and industry associations, the study shows that digital literacy programs, funding for employee development and advanced training partnerships can help create business support programs that benefit companies. By working together, organizations, managers, and policymakers can modernize operations, achieve sustainable growth, and gain a competitive edge in the digital marketplace.

7. Limitations of the study

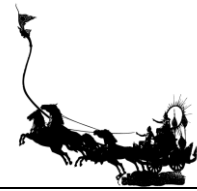
Despite its contributions, this study has several limitations. First, the use of self-reported data may introduce response bias, as respondents may overstate their organizations' levels of Technology Adoption, Organizational Training Support, and Business Sustainability practices. Second, the descriptive-correlational design collected data at a single point in time, which limits the ability to establish causal relationships among the variables. Future studies may employ longitudinal or experimental designs to better examine causality. Third, the study focused only on hospitality enterprises in Laguna, Philippines, which may limit the generalizability of the findings to other industries or regions. Finally, the study examined only two predictors of Business Sustainability—Technology Adoption and Organizational Training Support—while other factors such as organizational culture, leadership support, digital infrastructure, and innovation capability may also influence sustainability and should be explored in future research.

8. Acknowledgements

The researchers would like to extend their heartfelt gratitude to the participating enterprises and respondents for their cooperation and willingness to share valuable information. Finally, appreciation is given to Rangsit University's International Conference 2026 and all individuals who contributed directly or indirectly to the successful completion of this research.

9. References

- Aguinis, H., & Kraiger, K. (2009). Benefits of training and development for individuals and teams, organizations, and society. *Annual Review of Psychology*, *60*(1), 451–474. <https://doi.org/10.1146/annurev.psych.60.110707.163505>
- Agyemang, O. S., & Ansong, A. (2016). Corporate social responsibility and firm performance: Evidence from Ghana. *Social Responsibility Journal*, *12*(4), 656–670. <https://ir.ucc.edu.gh/xmlui/bitstream/handle/123456789/9459/Corporate%20social%20responsibility%20and%20firm%20performance%20of%20ghanaian%20SMEs.pdf>
- Al-Emran, M., & Griffy-Brown, C. (2023). The role of technology adoption in sustainable development: Overview, opportunities, challenges, and future research agendas. *Technology in Society*, *73*, Article 102224. <https://doi.org/10.1016/j.techsoc.2023.102240>
- Badghish, S., & Soomro, Y. A. (2024). Artificial intelligence adoption by SMEs to achieve sustainable



- business performance: Application of Technology– Organization– Environment framework. *Sustainability*, 16(5), 1864. <https://doi.org/10.3390/su16051864>
- Chen, D., & Wang, S. (2024). Digital transformation, innovation capabilities, and servitization as drivers of ESG performance in manufacturing SMEs. *Scientific Reports*, 14. <https://www.nature.com/articles/s41598-024-76416-8>
- Chiaburu, D. S., & Tekleab, A. G. (2005). Individual and contextual influences on multiple dimensions of training effectiveness. *Journal of European Industrial Training*, 29(8) , 604– 626. <https://doi.org/10.1108/03090590510627085>
- Ghobakhloo, M., & Ching, N. T. (2019). Adoption of digital technologies in small firms: A systematic review. *Information Systems Frontiers*, 21(4) , 903– 925. <https://www.sciencedirect.com/science/article/abs/pii/S2452414X19300020?via%3Dihub>
- Guandalini, I. (2022). Sustainability through digital transformation: A systematic literature review for research guidance. *Journal of Business Research*, 148, 456– 471. <https://doi.org/10.1016/j.jbusres.2022.05.003>
- Hamad, M. K., & Ahmed, A. A. (2024). The impact of digital transformation on organizational performance: A conceptual framework examining the mediating role of data- driven decision- making. *International Journal of Business Society*, 8(10). <https://doi.org/10.30566/ijo-bs/2024.10.139>
- Martín- Peña, M., Sánchez- López, J., & Díaz- Garrido, E. (2019). Servitization and digitalization in manufacturing: the influence on firm performance. *Journal of Business and Industrial Marketing*, 35(3), 564–574. <https://doi.org/10.1108/jbim-12-2018-0400>
- N’Dri, A. B., & Su, Z. (2024). *Successful configurations of technology–organization–environment factors in digital transformation: Evidence from exporting small and medium- sized enterprises. Information & Management*. Advance online publication. <https://doi.org/10.1016/j.im.2024.104030>
- Naujokaitienė, J., Teresevičienė, M., & Žydzūnaitė, V. (2015). Organizational support for employee engagement in technology-enhanced learning. *SAGE Open*, 5(4), Article 2158244015607585. <https://doi.org/10.1177/2158244015607585>
- Nguyen, T. H., Le, X. C., & Vu, T. H. L. (2022). An extended Technology–Organization–Environment (TOE) framework for online retailing utilization in digital transformation: Empirical evidence from Vietnam. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(4) , 200. <https://doi.org/10.3390/joitmc8040200>
- Omri, N., Rejeb, N., Maalaoui, A., Dabić, M., & Kraus, S. (2022). Drivers of digital transformation in SMEs. *IEEE Transactions on Engineering Management*, 71, 1– 14. <https://doi.org/10.1109/TEM.2022.3215727>
- Riesner, S., Altnau, C., Berner, M. R., Skraba, A., Ajiri, D., & Kopac, L. (2025). Employee training as a support for the professional development of the company. *Journal of Lifestyle and SDGs Review*, 5(3), Article e05401. <https://doi.org/10.47172/2965-730X.SDGsReview.v5.n03.pe05401>
- Seppänen, S., Ukko, J., & Saunila, M. (2025). Understanding determinants of digital transformation and digitizing management functions in incumbent SMEs. *Digital Business*, 5(1), Article 100106. <https://doi.org/10.1016/j.digbus.2025.100106>
- Teece, D. J. (2018). Business models and dynamic capabilities. *Long Range Planning*, 51(1), 40–49. <https://doi.org/10.1016/j.lrp.2017.06.007>
- Tornatzky, L. G., & Fleischer, M. (1990). The processes of technological innovation. Lexington Books.
- Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *The Journal of Strategic Information Systems*, 28(2), 118–144. <https://doi.org/10.1016/j.jsis.2019.01.003>
- Wang, Y., & Zhang, X. (2024). Enhancing SMEs’ sustainable innovation and performance through digital transformation: Insights from strategic technology, organizational dynamics, and environmental adaptation. *Socio- Economic Planning Sciences*, 98, Article 102124. <https://www.sciencedirect.com/science/article/abs/pii/S0038012124003240>