

Unravelling Digital Transformation Acceptance in Online Flexible Distance Learning Higher Education Institutions

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Abstract

This study endeavors to conduct a thorough examination of the intricate relationships among performance expectancy, effort expectancy, facilitating conditions, self-efficacy, and the acceptance of digital transformation within the specific context of online distance learning higher education institutions in Malaysia. By building upon established theoretical frameworks, the study seeks to empirically validate the relevance and interplay of these constructs in the unique educational landscape of online flexible distance learning. Data collection was executed through a meticulously designed questionnaire distributed among employees in these institutions, and the subsequent analysis involved a meticulous application of rigorous regression, hypothesis testing, and structural equation modeling techniques, leveraging responses from a diverse sample of 387 participants. This study adopted the Structural Equation Modeling (SEM) technique and used smartpls4 for data analysis. While affirming the validity of all direct relationship hypotheses, the study revealed that only two indirect relationship hypotheses were substantiated. This underscores the nuanced dynamics characterizing acceptance within the online distance learning environment. Theoretical implications derived from these findings contribute to an enriched understanding of acceptance theories, shedding light on the multifaceted factors influencing digital transformation in online education. Looking forward, future research avenues could delve into exploring additional variables, conducting longitudinal studies to unveil the long-term impacts of digital transformation, and investigating cultural influences on acceptance dynamics. In essence, this study contributes significantly to advancing insights into the realm of digital transformation within online education, offering valuable perspectives that can inform both practical implementations and policy frameworks in higher education institutions.

Keywords: Performance Expectancy, Effort Expectancy, Facilitating Conditions, Self-Efficacy, Acceptance

Introduction

Digital transformation of online distance-learning higher education institutions worldwide is a crucial facet of the evolving educational landscape (Santos et al., 2019). In recent years, these institutions have undergone significant shifts in response to the growing demand for flexible, technology-driven learning (Grosbeck et al., 2020). Employees, including educators, administrators, and support staff, have played pivotal roles in embracing and driving this transformation. Digital transformation encompasses the adoption of cutting-edge technologies, such as learning management systems, virtual classrooms, AI-driven analytics, and online collaboration tools (Biryuk, 2022). These innovations have revolutionized curriculum delivery, student engagement, administrative processes, and data management (Nguyen-Anh et al., 2023). The successful acceptance of digital transformation requires a cultural shift within these institutions, with a focus on training, upskilling, and fostering a tech-savvy mindset among employees (Pham et al., 2021). Furthermore, the COVID-19 pandemic accelerated this acceptance, highlighting the importance of remote learning and the need for agile responses to disruptions (Bećirović & Dervić, 2023). As digital transformation continues to shape the landscape of online distance learning higher education, institutions globally must prioritize comprehensive strategies for technology integration, ensure digital literacy among employees, and provide ongoing support to navigate this dynamic and exciting educational era (Giang et al., 2021). In Malaysia, the acceptance of digital transformation among employees in online distance-learning higher education institutions has witnessed remarkable progress (Othman et al., 2021). These institutions have embraced innovative technologies to enhance the quality of education and adapt to evolving pedagogical needs. Faculty members, administrators, and support staff have actively integrated digital tools, such as virtual classrooms, interactive learning platforms, and data analytics, into their practices (Khalid et al., 2018). The COVID-19 pandemic further accelerated this adoption, underscoring the importance of digital readiness. In Malaysia's higher education sector, a concerted effort is being made to cultivate a tech-savvy workforce through training and development initiatives, ensuring that employees effectively harness digital solutions to deliver high-quality distance education (Raju et al., 2021). The digital transformation acceptance problem among employees in Malaysian online distance-learning higher education institutions presents a significant challenge. While technology acceptance has surged, disparities in digital proficiency among staff may hinder effective implementation. Factors such as resistance to change, inadequate training, and the need for digital infrastructure improvements can impede the seamless integration of digital tools (Lazim et al., 2021). Balancing traditional pedagogy with digital innovation is another concern. Addressing these issues is crucial to ensure educators, administrators, and support staff are well-equipped to navigate the evolving digital landscape and deliver high-quality, accessible education in Malaysia's online distance learning higher education sector (Osman et al., 2021). This study is highly significant for policymakers. It provides data-driven insights into the challenges and opportunities associated with digital acceptance in education. Policymakers can use this information to formulate and adjust policies that promote digital literacy, infrastructure development, and professional development for educators and staff. These policy changes can, in turn, foster innovation and improve the overall quality of online education, making it more accessible and effective. Ultimately, the study empowers policymakers to make informed decisions that positively impact the nation's educational landscape and its global competitiveness. The main objective of this study was to identify the direct and indirect effects of several important factors, namely performance expectations, effort expectations, and facilitating conditions, on

the overall acceptance of a particular concept, product, or technology. is to comprehensively evaluate. To clarify this complex relationship, the examination was done on the central role that self-efficacy plays as a mediator of this process. Fundamentally, our objective is to investigate how an individual's perception of performance expectations that reflect the expected benefits and benefits of adopting a concept or technology directly influences its acceptance

