



Promotion Of Open Educational Resources (OER) Utilization Among Academic Staff In Chinese Higher Education Institutions

Pei Zhang¹, Khunanan Sukpasjaroen^{2*}

¹Chakrabongse Bhuvanarth International Institute for Interdisciplinary Studies (CBIS), Rajamangala University of Technology Tawan-OK, Thailand. Email: pei.zha@rmutto.ac.th

^{2*}Chakrabongse Bhuvanarth International Institute for Interdisciplinary Studies (CBIS), Rajamangala University of Technology Tawan-OK, Thailand. Email: khunanan_su@rmutto.ac.th Corresponding author Khunanan Sukpasjaroen*

Citation: Khunanan Sukpasjaroen et al. (2024), Promotion Of Open Educational Resources (OER) Utilization Among Academic Staff In Chinese Higher Education Institutions, *Educational Administration: Theory and Practice*, 30(3), 899-915, Doi: 10.53555/kuey.v30i3.1399

ARTICLE INFO

ABSTRACT

This investigation explores the adoption of Open Educational Resources (OER) by educators, framed against the backdrop of advancing educational equity, a key objective of Sustainable Development Goal 4 (SDG4). Amidst the digital era's transformative impact on education, this study seeks to identify the determinants that influence educators' willingness to embrace OER, drawing on the Unified Theory of Acceptance and Use of Technology (UTAUT) and the Theory of Planned Behavior (TPB) for theoretical grounding. Adopting a quantitative approach, this study analyzes 487 valid questionnaires among Chinese private higher education institutions. Structural Equation Modeling (SEM) was employed to assess the interplay between performance expectancy, effort expectancy, social influence, facilitating conditions, attitude toward the behavior, perceived behavioral control, and their effects on educators' behavioral intention and actual usage of OER. The findings underscore the critical influence of performance expectancy, effort expectancy, social influence, and facilitating conditions on educators' intentions towards OER adoption. Additionally, the study highlights the mediating role of behavioral intention in the transition from attitudinal factors to the actual application of OER, emphasizing the centrality of educators' intentions in the adoption process. By synthesizing UTAUT and TPB within the OER context, this research enriches the scholarly understanding of technology acceptance models in education. It provides valuable implications for educational policymakers, institutions, and technology developers aiming to promote OER adoption, thereby contributing to the broader goal of achieving educational equity in the digital landscape.

Keywords: Open educational resources (OER), Technology acceptance, Educational equity, Unified theory of acceptance and use of technology (UTAUT), Structural equation modeling (SEM)

1. Introduction

Educational equity, a fundamental pillar of Sustainable Development Goal 4 (SDG4), has gained unprecedented attention in the discourse of the digital era, emphasizing the need for universal access to quality education (Altbach et al., 2019). In this context, regions with advanced educational infrastructures, including Europe, the United States, Japan, Singapore, and Hong Kong, have emerged as pioneers, demonstrating their commitment through initiatives aimed at resource sharing, fostering community-based higher education, and implementing digital campus projects (Tsiligiris & Ilieva, 2021; Voth Schrag et al., 2022; Xu et al., 2020). Parallely, China's strategic utilization of digital technologies in higher education has significantly contributed to narrowing the educational divide, showcasing commendable progress (Mei & Symaco, 2022). However, the persistence of disparities between private and public higher education institutions unveils a multifaceted scenario of inequality, characterized by challenges in digital access, technological proficiency, equitable resource distribution, and the implementation of personalized teaching methodologies and effective evaluation systems (Mok & Lo, 2007).

Addressing the digital divide in higher education requires a collaborative effort among various stakeholders, including governments, educational institutions, technology companies, and other relevant organizations (Van De Werfhorst et al., 2022; Williamson et al., 2020). This collective endeavor should concentrate on enhancing network infrastructure, promoting digital literacy, ensuring equitable resource distribution, and fostering the development of innovative personalized learning tools (Li et al., 2022; Sánchez-Cruzado et al., 2021). Simultaneously, the advent of OER represents a transformative opportunity for educational innovation, offering a viable solution to bridge the gap in educational resources and facilitate equal learning opportunities (Volungeviciene et al., 2020). Against this backdrop of digital transformation and policy initiatives, the evolving role of OER in promoting educational equity provides a critical lens through which to explore the intricate challenges and opportunities facing China's higher education landscape, especially the dichotomy between private and public institutions. Despite significant progress in leveraging digital technologies to enhance educational equality, the persistence of disparities between private and public higher education institutions in China underscores a multifaceted research problem. These disparities manifest through various dimensions, including access to digital resources, technological proficiency, and the quality and applicability of OER, further compounded by differences in institutional support, teacher training, and resource allocation (Kundu & Bej, 2021; Zhang et al., 2021). The effectiveness of OER in bridging these gaps is contingent upon teachers' perceptions, technological skills, and the level of institutional backing (Luo et al., 2020; Serrano et al., 2019; Tillinghast, 2021). This complex interplay of factors highlights the need for a comprehensive investigation into the barriers and facilitators influencing the adoption of digital and open educational resources in China's higher education, particularly within the context of private versus public universities.

The scholarly landscape surrounding OER within the realm of Chinese higher education has progressively expanded, focusing on both technological enhancements and pedagogical strategies to foster e-learning environments. Investigations have delved into the realms of technical support for creating e-learning platforms and the pedagogical underpinnings necessary for orchestrating effective online learning experiences. This includes innovative approaches like employing video image analysis to gauge and enhance student engagement in virtual classrooms. Despite these advancements, Zhu (2020) highlights a notable deficiency in the breadth and depth of OER research within China, particularly in pinpointing the determinants that sway teachers' adoption and effective application of OER. While a burgeoning corpus of research, including works by Hew and Cheung (2014) and McGreal (2017), has begun to unravel the complexities of teachers' acceptance and utilization of OER across various educational landscapes, the exploration into the dynamics of OER adoption by faculty within China's private higher education sector remains scant. This research void extends to a comprehensive understanding of the challenges and pedagogical impacts associated with OER integration in private universities, touching upon aspects such as instructional design, learner engagement, and educational outcomes. The extant literature has scarcely addressed the distinctive factors influencing OER acceptance in private educational settings, underscoring a pivotal research gap. This gap signifies the imperative for more nuanced investigations that amalgamate models of technology acceptance and behavioral intentions to decode the multifaceted influences on OER adoption in the context of China's private higher education institutions.

Addressing the identified research gaps necessitates a focused investigation into the multifaceted factors influencing the acceptance of OER by academic staff in private universities. This study aims to dissect and understand the myriad elements that drive or hinder the adoption of OER among this demographic, including the exploration of the willingness to accept OER as a potential mediating variable in various acceptance pathways. Additionally, it seeks to scrutinize the moderating roles of demographic characteristics and professional experience in shaping the OER acceptance behaviors of academic staff within private higher education settings. Drawing on these insights, the research will offer targeted recommendations to enhance the engagement with and utilization of OER among academic personnel, framed within the specific context of Chinese higher education institutions. The ultimate goal is to foster a broader acceptance and integration of OER, thereby contributing to the advancement of educational equity and resource accessibility in the realm of private higher education.

