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THE ACCEPTANCE OF DIGITAL TRANSFORMATION IN ONLINE DISTANCE LEARNING (ODL) INSTITUTIONS IN MALAYSIA

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Abstract

This study aims to explore employee acceptance of digital transformation in online distance-learning higher education institutions. The research investigates the influence of latent variables, including effort expectancy, performance expectancy, self-efficacy, and intention, on the acceptance of digital transformation. The study expands on existing theoretical frameworks and provides empirical evidence of the significance of these variables in the context of online distance learning. Primary data were collected from employees in online distance learning higher education institutions using a structured questionnaire. The relationships between the latent variables and acceptance were examined through statistical analysis, including regression analysis and hypothesis testing based on 387 respondents. This study employs the structural equation modelling (SEM) technique for data analysis. The findings revealed that effort expectancy, performance expectancy, self-efficacy, and intention significantly influenced employee acceptance of digital transformation. All the direct and indirect relationship hypotheses are supported. Based on the results, several practical implications and strategies for online distance learning institutions are identified. Institutions should prioritize user-friendly technologies and platforms to improve effort expectancy. Effective communication of the benefits of digital transformation can enhance performance expectancy. Fostering self-efficacy among employees can be achieved through continuous professional development opportunities and a supportive culture. Proactive measures, such as involving employees in decision-making processes and providing incentives, can enhance employees' intention toward digital transformation. Theoretical implications of the study contribute to the existing knowledge on acceptance theories, highlighting the multidimensionality and interplay of various factors in the context of online distance learning. Future research could explore additional variables, conduct longitudinal studies to understand digital transformation's long-term effects and examine cultural and contextual factors that may moderate acceptance.

Keywords: Effort Expectancy, Performance Expectancy, Self-Efficacy, Intention, Acceptance, Online Distance Learning

1 INTRODUCTION

Online distance learning (ODL) has emerged as a prominent mode of education, especially in the context of higher education institutions (Grosseck et al., 2020). With advancements in technology and the increasing demand for flexible learning opportunities, many institutions have adopted digital transformation initiatives to enhance the learning experience and improve educational outcomes (Grosseck et al., 2020). However, the successful implementation of digital transformation heavily relies on the acceptance and adoption of these initiatives by

employees within higher education institutions (Giang et al., 2021). In the Malaysian context, ODL higher education institutions have witnessed rapid growth in recent years. These institutions are actively embracing digital transformation to cater to the diverse needs of students and to overcome the challenges posed by traditional classroom-based education (Lazim et al., 2021). However, the acceptance and adoption of digital transformation by employees in these institutions pose a significant challenge. Factors such as unfamiliarity with digital tools, resistance to change, and a lack of necessary skills and competencies can hinder the successful implementation of digital initiatives. Therefore, it is crucial to understand the factors that influence employee acceptance of digital transformation in ODL higher education institutions in Malaysia (Othman et al., 2021). By promoting acceptance and successful implementation of digital transformation initiatives, institutions can enhance their teaching and learning practices, improve student outcomes, and increase institutional effectiveness. Employees within these institutions will benefit from the study (Al-Kumaim et al., 2021). Understanding the key factors that influence acceptance can help employees navigate and embrace digital tools more effectively, leading to increased job satisfaction, productivity, and professional growth. The study's emphasis on fostering self-efficacy and providing continuous professional development opportunities can empower employees to enhance their digital skills and competencies (Abad-Segura et al., 2020). Students enrolled in ODL programs will benefit from the study's implications. The successful implementation of digital transformation initiatives can result in an improved learning experience, enhanced access to resources and support, and greater engagement with educational content (Benavides et al., 2020). The aim of this study is to assess the direct and indirect relationship between effort expectancy, performance expectancy, self-efficacy, intention, and acceptance of digital transformation among employees in ODL higher education institutions in Malaysia. The following are the hypotheses proposed for this study, indicating the relationships among various variables among employees in online distance-learning higher education institutions in Malaysia.