Literature Review

Underpinning Theory

The Unified Theory of Acceptance and Use of Technology (UTAUT) serves as a robust underpinning theory for this study, providing a comprehensive framework to understand the dynamics of technology acceptance within Online Flexible Distance Learning (OFDL) higher education. UTAUT, developed by Venkatesh et al. (2003), integrates and extends several prominent technology acceptance models, emphasizing the role of key determinants in shaping individuals' acceptance behaviors. In the context of the study, UTAUT's core elements—Performance Expectancy (PE), Effort Expectancy (EE), and Facilitating Conditions (FC)—offer a structured lens to examine the factors influencing acceptance. The inclusion of self-efficacy as a mediator aligns with UTAUT's adaptability, allowing for a more nuanced exploration of the psychological mechanisms at play. Self-efficacy, derived from Bandura's Social Cognitive Theory, underscores individuals' belief in their ability to perform tasks, making it a pivotal factor in technology adoption. The study extends UTAUT by incorporating self-efficacy as a mediator, acknowledging its mediating role in the relationship between performance and effort expectations and the ultimate acceptance of digital transformation. This extension enriches the theoretical landscape by recognizing the intricate interplay of psychological factors within the UTAUT framework, offering a more nuanced understanding of technology acceptance in the evolving landscape of OFDL higher education. The study's alignment with UTAUT contributes to its broader applicability and relevance in diverse educational settings.

Relationship between Performance Expectancy, Self-Efficacy and Acceptance

In the realm of Online Distance Learning (ODL) within Higher Education Institutions, the dynamics of student engagement and acceptance of digital platforms play a pivotal role in shaping the overall effectiveness of the educational experience (Latip et al., 2020). This research explores the intricate interplay between three key constructs: performance expectancy, self-efficacy, and acceptance, with a specific focus on the mediating role of self-efficacy (Latip et al., 2022). Performance expectancy, representing students' perceptions of how the online learning environment can enhance their academic performance, forms a foundational element in this investigation (Altalhi, 2021). Concurrently, self-efficacy, denoting individuals' beliefs in their capability to succeed in the online learning context, emerges as a crucial factor influencing student motivation, persistence, and ultimately, academic success (Alhwaiti, 2023). Furthermore, the research scrutinizes the concept of acceptance, elucidating the degree to which students are willing to adopt and engage with online learning platforms. What distinguishes this study is the recognition of self-efficacy as a mediator in the relationship between performance expectancy and acceptance (Wang & Chu, 2023). This mediation analysis seeks to unveil the nuanced psychological processes through which students' perceptions of performance expectations may influence their acceptance of online learning platforms, mediated by their self-efficacy beliefs (Madzamba & Matorevhu, 2023).

The findings from this research are anticipated to offer valuable insights for Higher Education Institutions engaged in online distance learning, informing strategic decisions and interventions aimed at optimizing the acceptance and efficacy of digital learning platforms (Punjani & Mahadevan, 2022). Ultimately, by unraveling the intricate connections between these constructs, this study aims to contribute to the ongoing discourse on effective online education practices and their implications for the evolving landscape of higher education (Criollo-C et al., 2023). Therefore, based on the above hypotheses' development, the following hypotheses were proposed for this study:

- H1:* There is a relationship between performance expectancy and acceptance of digital transformation among employees in online flexible distance learning higher institutions.
- H2:* There is a relationship between performance expectancy and self-efficacy of acceptance of digital transformation among employees in online flexible distance learning higher institutions.
- H3:* There is a mediating effect of self-efficacy on the relationship between performance expectancy and acceptance of digital transformation among employees in online flexible distance learning higher institutions.