This study unfolds in a structured manner, initiating with a comprehensive literature review that lays the theoretical groundwork by examining the UTAUT and the TPB, highlighting their applicability to the adoption of OER by educators. It then delineates the research methodology, describing the quantitative strategy implemented for data gathering via an online survey and subsequent analysis through Structural Equation Modeling (SEM). Central to the research are the findings that illuminate the critical factors influencing educators' intentions to adopt OER and their actual use of these resources. The discussion integrates these insights with the broader academic context, providing a detailed interpretation of the outcomes. The conclusion underscores the study's academic and practical contributions, acknowledges its limitations, and proposes avenues for future inquiry. This methodical approach aims to contribute to the scholarly dialogue on educational technology adoption, with a focus on OER's potential to advance educational equity.

2. Literature review

2.1 Theoretical approach

The Unified Theory of Acceptance and Use of Technology (UTAUT) model, developed by Venkatesh et al. (2003), serves as a comprehensive framework for understanding and predicting technology acceptance and usage behaviors (Venkatesh et al., 2003). Integrating elements from various existing models, UTAUT posits four core constructs—performance expectations, effort expectations, social influence, and facilitating conditions—as pivotal in shaping individuals' behavioral intentions towards technology use (Williams et al., 2015). Additionally, it highlights the moderating roles of gender, age, experience, and voluntariness in influencing these relationships (Ijaz et al., 2022; Pal & Patra, 2021; Zhang et al., 2022). Empirical studies have validated the UTAUT model's efficacy in various contexts, demonstrating its utility in assessing user perceptions and informing strategies for technology implementation and adoption (Alghazi et al., 2020; Barrane et al., 2018). This model underscores the nuanced interplay between user expectations, social dynamics, and contextual facilitators in the technology acceptance process, offering valuable insights into the factors driving technology adoption across diverse demographic segments.

The Theory of Planned Behavior (TPB), developed by Ajzen (1985) and building upon the Theory of Reasoned Action (TRA) by Fishbein and Ajzen (1977), offers a robust framework for understanding and predicting voluntary human behavior through behavioral intentions. Central to TPB are three constructs: attitude towards the behavior, subjective norms, and perceived behavioral control, each directly influencing an individual's intention to engage in a behavior, which in turn, affects the likelihood of its performance (Ajzen, 1985). This theory, grounded in Subjective Utility Theory (Fischhoff et al., 2021), suggests that rational assessments of outcomes guide decision-making processes, further enhanced by considering the degree of control over the behavior (Fishbein & Ajzen, 2005). TPB has been applied across various domains, including higher education, to predict behaviors such as enrollment intentions (Pugh, 2018), student retention (Dewberry & Jackson, 2018), and faculty's adoption of e-Portfolios (Ahmed & Ward, 2016) and online teaching (Knabe, 2012; Lee et al., 2010). Despite its widespread application, Tipton (2020) notes limited use in understanding the adoption of OER in transforming higher education pedagogy, indicating potential areas for further exploration.

This study refines the UTAUT to assess OER acceptance, integrating the TPB to account for OER's unique characteristics and online learning behaviors. By adapting variables from both UTAUT and TPB, including performance expectations, effort expectations, social influence (aligned with TPB's subjective norm), facilitative conditions, attitude, and perceived behavioral control, the research constructs a nuanced model. Behavioral intention is central, mediated by gender, age, and experience, offering a comprehensive view of educators' engagement with OER, as per insights from Davis (1989), Taylor and Todd (1995), Kaye et al. (2020), and Abu-Taieh et al. (2022).

2.2 Hypothesis development

Drawing on the insights provided by Hilton III (2020), it is posited that teachers perceive the adoption of OER as a catalyst for enhancing pedagogical effectiveness. OER is recognized for its potential to diversify classroom materials, thereby enriching the educational experience, augmenting the attractiveness of instructional delivery, and fostering student engagement and interest (Moore and Reinsfelder, 2020). The utilization of OER affords educators access to an extensive array of materials, facilitating ongoing professional growth and the contemporization of instructional content and methodologies. Such professional development is instrumental in augmenting pedagogical skills and elevating the caliber of both teaching and learning. Furthermore, OER empowers educators to customize and refine their teaching strategies to accommodate the varied learning needs of their students, promoting a more inclusive and stimulating educational milieu. Moreover, the adoption of OER fosters collaborative and knowledge-sharing endeavors among educators, paving the way for the exchange of innovative pedagogical insights and practices. Leveraging OER is thus associated with enhanced instructional efficiency and superior student academic achievements. Consequently, this study posits the following hypothesis:

H1: Performance expectations positively influence teachers' acceptance of Open Educational Resources (OER).

H1a: Gender moderates the relationship between performance expectations and teachers' acceptance of OER.

H1b: Age moderates the relationship between performance expectations and teachers' acceptance of OER.

The adoption of OER by faculty in private universities is significantly influenced by the accessibility and usability of these resources (Mohamed & Hassan, 2023). A user-friendly interface and straightforward navigation within OER platforms or repositories are crucial factors that enhance teachers' likelihood of embracing and utilizing these resources (Nain, 2021). Furthermore, the provision of OER-related training and support by educational institutions or platforms plays a pivotal role in shaping teachers' effort expectations (Rajabalee et al., 2023). Systematic training initiatives designed to equip teachers with the knowledge and skills necessary for effective OER utilization are expected to foster a perception of feasibility and elevate effort expectations among

educators (Al-Mamary, 2022). Additionally, the level of technological literacy and digital competence among teachers directly affects their effort expectations concerning OER usage (Antonietti et al., 2022). Teachers with greater experience and higher digital competence are likely to demonstrate increased confidence in their ability to seamlessly integrate new educational resources into their teaching, thereby exhibiting higher effort expectations. Age-related differences among teachers may also influence their confidence in effectively employing OER and achieving desired educational outcomes, leading to varied effort expectations and willingness to dedicate time and energy to OER exploration and use. Based on these considerations, the study posits the following hypotheses:

H2: Effort Expectation (EE) positively affects teachers' acceptance of OER.

H2a: Gender moderates the relationship between Effort Expectation (EE) and teachers' acceptance of OER.

H2b: Age moderates the relationship between Effort Expectation (EE) and teachers' acceptance of OER.

H2c: Experience moderates the relationship between effortful expectancy (EE) and teachers' acceptance of OER.

The adoption of OER by teachers is significantly influenced by social factors, as highlighted by Mohammad-Salehi et al. (2021). The decision to utilize OER is often swayed by the attitudes and opinions of peers within the educational environment (Andrews et al., 2021). A general consensus among colleagues regarding the efficacy of OER in enhancing productivity and supporting teaching and research endeavors can lead to a higher propensity for OER adoption among educators (Tolba & Youssef, 2022). Furthermore, the collective endorsement of OER value by the academic and professional communities within the education sector serves as a strong motivational factor for teachers, encouraging them to align with industry standards and professional expectations. The implementation of policies and incentives by educational institutions or departments, aimed at promoting OER usage in private colleges and universities, not only legitimizes but also bolsters teachers' confidence and willingness to integrate OER into their pedagogical practices (Salloum et al., 2023). This policy-driven support underscores the importance of OER, providing educators with the necessary encouragement to actively engage with these resources. Based on the discussions, therefore, this study posits the following hypotheses:

H3: Social Influence (SI) positively influences teachers' acceptance of OER.