H1: There is a positive and significant relationship between effort expectancy and acceptance of digital transformation

H2: There is a positive and significant relationship between performance expectancy and acceptance of digital transformation

H3: There is a positive and significant relationship between the intention and acceptance of digital transformation

H4: There is a positive and significant relationship between self-efficacy and acceptance of digital transformation

H5: There is a positive and significant relationship between effort expectancy and intention in digital transformation acceptance

H6: There is a positive and significant relationship between performance expectancy and intention in digital transformation acceptance

H7: There is a positive and significant relationship between effort expectancy and self-efficacy in digital transformation acceptance

H8: There is a positive and significant relationship between performance expectancy and self-efficacy in digital transformation acceptance

H9: There is a mediating effect of self-efficacy on the relationship between effort expectancy and acceptance of digital transformation

H10: There is a mediating effect of intention on the relationship between effort expectancy and acceptance of digital transformation

H11: There is a mediating effect of intention on the relationship between performance expectancy and acceptance of digital transformation

H12: There is a mediating effect of self-efficacy on the relationship between performance expectancy and acceptance of digital transformation

2 METHODOLOGY

This study focused on employees working in ODL higher education institutions in Malaysia as the target population. Primary data was collected using a survey instrument, specifically a survey questionnaire developed based on prior studies that have demonstrated strong reliability and validity. The questionnaire consisted of measurement items carefully selected to ensure suitability and frequent utilization in the field. To gather data, the survey questionnaires were distributed via email to the selected respondents. Due to the absence of a sample frame, non-probability purposive sampling was employed as the sampling technique. A total of 22 observed variables were included in the study, encompassing exogenous, mediating, and endogenous variables. The effort expectancy construct consisted of 5 measurement items (Venkatesh et al., 2003), performance expectancy consisted of 4 measurement items (Venkatesh et al., 2003), self-efficacy consisted of 4 measurement items (Venkatesh et al., 2003), intention consisted of 5 measurement items (Davis & Warshaw, 1992), and acceptance consisted of 4 measurement items (Brocks et al., 1998)

A five-point Likert scale ranging from strongly disagree to strongly agree was used to measure all the constructs' measurement items. Out of the 570 questionnaires sent out, a total of 426 questionnaires were returned, resulting in a response rate of 74.7%. This response rate was deemed adequate for data analysis using the structural equation modelling technique (SEM). After screening the data and removing outliers, 387 questionnaires were considered clean and suitable for analysis. In this study, component-based SEM, specifically partial least squares structural equation modelling (PLS-SEM), is employed to test the relationships in the proposed model (Hair et al., 2022). PLS-SEM allows for the analysis of the strength of a construct's influence on the target construct within the path model (Hair et al., 2022). It supports both explanatory and predictive goals in analyzing causal-predictive model relationships (Wold, 1982). For the estimation and modelling of evaluation results, this study employs SmartPLS 4 (Ringle et al., 2022).

3 FINDINGS AND DISCUSSION

3.1 Data Analysis

3.1.1 Respondents' Profile

Examination of the frequencies reveals several key insights about the participants in this study. First, in terms of gender distribution, it is clear that the majority of respondents identified as male (58%), and the remaining proportion identified as female (42%) Regarding the age structure of the participants, it was found that the oldest age group was people aged 31-40 years old individuals made up 29% of the sample. Furthermore, participants under 30 years of age represented 20% of the total, reflecting the diverse age range in the study. Looking at the years of service of the participants, the data shows that most fell into the 6-10-year range, which made up 33% of the sample. The 11-15 year range made up 34% of the participants, confirming the importance of this mid-career distance in the study population. Data on educational qualifications held by non-academic positions show that the majority of participants (25%) have doctoral degrees, and individuals with master's (32%) and bachelor's (24%) closely follow them.

3.1.2 Common Method Bias

In the field of business management research, one common challenge that researchers often encounter is the presence of something called "common method bias." This refers to a situation where the variation observed in data does not actually represent the intended variables being

studied but instead reflects the measurement method used in that particular field. This can lead to distorted or inflated relationships between variables, ultimately compromising the validity of research findings. To tackle this issue head-on, the researchers in this study have employed a reliable method known as Harman's single-factor test. When conducted the common method bias test, it was found that the principal factor accounted for only 39.4% of the variance. This result indicates that common method bias is not a major concern in this study. It aligns with the guidance provided by Podsakoff and Organ (1986), who suggest that when a principal component explains less than 50% of the variance, it is unlikely that common method bias is significantly influencing the findings.