Relationship between Effort Expectancy, Self-Efficacy and Acceptance

Within the landscape of Online Distance Learning (ODL) in Higher Education Institutions, the nexus of effort expectancy, self-efficacy, and acceptance emerges as a critical focal point in understanding and optimizing student engagement (Dahri et al., 2023). This research delves into the intricate relationships among these key constructs, with a specific emphasis on the mediating role of self-efficacy (Pumptow & Brahm, 2021). Effort expectancy, reflecting students' perceptions of the ease of use and convenience of online learning platforms, stands as a foundational element in this exploration. Concurrently, self-efficacy, which encapsulates students' belief in their capacity to succeed in the online learning environment, assumes a central role in shaping their motivation and adaptability (Liu et al., 2022). The study also scrutinizes the concept of acceptance, delineating the extent to which students are receptive to and willing to integrate online learning tools into their educational journey (Malureanu et al., 2021). Significantly, this research posits self-efficacy as a mediator in the relationship between effort expectancy and acceptance. The mediating role of self-efficacy unfolds the intricate cognitive processes through which students' perceptions of the ease of effort in utilizing online platforms influence their overall acceptance, mediated by their confidence in their capabilities (Wang et al., 2023). By unraveling these interconnected dynamics, this study aims to provide nuanced insights that can inform Higher Education Institutions in tailoring their online distance learning strategies, ultimately contributing to an enriched understanding of effective educational technology integration and its implications for the evolving landscape of higher education (Alam et al., 2023). Hence, based on the above hypotheses' development, the following hypotheses were proposed for this study:

- H4:* There is a relationship between effort expectancy and acceptance of digital transformation among employees in online flexible distance learning higher institutions.

H5: There is a relationship between effort expectancy and self-efficacy of acceptance of digital transformation among employees in online flexible distance learning higher institutions.

H6: There is a mediating effect of self-efficacy on the relationship between effort expectancy and acceptance of digital transformation among employees in online flexible distance learning higher institutions.

Relationship between Facilitating Conditions, Self-Efficacy and Acceptance

In the evolving landscape of Online Distance Learning (ODL) within Higher Education Institutions, the intricate relationships between facilitating conditions, self-efficacy, and acceptance constitute a pivotal area of investigation, with a particular focus on the mediating influence of self-efficacy (Alyouseff, 2021). Facilitating conditions, encompassing the availability of resources, technical support, and infrastructure, represent the foundational underpinning of this research. Simultaneously, self-efficacy emerges as a key determinant in shaping students' belief in their ability to navigate and effectively utilize the provided facilitating conditions in the online learning environment (Anthony Jnr et al., 2022). The study further probes into the concept of acceptance, delineating the extent to which students are willing to embrace and integrate online learning tools into their educational journey (Anthony Jr et al., 2023). Notably, this research posits self-efficacy as a mediator in the relationship between facilitating conditions and acceptance (Campbell & Frawley, 2023). By focusing on the mediating role of self-efficacy, the study seeks to unveil the nuanced cognitive processes through which students' perceptions of the availability and support of facilitating conditions influence their acceptance of online learning platforms (Fearnley & Amora, 2023). Understanding these intricate dynamics can inform Higher Education Institutions in tailoring their strategies to enhance facilitating conditions, thus fostering a positive impact on self-efficacy and acceptance (Hanham et al., 2021). Thus, based on the above hypotheses' development, the following hypotheses were proposed for this study:

H7: There is a relationship between facilitating conditions and acceptance of digital transformation among employees in online flexible distance learning higher institutions.

H8: There is a relationship between facilitating conditions and self-efficacy of acceptance of digital transformation among employees in online flexible distance learning higher institutions.

H9: There is a relationship between self-efficacy and acceptance of digital Transformation among employees in online flexible distance learning higher institutions.

H10: There is a mediating effect of self-efficacy on the relationship between facilitating conditions and acceptance of digital transformation among employees in online flexible distance learning higher institutions.