H3a: Gender moderates the relationship between social influence (SI) and teachers' acceptance of OER. H3b:

Experience moderates the relationship between social influence (SI) and teachers' acceptance of OER.

Facilitating conditions, as defined by Yu et al. (2021), refer to the external factors or support mechanisms that enhance users' ability to engage with OER, encompassing specialized technological infrastructure, technical assistance, professional development opportunities, and accessible instructional materials. The likelihood of OER adoption among private college educators is significantly impacted by the availability and quality of institutional resources and technological infrastructure provided by their respective schools (Mohamed & Hassan, 2023). Factors such as the level of digitalization, hardware capabilities, and network speed play crucial roles in ensuring efficient access to necessary digital resources for teaching and learning, thereby influencing teachers' inclination towards utilizing OER. Moreover, the interoperability of OER with prevalent software applications is a critical determinant of its usability (Ciftci et al., 2023). Effective integration and smooth operation with standard software applications facilitate easier management and deployment of OER, thereby encouraging its use among educators. Grounded in the discussion of the influence of facilitating conditions on the adoption of OER by teachers in private colleges, thus, this study posits the following hypothesis:

H4: Facilitating Conditioning (FC) positively influences teacher acceptance of OER.

H4a: Age moderates the relationship between enabling conditions (FC) and teacher acceptance of OER.

H4b: Experience moderates the relationship between enabling condition (FC) and teacher acceptance of OER.

In evaluating the influence of attitudes on the adoption of OER by educators, it is identified that a favorable attitude significantly bolsters the behavioral intention towards OER utilization Huang et al. (2020). This study delineates that educators' attitudes towards OER are molded by their comprehension of OER's essence, its benefits, practical application, and mechanisms ensuring quality, which in turn, promotes a propensity towards its acceptance (Aldammagh et al., 2021). Such attitudes are not merely a reflection of personal preference but are also contingent upon educators' perceptions regarding the effectiveness and potential outcomes associated with OER deployment (Pit-ten Cate & Glock, 2019). A negative disposition or absence of endorsement for OER can adversely influence these attitudes, thereby curtailing educators' inclination to employ OER in their pedagogical endeavors. Given these considerations, this study posits the following hypothesis:

H5: Attitude toward the Behaviour (ATB) positively influences teachers' acceptance of OER.

H5a: Age moderates the relationship between attitude toward the Behaviour (ATB) and teachers' acceptance of OER.

Perceived behavioral control, encompassing both internal and external dimensions, plays a significant role in shaping private college teachers' engagement with OER (Li, 2019). Internally, this involves teachers' self-assessment of their competencies, such as their ability to utilize information technology in teaching and to integrate various resources effectively (Anthonysamy et al., 2020). A positive self-perception of these competencies can enhance teachers' confidence in their ability to use OER effectively and foster a willingness to engage with these resources. Externally, perceived behavioral control is influenced by the teaching and learning environment, including the availability of technical equipment and support systems necessary for online teaching (Alhumaid et al., 2021). Teachers are more inclined to utilize OER when they perceive that their environment supports their competencies and meets the requirements for conducting online teaching. Based on these insights, the following hypothesis is proposed:

H6: Perceived Behavioral Control (PBC) positively influences teacher acceptance of OER.

This study scrutinizes the influence of behavioral intentions on Open Educational Resources (OER) acceptance, critiquing the Unified Theory of Acceptance and Use of Technology (UTAUT) model's emphasis on "usage behavior" as the sole outcome. Highlighting limitations in capturing the adoption process solely through behavioral intention—defined as the readiness to engage with OER—this research incorporates both "Behavioral Intention" and "Use Behavior" as outcome variables (Cao et al., 2021; Chao, 2019), offering a nuanced understanding of OER acceptance dynamics. Thus, this study proposes the following hypothesis:

H7: Behavioral intention (BI) positively influences teachers' acceptance of open educational resources (OER).

Teachers' perceptions of the potential of OER to enhance their instructional performance significantly influence their willingness to adopt and use these resources (Venkatesh et al., 2003). Performance expectations have been identified as a critical determinant of behavioral intentions towards technology use, with studies demonstrating its strong predictive power in both voluntary and mandatory contexts. For instance, a study in Africa involving 96 participants revealed that performance expectations markedly influenced teachers' adoption and utilization of OER in their instructional practices (Percy & Van Belle, 2012). Teachers are more likely to embrace OER if they find these resources facilitate more efficient, flexible, and effective teaching. Effort expectations, or the perceived ease of using OER, also play a pivotal role in their adoption, as underscored by the positive correlation between effort expectations and OER usage in various studies. Furthermore, the influence of subjective norms, or the perceived pressure from peers and institutional management to use OER, is recognized as a significant factor in technology acceptance models like TRA and TAM 2. The availability of organizational and technological support, termed facilitation by Venkatesh et al. (2003), is crucial for encouraging OER adoption. If teachers believe that their institution provides the necessary infrastructure and support, such as reliable internet access and the skills required for OER use, their propensity to incorporate OER into teaching and learning is expected to increase. Based on these considerations, this study proposes the following hypotheses:

H8: Behavioral intentions mediate the relationship between performance expectations and use behavior. H9: Behavioral intentions mediate the relationship between effort expectations and use behavior.

H10: Behavioral intention mediates the relationship between social influence and usage behavior. H11: Behavioral intention mediates the relationship between facilitating conditions and uses behavior. H12: Behavioral intention mediates the relationship between attitude and usage behavior.

H13: Behavioral intentions mediate the relationship between perceived behavioral control and use behavior.

3. Methodology

Adopting a quantitative methodology, this research conducted an online questionnaire survey among leading private higher education institutions in China, targeting the top ten. A mixed sampling strategy was implemented to distribute 786 questionnaires via Wenjuanxing, a prominent online survey platform in China, utilizing snowball and janitorial methods for distribution. Of the 553 questionnaires returned, 487 were considered valid for subsequent analysis. The study's analytical strategy was extensive, employing SPSS 26.0 and AMOS 26.0 software to perform a variety of statistical analyses, including tests for reliability and validity, descriptive statistical analysis, Confirmatory Factor Analysis (CFA), and Structural Equation Modeling (SEM) with path analysis. This rigorous approach allowed for a detailed examination of the data collected from the survey.

To measure the variables, this study collects data through a range of systematic structured scales with 5-point Likert:

To assess teachers' performance expectations regarding OER, Li and Zhao (2021) applied the UTAUT model to study the determinants behind the sustained use of MOOCs, emphasizing the significance of performance expectations. While their research primarily targeted students, it laid the groundwork for recognizing performance expectations as a crucial element in the acceptance of educational technologies. Similarly,

Alyoussef (2021) and Abu-Al-Aish and Love (2013) explored mobile learning acceptance, suggesting their findings could extend to faculty's adoption of OER. These studies collectively underscore the perceived benefits of OER adoption by faculty, such as enhanced utility, efficiency, opportunities for professional development, and support in achieving educational objectives.