3.1.3 Measurement Model

The validity and reliability of the constructs in this study were evaluated using the PLS-SEM algorithm. Following the recommendations of Hair et al. (2022), two crucial aspects of PLS-SEM were considered: the reliability and validity of the outer goodness model. The research model demonstrated satisfactory results as shown in Table 1, with all constructs surpassing the minimum threshold of 0.5 for average variance extracted (AVE), indicating the establishment of convergent validity for all constructs. Additionally, the composite reliability values for the constructs ranged from 0.848 to 0.896, surpassing the threshold of 0.7 as suggested by Hair et al. (2017). The Cronbach's alpha coefficients for all constructs were also above 0.7, ranging from 0.760 to 0.855, further affirming their reliability. To ensure discriminant validity, the cross-loading measurement items were examined. As shown in Table 1, all item loadings were higher than their respective cross-loadings, confirming the discriminant validity of the constructs. The assessment of discriminant validity was further supported by the Heterotrait-Monotrait (HTMT) ratios analysis (Table 2), which revealed that all four construct ratios were below the threshold of 0.9, as proposed by Henseler et al. (2015). Based on these findings, it can be concluded that this study successfully established the reliability and validity of all latent constructs, aligning with the recommendations of Hair et al. (2022). The use of the PLS-SEM algorithm and the comprehensive assessment of the constructs' measurement properties contribute to the robustness and trustworthiness of the study's results.

Table 1: Construct Reliability, Validity & Cross Loadings

Constructs	Items	ACC	CA	CR	AVE
Acceptance	ACC1	0.818	0.826	0.884	0.656
	ACC2	0.817			
	ACC3	0.830			
	ACC4	0.774			
Effort Expectancy	EE1	0.805	0.797	0.860	0.551
	EE2	0.722			
	EE3	0.749			
	EE4	0.695			
	EE5	0.737			
Intention	INT1	0.806	0.855	0.896	0.633
	INT2	0.828			
	INT3	0.808			
	INT4	0.748			
	INT5	0.785			
Performance Expectancy	PE1	0.773	0.760	0.848	0.584
	PE2	0.788			
	PE3	0.669			
	PE4	0.817			
Self-Efficacy	SE1	0.810	0.810	0.877	0.645
	SE2	0.884			
	SE3	0.867			
	SE4	0.625			

Table 2: Hetrotrait-Monotrait (HTMT) Ratio

	ACC	EE	INT	PE
EE	0.656			
INT	0.733	0.574		
PE	0.559	0.646	0.528	
SE	0.622	0.884	0.524	0.617

3.1.4 Structural Model

In this study, the evaluation of the structural model was conducted by simultaneously assessing pathway coefficients (β) and coefficients of determination (R2) using a methodology outlined by Hair et al. (2017). The evaluation employed the Partial Least Squares (PLS) method, utilizing 5000 subsamples to determine the significance level of the path coefficients. The findings of the hypothesis tests, including the path coefficients (beta), t-statistics, and p-values, are presented in Table 3. The statistical analysis reveals that H1 is supported. There is a statistically significant positive relationship between Effort Expectancy (EE) and Acceptance