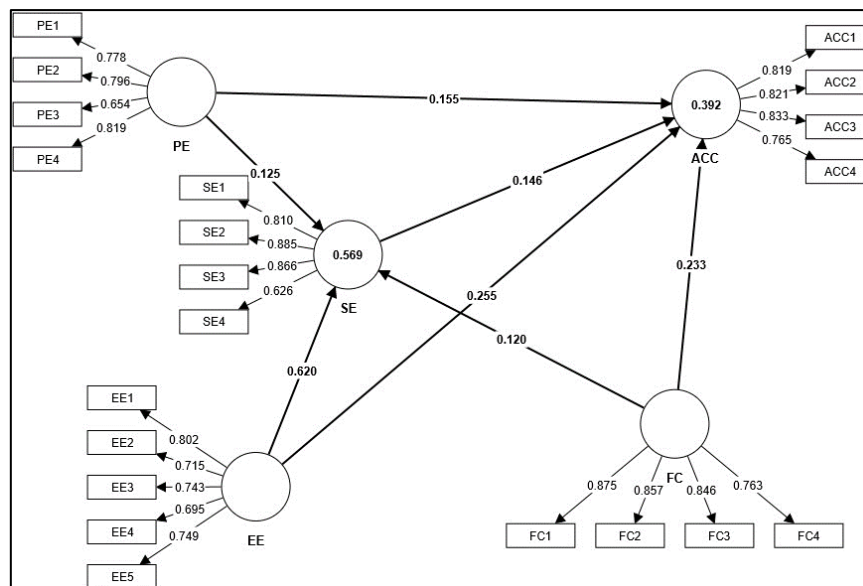


Figure 1: Research Model

Note: PE=Performance Expectancy EE=Effort Expectancy FC=Facilitating Condition
SE=Self-Efficacy ACC=Acceptance

Methodology

Employing a quantitative research methodology, this investigation examines the influence of diverse factors on the acceptance of digital transformation within the workforce of online flexible distance-learning universities in Malaysia. This methodology enables the collection of quantitative data for subsequent statistical analysis. The study's sample encompasses employees from online flexible distance education institutions in Malaysia, selected based on their suitability and willingness to participate, utilizing purposive sampling. The study model encompasses five latent variables and 22 observed variables. Independent variables include effort expectancy, performance expectancy, facilitating conditions, self-efficacy, and acceptance. Self-efficacy is measured using Sherer et al.'s (1982) scale, while effort expectancy, performance expectancy, and facilitating conditions employ measurements from Venkatesh et al. (2003), and acceptance is gauged using Brock et al.'s (1998) scale. A 5-point Likert scale assesses participants' agreement with each statement. Of the 448 distributed questionnaires, 391 were returned, yielding an 87.27% response rate. Following data filtering, cleaning, and outlier removal, a dataset of 387 valid responses underwent further analysis. Structural equation modeling (SEM) was employed for data analysis, allowing examination of the relationships between variables and sample size considerations. The Smart-PLS 4 software facilitated statistical and structural model analysis, recognized for its efficacy in equation modeling (Ringle et al., 2022). Table 1 in this study provides an overview of the respondents' profiles.

Data Analysis

Respondents' Profiles

The respondents' profiles in this study offer valuable insights into the demographic and professional characteristics of the participants. Gender distribution indicates a slight majority of male respondents (58%), while females constitute 42% of the sample. Regarding age, the largest group falls within the 31-40-year-old category (36%), followed by those aged 41-50 (29%). Notably, the majority of respondents are academic professionals (87%) compared to

non-academic staff (13%). In terms of years of service, a significant proportion falls within the 6-15 years range, with 33%, 34%, and 20% for 6-10 years, 11-15 years, and 16-20 years, respectively. The majority of respondents hold advanced degrees, with 25% having a doctorate, 32% a master's degree, and 24% a bachelor's degree. Interestingly, a high percentage of respondents (98%) recommend the digital transformation under study, indicating a strong positive inclination towards the acceptance of digital practices in the context of online flexible distance-learning universities in Malaysia. These demographic patterns provide a nuanced understanding of the participant composition, offering a foundation for further analysis of the acceptance of digital transformation across diverse demographic and professional segments.

Common Method Bias

According to Kock (2015), the detection of common method bias is feasible when the variance inflation factor (VIF) surpasses 3.3. Common method bias arises when variability in respondents' responses is attributed to the measurement instrument rather than the actual predispositions intended by the instrument. To assess the existence of collinearity and common method bias, a comprehensive collinearity test was executed. The outcomes of the factor-level analysis, detailed in Table 1, reveal that all variance inflation factors (VIF) were below the critical threshold of 3.3. This outcome serves as confirmation that the model encountered no issues associated with common method bias (Kock, 2015).

Table 1

Full Collinearity Test

	MACC	MSE	MPE	MEE	MFC
MACC		1.596	1.585	1.556	1.525
MSE	2.223		2.220	1.576	2.226
MPE	1.457	1.465		1.443	1.455
MEE	2.251	1.637	2.273		2.341
MFC	1.330	1.394	1.381	1.411	