To evaluate teachers' expectations for efforts to receive OER, studies by Alyoussef (2021), Li and Zhao (2021), and Abu-Al-Aish and Love (2013) provide foundational insights. These investigations, utilizing the UTAUT model, delve into the acceptance of mobile learning and MOOCs to shed light on the perceived ease and usefulness of OER adoption among faculty. Defined as the anticipated minimal effort required for effective engagement with OER, effort expectations encompass ease of learning, accessibility, straightforward interaction, and the clarity of the OER adoption process.

For the facilitation of OER among educators, Alyoussef (2021), Teo (2011), and Li and Zhao (2021) have collectively refined the UTAUT framework to include essential facilitating conditions for OER adoption. These conditions, critical for the acceptance by both faculty and students, encompass a comprehensive understanding of OER, ease of access to resources, the availability of support mechanisms, and a nurturing institutional environment. Such factors are fundamental in fostering the successful adoption and utilization of OER, underscoring the synergy between cognitive awareness, resource availability, support systems, and the educational institution's climate in promoting OER acceptance.

To assess the social influence on teachers' acceptance of OER, studies by Alyoussef (2021), Teo (2011), Abu-Al-Aish and Love (2013), and Li and Zhao (2021) have extended the UTAUT framework to incorporate social impact as a crucial factor. This approach highlights the role of social recognition, prestige, valued opinions, and institutional support in shaping teachers' decisions to adopt OER. Defined as the extent to which teachers perceive their adoption of OER as aligned with the expectations of influential peers and institutions, social influence underscores the significance of social factors in the acceptance and integration of OER into teaching practices.

To evaluate the enabling conditions for teachers' acceptance of OER, Alyoussef (2021), Teo (2011), and Li and Zhao (2021) enhance the UTAUT model to include factors critical to OER adoption. These conditions, defined as the combination of cognitive understanding, resource accessibility, support availability, and a conducive institutional climate, are essential for facilitating teachers' successful adoption and implementation of OER.

To assess teachers' attitudes towards OER, Tipton (2020), and Teo (2011) utilized the extended UTAUT model, focusing on attitudes, norms, and self-efficacy as key behavioral predictors. This approach highlights faculty recognition of OER's benefits, opportunities, and positive impacts on teaching, underlining the importance of attitudes in OER acceptance.

Evaluating perceived behavioral control of teacher in the context of OER acceptance, research by Tipton (2020) highlights the influence of attitudes, societal norms, and self-efficacy on their willingness to adopt OER. Here, self-efficacy emerges as a key element of perceived behavioral control, encapsulating the teachers' confidence in their ability to integrate OER into their instructional strategies. This dimension reflects the educators' self-assessment of their proficiency in effectively employing OER within their teaching practices.

In assessing teachers' behavioral intentions towards adopting OER, insights from Teo (2011) on the determinants of technology use in education and Alyoussef (2021) on the acceptance of mobile learning offer a foundation for gauging educators' readiness to integrate OER. This readiness is characterized by a clear inclination to persist with OER usage, intentions for future adoption, continuous application of OER, promotion of OER usage among peers, and a positive perspective on embedding OER within their instructional methodologies.

Investigating teacher engagement with OER, Alyoussef (2021) delved into the factors driving higher education students' acceptance of mobile learning, whereas Han (2022) explored the effects of online communities of practice on faculty's adoption of blended teaching methods through the lens of an enhanced UTAUT framework. Han's research underscored the critical influence of community support and additional UTAUT constructs on faculty attitudes towards OER adoption. These inquiries highlight the importance of factors such as acceptance, community support, and the applicability of the UTAUT model in understanding teacher behaviors towards OER. Behaviors indicative of teacher engagement with OER are characterized by consistent, active involvement, positive attitudes towards usage, and a commitment to ongoing improvement in the effective utilization of these educational resources.

Exploring teacher engagement with OER, Alyoussef (2021) examined the acceptance of mobile learning among higher education students, while Han (2022) assessed the impact of online communities on faculty's blended teaching adoption via an expanded UTAUT model. Han's findings emphasize community support and UTAUT elements as pivotal in shaping faculty's OER adoption attitudes. This research underscores the significance of acceptance, community support, and UTAUT's relevance in analyzing teacher behaviors towards OER, marked by continuous involvement, positive usage attitudes, and a dedication to enhancing OER utilization efficacy.

4. Findings

4.1 Descriptive analysis

Table 1. presents demographic and background information of the respondents involved in a study examining the adoption and use of Open Educational Resources (OER). The sample consists of 487 participants, with a slight majority being male (52.4%) compared to female (47.6%). The age distribution indicates a concentration in the middle age groups, with 37.4% of respondents aged between 31-40 years and 31.2% between 41-50 years, followed by 26.9% in the 21-30 years age group, and a small fraction (4.5%) aged 51 years and above.

In terms of educational attainment, the majority of respondents hold a Master's degree (72.9%), followed by those with a Doctoral Degree (17.5%), and a smaller percentage possessing a Bachelor's degree (9.7%). This distribution suggests a highly educated sample, likely reflective of an academic or professional population engaged with OER.

The experience with using OER among participants is varied, with a nearly even split between those with 1 year (34.7%) and 2 years (35.7%) of experience, and a slightly smaller group reporting more than 2 years of experience (29.6%). This indicates a relatively new engagement with OER across the sample, highlighting the growing interest and adoption of OER in recent years. The data provides insight into the demographic and educational background of individuals engaging with OER, which is crucial for understanding the dynamics of OER adoption and utilization within higher education and professional settings.

Table 1. Essential information

		Frequency	Percentage
Gender	Male	255	52.4
	Female	232	47.6
Age	21-30 years old	131	26.9
	31-40 years old	182	37.4
	41-50 years old	152	31.2
	51 years old and above	22	4.5
Highest degree or ongoing education	Bachelor's degree	47	9.7
	Master's degree	355	72.9
	Doctoral Degree	85	17.5
Experience using OER	1 year	169	34.7
	2 years	174	35.7
	More than 2 years	144	29.6

4.2 Reliability and validity analysis

Table 2. presents the reliability statistics of a questionnaire used in a study, with a Cronbach's Alpha value of .926 based on 45 items. This high Cronbach's Alpha indicates excellent internal consistency among the questionnaire items, suggesting that the scale is reliable for measuring the constructs of interest in the study. A value above .9 is generally considered to demonstrate superior reliability, implying that the items within the questionnaire consistently measure the same underlying concept.

Table 3. reports the results of the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity, tools used to assess the suitability of data for factor analysis. The KMO measure of .936 indicates an outstanding degree of sampling adequacy, suggesting that the dataset is well-suited for factor analysis since values closer to 1 are preferable, with .6 as the accepted minimum. Bartlett's Test of Sphericity shows a chi-square value of 11094.890 with 990 degrees of freedom and a significance level (Sig.) of .000, indicating that the variables are sufficiently correlated for factor analysis. The significance level below .05 rejects the null hypothesis that the correlation matrix is an identity matrix, further supporting the appropriateness of the data for factor analysis.