(ACC), as indicated by the beta coefficient of 0.177 ($p < 0.05$). The statistical analysis confirms the support for H2. There is a significant positive relationship between Performance Expectancy (PE) and Acceptance (ACC), as indicated by the beta coefficient of 0.101 ($p < 0.05$). H3 is supported based on the statistical analysis. There is a significant positive relationship between Intention (INT) and Acceptance (ACC), with a beta coefficient of 0.430 ($p < 0.001$). The statistical analysis provides support for H4. There is a statistically significant positive relationship between Self-Efficacy (SE) and Acceptance (ACC), with a beta coefficient of 0.253 ($p < 0.001$). The statistical analysis supports H5, indicating a significant positive relationship between Effort Expectancy (EE) and Intention (INT). The beta coefficient of 0.125 ($p < 0.05$) suggests that EE has a moderate impact on INT. H6 is supported by the statistical analysis, indicating a significant positive relationship between Performance Expectancy (PE) and Intention (INT). The beta coefficient of 0.065 ($p < 0.05$) suggests a small but meaningful impact of PE on INT. The statistical analysis confirms the support for H7, indicating a significant positive relationship between Effort Expectancy (EE) and Self-Efficacy (SE). The beta coefficient of 0.696 ($p < 0.001$) suggests a strong impact of EE on SE. H8 is supported based on the statistical analysis. There is a statistically significant positive relationship between Performance Expectancy (PE) and Self-Efficacy (SE), as indicated by the beta coefficient of 0.042 ($p < 0.05$). The statistical analysis supports Hypothesis H9, indicating that SE mediates the relationships between EE and ACC. The beta coefficient was 0.095 ($p < 0.05$), hence confirms H9 is supported. For hypothesis H10, the statistical data analysis results show that INT mediates the relationships between PE and ACC. The beta coefficient was 0.150 ($p < 0.05$), hence confirms H10 is supported. For hypothesis H11, the statistical data analysis results revealed that INT mediates the relationships between EE and ACC. The beta coefficient was 0.108 ($p < 0.05$), therefore confirms H11 is supported. For hypothesis H12, the statistical data analysis results show that SE mediates the relationships between PE and ACC. The beta coefficient was 0.023 ($p < 0.05$), which also confirms H12 is supported.

Table 3: Hypotheses Testing Results & f^2

Hypotheses	Beta	Tstatistics	Pvalues	f^2	2.50%	97.50%	Decision
H1: EE -> ACC	0.177	3.125	0.002	0.025	0.066	0.286	*Supported*
H2: PE -> ACC	0.101	1.984	0.047	0.013	0.005	0.205	*Supported*
H3: INT -> ACC	0.430	8.497	0.000	0.256	0.327	0.525	*Supported*
H4: SE -> ACC	0.146	2.358	0.018	0.018	0.028	0.270	*Supported*
H5: EE -> INT	0.349	6.755	0.000	0.125	0.242	0.446	*Supported*
H6: PE -> INT	0.253	4.872	0.000	0.065	0.147	0.352	*Supported*
H7: EE -> SE	0.649	18.263	0.000	0.696	0.574	0.714	*Supported*
H8: PE -> SE	0.159	3.261	0.001	0.042	0.061	0.251	*Supported*
H9: EE -> SE -> ACC	0.095	2.261	0.024		0.018	0.183	*Supported*
H10: EE -> INT -> ACC	0.150	5.461	0.000		0.100	0.208	*Supported*
H11: PE -> INT -> ACC	0.108	3.960	0.000		0.058	0.165	*Supported*
H12: PE -> SE -> ACC	0.023	2.070	0.038		0.006	0.054	*Supported*

3.2 Discussion

To enhance employee acceptance of digital transformation in online distance learning higher education institutions, it is crucial to formulate comprehensive strategies based on the supported hypotheses and the results provided in the table. Online distance learning higher education institutions should focus on effort expectancy, institutions can invest in user-friendly technologies and platforms that simplify tasks and reduce complexity. Additionally, offering comprehensive training programs and continuous support will empower employees to navigate and utilize digital tools effectively. By streamlining processes and removing unnecessary barriers, institutions can minimize the effort required for employees to embrace digital transformation. ODL higher education institutions should strengthen performance expectancy, it is important to communicate the benefits and positive outcomes associated with digital transformation. Providing concrete examples and success stories of how digital tools and practices have improved teaching and learning experiences can create a compelling case for adoption. Feedback mechanisms, such as regular performance assessments and evaluations, can also play a vital role in highlighting the impact of digital transformation on individual and institutional performance. ODL higher education institutions should foster self-efficacy among employees which is crucial for their confidence and willingness to embrace digital transformation. This can be achieved by offering continuous professional development opportunities that focus on enhancing digital skills and competencies. Creating a supportive and collaborative culture, where employees feel encouraged to experiment, share knowledge, and learn from one another, can significantly contribute to building self-efficacy. Recognizing

and celebrating individual achievements in digital transformation efforts further reinforces employees' belief in their own capabilities. Lastly, ODL higher education institutions should improve employees' intention toward digital transformation requires proactive measures. Involving employees in decision-making processes and seeking their input and ideas can generate a sense of ownership and commitment. Communicating the institution's vision and strategic goals, and how digital transformation aligns with them, can help employees understand the purpose and significance of their efforts. Offering incentives, rewards, or career advancement opportunities tied to digital transformation initiatives can also motivate employees to actively engage in the process.