Measurement Model

In this study, the assessment of both first-order and second-order measurements was conducted utilizing the measurement evaluation technique proposed by Hair et al. (2017). The primary objective was to identify items with loadings below the 0.7 threshold. The analysis of construct reliability and validity revealed that all constructs demonstrated Average Variance Extracted (AVE) values surpassing 0.5, ranging from 0.550 to 0.699 (Table 2), thereby establishing convergent validity (Hair et al., 2017). Additionally, composite reliability for all constructs exceeded 0.7, ranging from 0.760 to 0.856, while Cronbach's alpha values were greater than 0.7, ranging from 0.767 to 0.862 (Table 2). To ensure discriminant validity, researchers assessed cross-loadings initially, ensuring the effective representation and measurement of each construct by its corresponding items (Table 2). Subsequently, the Heterotrait-Monotrait (HTMT) ratio, recommended for assessing discriminant validity in Variance-Based Structural Equation Modeling (VB-SEM) (Henseler, Ringle & Sarstedt, 2015), was employed. The HTMT ratios for the constructs, along with the original sample, are presented in Table 2. These values were below the 0.9 threshold, and the bias-corrected and accelerated bootstrap confidence intervals remained below 1, confirming adherence to discriminant validity. This comprehensive analysis reinforces confidence in the distinctiveness

of the constructs and their efficacy in measuring various facets of the investigated phenomenon.

Table 2

Construct Reliability, Validity, Cross Loadings & HTMT Ratios

Constructs	Items	Loadings	CA	CR	AVE	Hetrotrait-Monotrait (HTMT) Ratios			
						ACC	EE	FC	PE
Acceptance	ACC1	0.819	0.826	0.833	0.656				
	ACC2	0.821							
	ACC3	0.833							
	ACC4	0.765							
Effort									
Expectancy	EE1	0.802	0.797	0.802	0.550	0.656			
	EE2	0.715							
	EE3	0.743							
	EE4	0.695							
	EE5	0.749							
Facilitating									
Conditions	FC1	0.875	0.856	0.862	0.699	0.552	0.510		
	FC2	0.857							
	FC3	0.846							
	FC4	0.763							
Performance									
Expectancy	PE1	0.778	0.760	0.767	0.585	0.559	0.646	0.495	
	PE2	0.796							
	PE3	0.654							
	PE4	0.819							
Self-Efficacy	SE1	0.810	0.810	0.831	0.645	0.622	0.884	0.521	0.617
	SE2	0.885							
	SE3	0.866							
	SE4	0.626							

Structural Model

In this study, the assessment of the structural model involved the concurrent examination of pathway coefficients (β) and coefficients of determination (R^2), adhering to the methodology outlined by (Hair et al., 2017). The methodology employed the Partial Least Squares (PLS) technique with 5000 subsamples to determine the significance level of path coefficients. The results of hypothesis tests, encompassing confidence intervals, path coefficients (beta), corresponding t-statistics, and p-values, are meticulously presented in Table 3. This thorough analysis provides valuable insights into the significance and robustness of the relationships among the variables incorporated into the structural model. The hypotheses analysis reveals nuanced insights into the relationships among key variables in the study. The hypotheses analysis reveals nuanced insights into the relationships among key variables in the study. Firstly, H1: Performance Expectancy (PE) ($\beta = 0.155$, $T = 2.872$, $p = 0.004$) significantly influences Acceptance (ACC), affirming that perceived performance gains contribute significantly to the acceptance of digital transformation initiatives. Secondly, H2:

PE ($\beta = 0.125$, $T = 2.515$, $p = 0.012$) also positively influences Self-Efficacy (SE), indicating that higher performance expectations correspond to increased self-efficacy in the context of digital transformation. However, the hypothesized mediation effect of H3: SE ($\beta = 0.018$, $T = 1.71$, $p = 0.087$) on the relationship between PE and ACC is not supported, suggesting that other factors may play a role in this relationship. Thirdly, H4: Effort Expectancy (EE) ($\beta = 0.255$, $T = 3.878$, $p = 0.000$) emerges as a crucial factor, positively impacting both ACC and SE. The ease of use significantly influences the acceptance of digital transformation and contributes to enhanced self-efficacy. The mediation role of H5: SE ($\beta = 0.620$, $T = 17.176$, $p = 0.000$) in the relationship between EE and ACC is confirmed, emphasizing the intermediary nature of self-efficacy. Furthermore, H6: FC (Facilitating Conditions) ($\beta = 0.091$, $T = 2.103$, $p = 0.036$) exhibits a substantial positive influence on ACC, underlining the importance of conducive conditions in fostering acceptance. H7: FC ($\beta = 0.233$, $T = 4.275$, $p = 0.000$) also positively influences SE, indicating that favorable conditions enhance individuals' self-efficacy in the digital transformation context. Finally, the positive influence of H9: SE ($\beta = 0.146$, $T = 2.166$, $p = 0.030$) on ACC is affirmed, highlighting the pivotal role of self-efficacy in shaping individuals' acceptance of digital transformation initiatives. Nevertheless, the hypothesized mediation effect of H10: SE ($\beta = 0.018$, $T = 1.616$, $p = 0.106$) in the relationship between FC and ACC is not supported, indicating that additional factors may contribute to this relationship.