Table 2. Reliability Statistics

Cronbach's Alpha	N of Items
.926	45

Table 3. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.936
Bartlett's Test of Sphericity	Approx. Chi-Square	11094.890
	df	990
	Sig.	.000

4.3 Confirmatory factors analysis

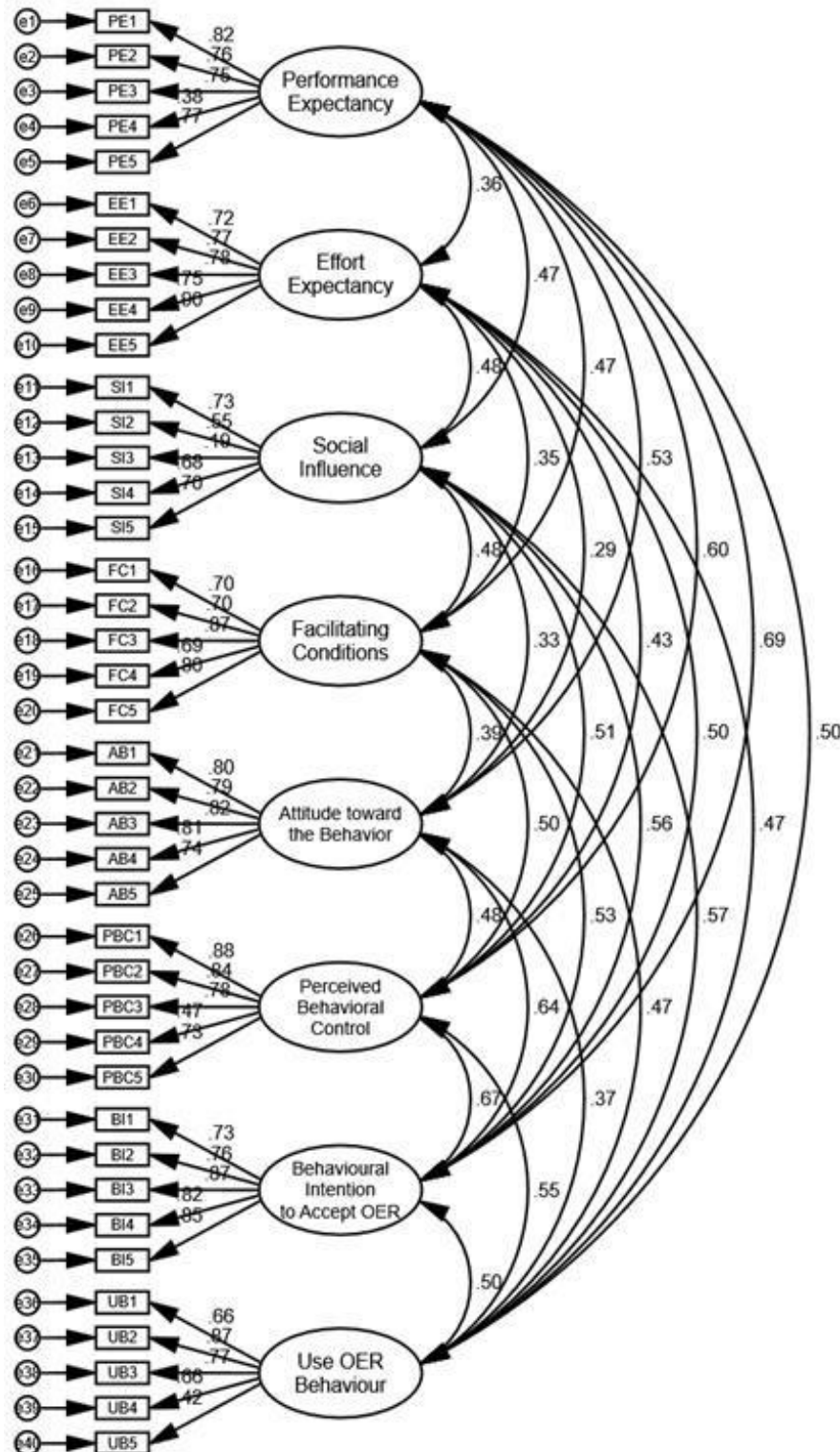


Figure 1. CAF for the structural model.

Table 4. indicates the fit indices from a Confirmatory Factor Analysis (CFA) model, comparing the obtained results against standard benchmarks for model fit. The chi-square to degrees of freedom ratio (χ^2/df) of 1.487 falls well below the standard threshold of 3, indicating a good fit between the model and the observed data. The Root Mean Square Error of Approximation (RMSEA) value of 0.032 is below the acceptable limit of 0.08, suggesting a close fit of the model with the data. The Goodness of Fit Index (GFI), Normed Fit Index (NFI), Incremental Fit Index (IFI), Tucker-Lewis Index (TLI), and Comparative Fit Index (CFI) all exceed the recommended value of 0.9, with scores of 0.917, 0.923, 0.974, 0.970, and 0.973, respectively. These indices collectively indicate an excellent fit of the CFA model to the data, demonstrating that the model accurately represents the underlying structure of the dataset.

Table Error! No text of specified style in document.. CFA Model Fit Summary

	χ^2/df	RMSEA	GFI	NFI	IFI	TLI	CFI
Standard	<3	<0.08	>0.9	>0.9	>0.9	>0.9	>0.9
Result	1.487	0.032	0.917	0.923	0.974	0.970	0.973

Table 5. presents the convergence validity of a study examining latent variables related to the acceptance and use of Open Educational Resources (OER). Convergence validity is assessed through factor loadings, Composite Reliability (CR), and Average Variance Extracted (AVE) for each latent variable, including Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Attitude toward the Behavior, Perceived Behavioral Control, Behavioral Intention to Accept OER, and Use OER Behavior.

Factor loadings, which represent the correlation between items and their underlying latent variables, range from 0.660 to 0.904 across different constructs, indicating strong associations. CR values, reflecting the reliability of the latent variables, are above the acceptable threshold of 0.7 for all constructs, suggesting high internal consistency. AVE values, measuring the amount of variance captured by the construct in relation to the variance due to measurement error, exceed the recommended minimum of 0.5 for most constructs, demonstrating adequate convergence validity.

These results indicate that the items strongly relate to their respective constructs, the constructs are reliably measured, and a significant portion of the variance in the observations is explained by the latent variables. This supports the model's validity in capturing the constructs of interest related to OER acceptance and use.

Table 5. Convergence Validity

Latent variables	Item	Factor loading	CR	AVE
Performance Expectancy	PE1	0.825	0.858	.602
	PE2	0.762		
	PE3	0.746		
	PE5	0.768		
	EE1	0.717		
Effort Expectancy	EE2	0.772	0.891	.621
	EE3	0.784		
	EE4	0.751		
	EE5	0.904		
	SI1	0.755		
Social Influence	SI4	0.699	0.756	.509
	SI5	0.684		
	FC1	0.698		
Facilitating Conditions	FC2	0.696	0.868	.569
	FC3	0.874		
	FC4	0.692		
	FC5	0.796		
	AB1	0.796		
Attitude toward the Behavior	AB2	0.788	0.895	.630
	AB3	0.824		
	AB4	0.815		
	AB5	0.744		
	PBC1	0.882		
Perceived Behavioral Control	PBC2	0.836	0.882	.653
	PBC3	0.778		
	PBC5	0.726		
Behavioral Intention to Accept OER	BI1	0.730	0.905	.657
	BI2	0.765		
	BI3	0.870		
	BI4	0.825		
	BI5	0.854		
	UB1	0.660		
	UB2	0.873		
Use OER Behaviour	UB3	0.765	0.833	.559
	UB4	0.672		

Table 6. showcases the discriminant validity of a study's latent variables, crucial for understanding the distinctiveness of constructs related to the acceptance and use of OER. Discriminant validity is evaluated by comparing the square root of the Average Variance Extracted (AVE) for each construct (diagonal values) with the correlations between constructs (off-diagonal values).