3.2.1 Theoretical Implications

This study has important theoretical implications for online distance learning higher education and digital transformation. It contributes to our theoretical understanding of how digital transformation is accepted and adopted in educational institutions. By examining the relationships between latent variables such as effort expectancy, performance expectancy, self-efficacy, and intention, the study provides empirical evidence of their significance in influencing employee acceptance of digital transformation. This expands upon existing theoretical frameworks like the Technology Acceptance Model (TAM) by highlighting the specific factors that play a crucial role in the context of online distance learning. The study emphasizes the need to address multiple dimensions of acceptance in digital transformation efforts, focusing on effort expectancy, performance expectancy, self-efficacy, and intention. By doing so, it underscores the complex nature of employee acceptance and emphasizes the need for a comprehensive approach. This enhances our understanding of acceptance theories by emphasizing the multidimensionality and interplay of various factors in the online distance learning context. The research also highlights the importance of individual factors, such as self-efficacy and intention, in driving acceptance and adoption of digital transformation. By demonstrating their influence on employee acceptance, it underscores the role of individual beliefs, attitudes, and motivations in the process. This has implications for designing and implementing strategies to enhance employee acceptance by addressing both individual and organizational factors.

3.2.2 Practical Implications

The study's findings have practical implications for online distance learning institutions aiming to foster employee acceptance of digital transformation. Strategies can be developed based on

the supported hypotheses and results to enhance the acceptance and successful implementation of digital initiatives. Institutions should prioritize improving effort expectancy by investing in user-friendly technologies, simplifying tasks, and providing comprehensive training. Streamlining processes and removing barriers will reduce the effort required for employees to embrace digital transformation. Strengthening performance expectancy involves effectively communicating the benefits and showcasing success stories of digital tools. Implementing feedback mechanisms, such as performance assessments, highlights the impact on individual and institutional performance. Fostering self-efficacy requires offering professional development opportunities, creating a supportive culture, and recognizing individual achievements. Addressing employees' intentions involves involving them in decision-making, communicating the institution's vision, and providing incentives tied to digital initiatives. These strategies will enhance acceptance and engagement in digital transformation, ensuring its successful integration.

3.2.3 Suggestions for Future Study

Future research can explore several avenues to advance understanding. Additional latent variables like perceived usefulness, social influence, and organizational support can be investigated to create a more comprehensive model that encompasses the acceptance process. Cultural and contextual factors can be examined as moderators of the relationships between latent variables and employee acceptance, revealing unique challenges and opportunities in diverse settings. Replication studies across various educational contexts and diverse samples can enhance the generalizability and robustness of the relationships between latent variables and employee acceptance. By pursuing these research avenues, a deeper understanding of employee acceptance in online distance learning can be achieved, informing the development of effective strategies and interventions for the successful implementation of digital transformation initiatives.

4 CONCLUSION

This study provides valuable insights into employee acceptance of digital transformation in online distance learning higher education institutions. The findings underscore the significance of latent variables, including effort expectancy, performance expectancy, self-efficacy, and intention, in shaping acceptance. By expanding existing theoretical frameworks, the study highlights the multifaceted nature of these factors within the context of online distance learning. Further exploration in these domains has the potential to deepen our understanding

of employee acceptance and facilitate the development of targeted strategies for successful digital transformation. ODL institutions can leverage these insights to enhance their practices, cultivate a supportive environment, and fully embrace the transformative potential of digital technologies in education. This study contributes to the existing knowledge base on digital transformation and lays a solid foundation for future research endeavours in this field.

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