Effect sizes (f^2) in this study underwent evaluation according to Cohen's criteria (1992), with categorization into small (0.020 to 0.150), medium (0.150 to 0.350), or large (0.350 or greater). The observed effect sizes ranged from small (0.025) to large (0.609). Notably, the acceptance level demonstrated a substantial amount of explained variance in endogenous constructs, with an R^2 value of 0.392 (Figure 1). Regarding the mediators, particularly self-efficacy, the model accounted for approximately 56.9% of the variance in the structural components, as indicated by an R^2 value of 0.569. Importantly, attention is directed towards the model's out-of-sample predictive capabilities, a crucial aspect for drawing conclusions and offering managerial recommendations. To evaluate this aspect, we applied the PLSpredict procedure for assessing business performance, adhering to the methodology outlined by Shmueli et al. (2016, 2019). The assessment utilized Q^2 , where a value greater than 0 indicates that the PLS-SEM predictions exceed the standard outcomes predicted by a naïve mean value (Table 4). Moreover, the root mean square error (RMSE) of the PLS-SEM predictions consistently demonstrated smaller values compared to the linear model (LM) prediction benchmark in all instances, providing substantial evidence of the model's predictive power (Table 4). Moreover, following Hair et al.'s (2022) recommendation, we integrated the Cross-Validated Predictive Ability Test (CVPAT) to evaluate the predictive performance of the PLS-SEM model, as implemented by Liengaard et al (2021), concurrently with the PLSpredict analysis. The CVPAT utilized an out-of-sample prediction method to assess the model's prediction error and calculate the average loss value. For comparison, two benchmarks were employed: the average loss value based on predictions using indicator averages (IA) as a straightforward benchmark, and the average loss value of a linear model (LM) forecast as a more conservative benchmark. To establish the superior predictive capabilities of the model over these benchmarks, it was essential to observe a lower average loss value for PLS-SEM, resulting in a negative difference in the average loss values. The CVPAT aimed to determine whether this difference in average loss values between PLS-SEM and the benchmarks was significantly below zero. A significantly negative difference would indicate enhanced predictive abilities of the model. The results of the CVPAT, detailed in Table 5, unequivocally

confirm that the average loss value of PLS-SEM was indeed lower than that of the benchmarks. This is validated by the negative difference in the average loss values, providing robust evidence of the model's superior predictive capabilities, in alignment with (Ringle and Sarstedt, 2016; Hair et al., 2018). The Importance Performance Analysis (IPMA) is a recommended approach for evaluating the significance and effectiveness of latent variables in explaining acceptance, as delineated in Table 6. In gauging their overall impact, it was revealed that effort expectancy exerted the most substantial influence on acceptance (with a coefficient of 0.346), followed by facilitating conditions (0.250), performance expectancy (0.174), and self-efficacy (0.146). These coefficients offer insights into the relative importance of each latent variable within the acceptance context. In terms of performance scores, it's noteworthy that effort expectancy achieved the highest score (67.194), while self-efficacy garnered the lowest score (63.608) on a scale ranging from 0 to 100. This implies that effort expectancy performed relatively well, whereas self-efficacy exhibited the lowest level of total effect and performance. It's worth highlighting that self-efficacy, despite being the most critical mediator for acceptance intention, exhibited the lowest total effect and performance level. Consequently, based on these findings, it is advisable for top management within OFDL higher education institutions to prioritize and place greater emphasis on activities aimed at enhancing employees' self-efficacy. By directing efforts toward improving self-efficacy, it becomes possible to enhance overall acceptance levels as well.