The diagonal elements, highlighted for clarity, represent the square root of the AVE for each latent variable, such as Performance Expectancy (0.776), Effort Expectancy (0.788), and so on, indicating the amount of variance captured by the construct from its indicators relative to the total variance. For discriminant validity to be established, these diagonal values should be larger than the off-diagonal values in their respective rows and columns, which represent the correlations between different constructs.

The table demonstrates that all diagonal values (square roots of AVEs) are greater than the off-diagonal values (correlations between constructs), confirming discriminant validity. This indicates that each construct is sufficiently distinct from the others, as the shared variance between a construct and its indicators is greater than the shared variance with other constructs. This distinctiveness supports the model's theoretical framework, suggesting that the constructs related to OER acceptance and use are well-defined and separate from one another within the study's context.

Table 6. Discriminant Validity

Latent variables	1	2	3	4	5	6	7	8
Performance Expectancy	00.776							
Effort Expectancy	00.335	00.788						
Social Influence	00.441	00.487	00.713					
Facilitating Conditions	00.467	00.345	00.391	00.754				
Attitude toward the Behavior	00.532	00.293	00.323	00.387	00.794			
Perceived Behavioral Control	00.585	00.431	00.473	00.490	00.459	00.808		
Behavioral Intention to Accept OER	00.684	00.496	00.547	00.527	00.639	00.657	00.811	
Use OER Behaviour	00.477	00.463	00.543	00.463	00.362	00.531	00.483	00.748

Note: The diagonal is the square root of the corresponding dimension AVE

4.4 Structural equation model

Table 7. delineates the fit indices from a Structural Equation Modeling (SEM) analysis, evaluating the model's fit to the empirical data. Acceptable fit criteria are juxtaposed with the obtained results. The chi-square to degrees of freedom ratio (χ^2/df) is considered acceptable when below 3; the observed value of 1.649 signifies an adequate fit. The Root Mean Square Error of Approximation (RMSEA) ideally should be less than 0.08; the reported value of 0.037 suggests a favorable model fit. Indices including the Goodness of Fit Index (GFI), Normed Fit Index (NFI), Incremental Fit Index (IFI), Tucker-Lewis Index (TLI), and Comparative Fit Index (CFI) are deemed satisfactory with values greater than 0.9. The results (GFI = 0.909, NFI = 0.914, IFI = 0.964, TLI = 0.960, CFI = 0.964) surpass these thresholds, indicating that the SEM model exhibits a commendable fit with the data, thereby validating the theoretical framework's applicability and robustness in explaining the observed phenomena.

Table 7. SEM Model Fit Summary

	χ^2/df	RMSEA	GFI	NFI	IFI	TLI	CFI
Standard	<3	<0.08	>0.9	>0.9	>0.9	>0.9	>0.9
Result	1.649	0.037	0.909	0.914	0.964	0.960	0.964

Table 8. presents the results of a Structural Equation Modeling (SEM) path analysis, testing hypotheses related to the factors influencing teachers' behavioral intention to accept and use Open Educational Resources (OER) and the subsequent impact on their actual OER usage behavior. The table outlines seven hypotheses (H1-H7), detailing the path from each construct to Behavioral Intention (BI) or from BI to Use OER Behavior (UB), along with the path coefficient estimates (β), standard errors (S.E.), critical ratios (C.R.), p-values (P), and the support status of each hypothesis.

The results indicate that all proposed hypotheses are supported. Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), Attitude toward the Behavior (AB), and Perceived Behavioral Control (PBC) all positively influence Behavioral Intention (BI) to accept OER, with path coefficients ranging from 0.100 to 0.278, and all paths are statistically significant. The strongest influence on BI is from Attitude toward the Behavior (AB), followed by Perceived Behavioral Control (PBC) and Performance Expectancy (PE), indicating that teachers' positive attitudes towards OER, their perceived control over OER usage, and their expectations of performance benefits from OER are crucial determinants of their intention to adopt OER.

Furthermore, Behavioral Intention (BI) significantly predicts the Use of OER Behavior (UB), with a path coefficient of 0.529, suggesting that a stronger intention to accept OER among teachers leads to higher actual use of OER in their teaching practices. This finding underscores the importance of addressing factors that enhance teachers' intentions to use OER as a means to promote actual OER usage.

Overall, the analysis confirms the significance of performance expectancy, effort expectancy, social influence, facilitating conditions, attitude, and perceived behavioral control in shaping teachers' intentions towards OER adoption and highlights the pivotal role of these intentions in driving actual OER usage behavior.

Table 8. Structural Equation Model Path Test Result

Hypothesis	Path	Estimate	β	S.E.	C.R.	P	Results
H1	PE→BI	0.238	0.264	0.044	5.387	***	Supported
H2	EE→BI	0.153	0.143	0.042	3.630	***	Supported
H3	SI→BI	0.130	0.150	0.040	3.243	0.001	Supported
H4	FC→BI	0.108	0.100	0.043	2.496	0.013	Supported
H5	AB→BI	0.275	0.278	0.042	6.573	***	Supported
H6	PBC→BI	0.163	0.206	0.037	4.419	***	Supported
H7	BI→UB	0.444	0.529	0.049	9.143	***	Supported

Note: PE: Performance Expectancy; BI: Behavioral Intention to Accept OER; UB: Use OER Behaviour; EE: Effort Expectancy; SI: Social Influence; FC: Facilitating Conditions; AB: Attitude toward the Behavior; PBC: Perceived Behavioral Control. ***: $p < 0.001$

Table 9. delineates the outcomes of a mediation analysis aimed at exploring the indirect influences of several antecedent variables on the utilization of Open Educational Resources (OER), mediated by the behavioral intention to accept OER (BI). This analytical framework assesses six distinct hypotheses (H8 to H13), each positing a mediation pathway from specific constructs—Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), Attitude toward the Behavior (AB), and Perceived Behavioral Control (PBC)—through BI, culminating in the Use OER Behavior (UB).

The table reports the effect size for each hypothesized mediation path, accompanied by the standard error (SE) to gauge the estimate's precision. Additionally, the Bias-Corrected 95% Confidence Interval (CI) is provided, delineating the range within which the true effect size is likely to fall with 95% certainty. The statistical significance of the mediation effects is confirmed across all hypotheses, as evidenced by confidence intervals that do not encompass zero.