Table 3
Hypotheses Testing Results, f^2 & VIF

Hypotheses	Beta	T statistics	P values	f^2	VIF	2.50%	97.50%	Decision
H1: PE -> ACC	0.155	2.872	0.004	0.027	1.463	0.048	0.261	Supported
H2: PE -> SE	0.125	2.515	0.012	0.025	1.427	0.025	0.219	Supported
H3: PE -> SE -> ACC	0.018	1.71	0.087			-0.003	0.048	Not Supported
H4: EE -> ACC	0.255	3.878	0.000	0.045	2.355	0.123	0.382	Supported
H5: EE -> SE	0.620	17.176	0.000	0.609	1.463	0.548	0.687	Supported
H6: EE -> SE -> ACC	0.091	2.103	0.036			0.008	0.178	Supported
H7: FC -> ACC	0.233	4.275	0.000	0.067	1.333	0.131	0.341	Supported
H8: FC -> SE	0.120	2.958	0.003	0.026	1.300	0.042	0.201	Supported
H9: SE -> ACC	0.146	2.166	0.030	0.015	2.320	0.012	0.274	Supported
H10: FC -> SE -> ACC	0.018	1.616	0.106			-0.002	0.047	Not Supported

Table 4
PLSpredicts

	Q ² predict	PLS-RMSE	LM_RMSE	PLS - LM
ACC1	0.313	0.631	0.634	-0.003
ACC2	0.221	0.629	0.632	-0.003
ACC3	0.244	0.677	0.695	-0.018
ACC4	0.169	0.718	0.721	-0.003
SE1	0.375	0.653	0.539	0.114
SE2	0.421	0.596	0.577	0.019
SE3	0.445	0.575	0.578	-0.003
SE4	0.189	0.720	0.731	-0.011

Table 5

Cross-Validated Predictive Ability Test

	Average loss difference	t-value	p-value
ACC	-0.137	6.326	0.000
SE	-0.226	7.433	0.000
Overall	-0.181	8.508	0.000

Table 6

Importance-Performance Map Analysis

	Total Effect	Performance
EE	0.346	67.194
FC	0.250	67.010
PE	0.174	66.802
SE	0.146	63.608

Discussion & Conclusion

The study's findings underscore the significance of various factors in influencing acceptance within Online Flexible Distance Learning (OFDL) higher education institutions. To ensure the effective impact of performance expectations (PE), effort expectations (EE), and facilitating conditions (FC) on acceptance, with self-efficacy as a crucial mediator, strategic interventions are essential. Firstly, fostering a positive perception of PE is crucial. Institutions should actively communicate the benefits and positive outcomes associated with digital transformation, highlighting the improvements in performance and efficiency. Effort expectancy plays a pivotal role, and strategies should focus on simplifying the user experience and providing comprehensive support systems. Training programs, user-friendly interfaces, and accessible resources can significantly contribute to enhancing effort expectancy, consequently promoting higher acceptance. Facilitating conditions, identified as a significant determinant, necessitates the establishment of a supportive infrastructure. Investing in technology infrastructure, providing adequate resources, and ensuring a conducive environment for digital acceptance are critical steps. This can be achieved through collaborations with IT departments, regular system updates, and the creation of an organizational culture that values technological advancements. Considering the mediating role of self-efficacy, strategies should be directed toward empowering individuals with the necessary skills and confidence. Professional development programs, workshops, and continuous training can contribute to enhancing self-efficacy, enabling individuals to navigate and utilize digital tools with confidence. Additionally, organizational leadership should recognize the importance of self-efficacy in the acceptance process. Initiatives aimed at recognizing and rewarding successful digital integration, providing mentorship, and creating a supportive community can further boost self-efficacy among employees. A comprehensive strategy that addresses performance expectations, effort expectations, and facilitating conditions while nurturing self-efficacy can pave the way for a successful digital transformation in OFDL higher education institutions. These strategies should align with the unique needs and challenges of the institution, fostering a culture of continuous learning and adaptability.

Theoretical Implications

The theoretical implications of the above study contribute significantly to the understanding of acceptance dynamics within Online Flexible Distance Learning (OFDL) higher education

settings. Firstly, the study reinforces the applicability and relevance of the Unified Theory of Acceptance and Use of Technology (UTAUT) framework in the context of digital transformation in education. By extending UTAUT to incorporate self-efficacy as a mediator, the study enriches the theoretical foundation, providing a more comprehensive model that captures the intricate relationships between facilitating conditions, performance expectations, effort expectations, self-efficacy, and acceptance. Moreover, the findings highlight the nuanced interplay between these variables, offering insights into the relative importance of each factor in influencing acceptance. The identification of self-efficacy as a crucial mediator emphasizes its role in shaping individuals' attitudes and behaviors toward technology acceptance. This aligns with Bandura's Social Cognitive Theory, reinforcing the importance of self-belief and confidence in determining one's ability to adapt to and utilize technological innovations. Additionally, the study's focus on OFDL higher education institutions extends the theoretical understanding of technology acceptance beyond traditional classroom settings. This expansion acknowledges the unique challenges and opportunities associated with digital transformation in distance learning, contributing to the broader discourse on technology acceptance in diverse educational contexts. Overall, the theoretical implications of this study advance the understanding of technology acceptance models, emphasizing the multifaceted nature of acceptance in the dynamic landscape of higher education.