The findings affirm the hypotheses (H8-H13), signifying that BI serves as a pivotal mediator in the relationship between each predictor (PE, EE, SI, FC, AB, PBC) and UB. Notably, the mediation effects are most pronounced for Performance Expectancy (H8) and Attitude toward the Behavior (H12). These results highlight the substantial impact of these factors on OER usage, mediated through behavioral intention.

This mediation analysis underscores the critical role of behavioral intention in the dynamic interplay between various determinants and the adoption of OER. By elucidating the pathways through which different factors exert their influence on OER usage behavior, the study contributes to a deeper understanding of the mechanisms driving OER adoption. The significant mediation effects observed across all tested paths reinforce the importance of fostering positive attitudes, perceptions, and conditions conducive to the acceptance and effective use of OER in educational settings.

Table 9. Mediation test

Hypothesis	Mediation path	Effectsize		Bias-Corrected		Results
			SE	95%CI		
H8	PE→BI→UB	0.140	0.028	0.086	0.200	Supported
H9	EE→BI→UB	0.076	0.023	0.034	0.124	Supported
H10	SI→BI→UB	0.079	0.027	0.032	0.137	Supported
H11	FC→BI→UB	0.053	0.023	0.011	0.100	Supported
H12	AB→BI→UB	0.147	0.024	0.102	0.196	Supported
H13	PBC→BI→UB	0.109	0.028	0.055	0.167	Supported

Note: PE: Performance Expectancy; BI: Behavioural Intention to Accept OER; UB: Use OER Behaviour; EE: Effort Expectancy; SI: Social Influence; FC: Facilitating Conditions; AB: Attitude toward the Behavior; PBC: Perceived Behavioral Control.

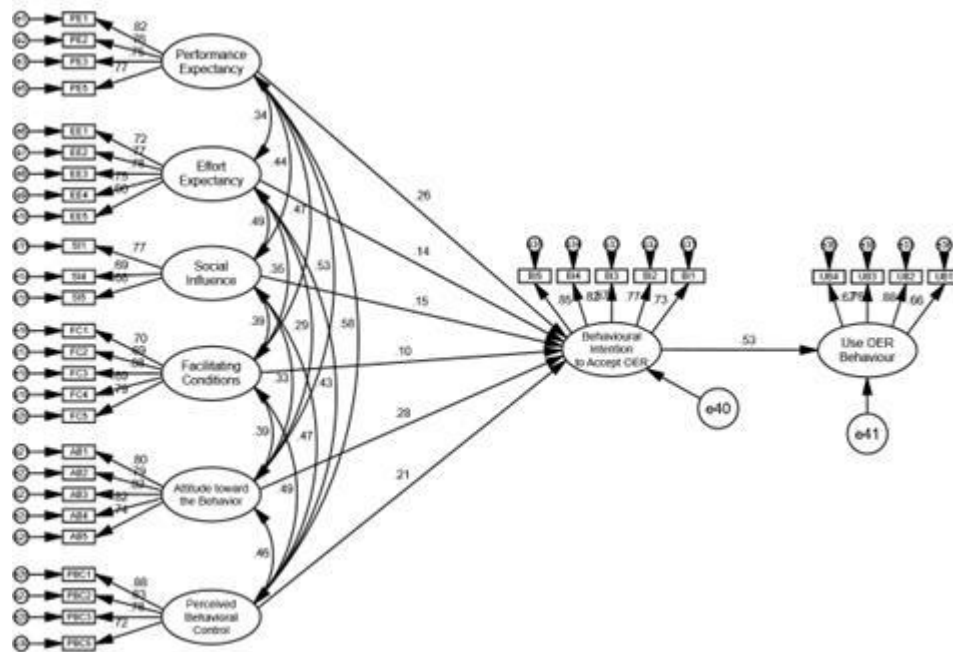


Figure 2. Structural equation model diagram

Figure 2. presents the relationship among performance expectancy, effort expectancy, social influence, facilitating conditions, attitude toward the behavior, perceived behavior control, behavioral intention to accept OER, and use OER behavior. In this way, this model identifies the mediation role of behavioral intention to accept OER.

5. Discussion and conclusion

The examination of path results from the structural equation modeling and the mediation analysis offers insightful revelations into the dynamics governing educators' adoption and use of open educational resources. The structural model path test delineates significant direct relationships between performance expectancy, effort expectancy, social influence, facilitating conditions, attitude toward the behavior, perceived behavioral control, and the behavioral intention to accept, which subsequently exerts a profound influence on the use behavior. Among these, attitude toward the behavior emerges as the most influential predictor of the behavioral intention to accept, followed by perceived behavioral control and performance expectancy, indicating the paramount importance of educators' attitudes and perceived efficacy regarding open educational resources in shaping their adoption intentions.

Further illumination is provided by the mediation test, which identifies the indirect influences of the aforementioned factors on the use behavior through the behavioral intention to accept, affirming the mediating role of behavioral intention. The mediation effects, particularly pronounced for attitude toward the behavior and performance expectancy, underscore the significance of cultivating favorable attitudes and enhancing performance expectations to encourage open educational resources utilization.

This comprehensive analysis affirms the applicability of the Unified Theory of Acceptance and Use of Technology within the open educational resources context, emphasizing a sophisticated interrelation of cognitive, motivational, and situational determinants in open educational resources adoption. The findings advocate for a dual focus on direct predictors of adoption intention and their indirect effects on usage behavior, offering a strategic blueprint for fostering broader engagement with open educational resources among the educational community.

5.1 Theoretical implications

This study enriches the theoretical landscape of technology acceptance by intricately weaving the Unified Theory of Acceptance and Use of Technology and the Theory of Planned Behavior with contemporary empirical evidence on educators' adoption of open educational resources. By meticulously analyzing the interrelations among key constructs of these theories within the context of open educational resources, this research not only validates existing theoretical propositions but also introduces nuanced pathways and mediators that extend these frameworks, offering a comprehensive understanding of technology acceptance in educational settings.

Firstly, the study reaffirms the centrality of performance expectancy and effort expectancy as pivotal determinants of educators' behavioral intentions towards Open Educational Resources, aligning with the findings of Sabri et al. (2022). This confirmation underscores the utility and ease of use as enduringly critical factors in technology adoption decisions, consistent with the core tenets of the Unified Theory of Acceptance and Use of Technology. However, by contextualizing these constructs within the domain of open educational resources, the study highlights the specific attributes of open educational resources that contribute to perceived performance and effort, such as accessibility, customization, and pedagogical relevance, thus deepening our understanding of how these expectations influence educators' adoption behaviors. Moreover, the significant role of social influence identified in this research echoes the observations of Wang et al. (2017), emphasizing the impact of social norms and peer perceptions. This study extends this insight by delineating the specific mechanisms through which social influence operates in the context of open educational resources adoption, including professional networks, institutional culture, and community practices around open educational resources. By doing so, it enriches the Unified Theory of Acceptance and Use of Technology model with a more granular understanding of social dynamics in educational technology acceptance.