Contextual Implications

The contextual implications of the above study are profound, especially within the realm of Online Flexible Distance Learning (OFDL) higher education. The findings provide practical insights that hold significant implications for administrators, educators, and policymakers navigating the digital transformation landscape in these institutions. The recognition of factors such as performance expectations, effort expectations, and facilitating conditions as influential determinants of technology acceptance underscores the importance of tailoring interventions to the unique context of OFDL. The study's focus on self-efficacy as a mediator introduces a contextual layer that acknowledges the psychological aspects of technology acceptance in a distance learning environment. This recognition suggests that strategies aimed at fostering individuals' confidence and belief in their ability to utilize digital tools effectively will play a pivotal role in enhancing overall acceptance. Moreover, the identification of effort expectancy as a critical influencer highlights the practical challenges associated with user experience and interface design in the context of OFDL. Context-specific efforts to simplify and streamline digital platforms, coupled with targeted support mechanisms, can significantly contribute to a positive user experience and, consequently, higher acceptance rates. In the broader context of higher education, particularly in the wake of global shifts towards online learning, the study's implications extend beyond OFDL institutions. The insights gained can inform technology integration strategies in various educational settings, promoting effective digital acceptance and improving the overall quality of the learning experience.

Practical Implications

The practical implications of the above study offer actionable insights for Online Flexible Distance Learning (OFDL) higher education institutions aiming to enhance technology acceptance among their stakeholders. Firstly, administrators and decision-makers can leverage the identified determinants, performance expectations, effort expectations, and

facilitating conditions—to inform strategic planning. Tailoring interventions that emphasize the benefits of digital tools, simplify user experiences, and ensure a supportive technological infrastructure can foster a more favorable environment for technology acceptance. Practically, educators can integrate these findings into their teaching methodologies by aligning digital tools with clear performance expectations. This involves articulating the benefits and outcomes of technology use in the learning process, encouraging active engagement, and providing adequate resources and support to address potential challenges. Additionally, the study underscores the significance of self-efficacy as a mediator, indicating that efforts to boost individuals' confidence in utilizing technology will have a direct impact on overall acceptance. Practical training programs, workshops, and ongoing professional development opportunities can empower educators and staff with the skills and confidence needed to navigate and integrate digital tools effectively. Furthermore, technology support teams within OFDL institutions can refine their services based on the study's insights, focusing on addressing user concerns related to effort expectancy and ensuring facilitating conditions are optimized for seamless technology acceptance. By translating these research findings into actionable strategies, OFDL institutions can pragmatically enhance their digital ecosystems, ultimately leading to improved technology acceptance and a more effective online learning experience.

Suggestions for Future Study

For future studies in the realm of technology acceptance within Online Flexible Distance Learning (OFDL) higher education, several avenues for research can be explored. Firstly, investigating the longitudinal impact of technology acceptance over an extended period would provide insights into the sustained effects and evolving challenges faced by stakeholders. Exploring the influence of cultural and contextual factors on technology acceptance in diverse educational settings could contribute to a more nuanced understanding. Additionally, delving into the specific strategies and interventions that effectively enhance self-efficacy in the context of OFDL could offer practical recommendations for institutions. Examining the evolving landscape of emerging technologies and their impact on acceptance within OFDL would also be valuable. Lastly, exploring the perspectives and experiences of students in technology acceptance processes could provide a holistic view of acceptance dynamics. Future studies embracing these directions can further enrich the field, providing actionable insights for educational practitioners and policymakers.

Conclusion

This study provides a comprehensive examination of the relationships among performance expectancy, effort expectancy, facilitating conditions, self-efficacy, and digital transformation acceptance within online distance learning higher education institutions in Malaysia. Leveraging a robust research methodology, including regression analysis and structural equation modeling, our findings confirm all direct relationship hypotheses and highlight the nuanced dynamics of acceptance in this specific context. Theoretical implications extend the understanding of acceptance theories, emphasizing multifaceted factors in online education. Moving forward, potential research directions involve exploring additional variables, conducting longitudinal studies, and investigating cultural influences on acceptance dynamics. This study significantly contributes to the evolving landscape of digital

transformation in online education, offering valuable insights for both practical implementation and policy formulation within higher education institutions.

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