A novel contribution of this research is the elucidation of the mediating role of behavioral intention between facilitating conditions and actual use behavior of open educational resources. This mediation pathway, suggested by Holden and Rada (2011), introduces a critical bridge between contextual supports and usage behaviors, thereby integrating the Theory of Planned Behavior's emphasis on behavioral intention with the Unified Theory of Acceptance and Use of Technology's focus on facilitating conditions. This finding not only validates the importance of institutional and technological infrastructure in supporting open educational resources adoption but also highlights the pivotal role of educators' intentions in translating these conditions into actual usage behaviors. Furthermore, the pronounced influence of attitude toward the behavior on behavioral intention, as observed in this study, supports the Theory of Planned Behavior's emphasis on attitudinal impacts and introduces specific emotional and cognitive evaluations related to open educational resources adoption. This aspect enriches the Unified Theory of Acceptance and Use of Technology framework by incorporating the affective and evaluative dimensions of technology acceptance, underscoring the complex interplay of beliefs, values, and perceptions in shaping educators' intentions towards open educational resources.

The impact of perceived behavioral control on behavioral intention, significant in our analysis, aligns with the findings of Raza et al. (2021), highlighting the importance of self-efficacy and resource availability. This study advances our understanding by exploring both direct and indirect effects of perceived behavioral control on open educational resources usage, thereby offering a nuanced view of how educators' perceptions of control influence their engagement with open educational Resources through both immediate and mediated pathways.

By integrating these insights with the contributions of recent scholars, this study not only reaffirms the foundational principles of the Unified Theory of Acceptance and Use of Technology and the Theory of Planned Behavior but also significantly expands these models. It introduces new mediators, delineates additional pathways, and contextualizes theoretical constructs within the specific domain of open educational resources adoption among educators. This enriched theoretical framework not only provides a more comprehensive understanding of the factors influencing technology acceptance in educational settings but also sets the stage for future research to explore the evolving dynamics of educator engagement with educational technologies. Through this integration and expansion of the Unified Theory of Acceptance and Use of Technology and the Theory of Planned Behavior, the study contributes to the ongoing development of technology acceptance theories, adapting them to the complexities and specificities of contemporary educational technology landscapes.

5.2 Practical implications

The findings of this study, which intricately weave the Unified Theory of Acceptance and Use of Technology and the Theory of Planned Behavior within the context of open educational resources adoption, carry significant managerial implications for various stakeholders in the educational ecosystem. By dissecting the direct and mediated pathways through which educators' intentions and behaviors towards online educational resources are shaped, this research offers actionable insights for policymakers, educational administrators, technology developers, and educators themselves.

The pronounced impact of performance expectancy and effort expectancy on behavioral intention underscores the necessity for policymakers and educational administrators to highlight the practical benefits and ease of use of online educational resources. Initiatives aimed at demonstrating the efficacy of online educational resources in enhancing teaching and learning outcomes, coupled with streamlined access and user-friendly interfaces, can significantly boost educators' willingness to adopt these resources. Furthermore, the role of facilitating conditions in influencing online educational resources use suggests that institutional support, in terms of both infrastructure and policy, is crucial. Investments in technological infrastructure, alongside the development of clear policies supporting online educational resources adoption and integration into curricula, can create an enabling environment for educators.

For developers and providers of online educational resources platforms, the findings emphasize the importance of designing with the end-user in mind. The significant role of effort expectancy highlights the need for intuitive, easy-to-navigate platforms that minimize the cognitive load on educators seeking to integrate online educational

resources into their teaching. Additionally, ensuring compatibility with existing educational technologies and providing robust support and training materials can address perceived behavioral control, enhancing educators' confidence in their ability to effectively use online educational resources.

Educators themselves stand to benefit from engaging with professional development opportunities that enhance their digital literacy and familiarity with online educational resources. The influence of attitude toward the behavior and perceived behavioral control on behavioral intention to accept indicates that educators' perceptions and self-efficacy play critical roles in online educational resource adoption. By actively participating in workshops, seminars, and online communities of practice, educators can improve their technological competencies, shift their attitudes positively towards online educational resource, and increase their perceived control over technology use in educational settings.

This study also highlights the importance of social influence in shaping educators' behavioral intentions towards online educational resource. This suggests that fostering a culture of collaboration and sharing within educational communities can amplify the adoption of online educational resource. Encouraging dialogue about the benefits and challenges of online educational resource, recognizing and rewarding innovative uses of online educational resource in teaching, and creating platforms for peer support can leverage social norms and perceptions to promote wider acceptance and use of online educational resource.

In conclusion, the managerial implications of this study span across the spectrum of stakeholders involved in the educational process, offering a roadmap for leveraging the synergies between technological affordances, institutional support, and individual attitudes and competencies to foster a conducive environment for the adoption of online educational resource. By addressing these key factors, stakeholders can work collaboratively to unlock the full potential of online educational resource in transforming educational practices and outcomes.

5.3 Conclusion

This investigation delves into the determinants of educators' adoption and use of open educational resources, employing the Unified Theory of Acceptance and Use of Technology and the Theory of Planned Behaviors foundational frameworks. The findings illuminate that performance expectancy, effort expectancy, social influence, facilitating conditions, attitude toward behavior, and perceived behavioral control are pivotal predictors of educators' intentions towards open educational resources adoption, which significantly influences their actual usage behaviors. The study notably elucidates the mediating function of behavioral intention in the relationship between these factors and open educational resources utilization, underscoring the critical role of intentionality in the adoption process.

This study contributes significantly to the scholarly discourse on technology acceptance in education. It enriches the theoretical landscape by validating the Unified Theory of Acceptance and Use of Technology and the Theory of Planned Behaviors models within the open educational resources context, highlighting the mediation by behavioral intention, and emphasizing the complex interplay of individual and contextual influences on educators' adoption behaviors. These insights not only deepen our theoretical understanding of technology adoption mechanisms but also offer practical guidance for fostering open educational resources integration in educational practices.

The scope of this study, centered on specific educational contexts, may restrict the broader applicability of its conclusions. Its cross-sectional approach also limits the ability to capture the dynamic nature of adoption behaviors over time. Additionally, the exclusion of certain variables, such as personal innovativeness or external pressures, suggests areas for further exploration.

These limitations present opportunities for future inquiries. Research extending across varied educational landscapes could enhance the external validity of these findings. Longitudinal designs would elucidate the temporal evolution of educators' perceptions and behaviors regarding open educational resources. Expanding the theoretical model to include additional predictors could uncover deeper insights into open educational resources adoption dynamics. Investigations into the role of institutional strategies in supporting open educational resources integration would further enrich our understanding of effective adoption practices.

In sum, this study propels forward our comprehension of the factors influencing open educational resources adoption among educators, bridging theoretical models with empirical evidence. It lays a foundation for strategic interventions to promote open educational resources utilization and opens avenues for future research to explore the multifaceted phenomenon of educational technology acceptance, aiming to broaden the impact and integration of open educational resources in teaching and learning environments.

Reference:

1. Abu-Al-Aish, A., & Love, S. (2013). Factors influencing students' acceptance of m-learning: An investigation in higher education. *International Review of Research in Open and Distributed Learning*, 14(5), 82-107. <https://doi.org/10.19173/IRRODL.V14I5.1631>
2. Abu-Taieh, E. M., AlHadid, I., Abu-Tayeh, S., Masa'deh, R. e., Alkhaldeh, R. S., Khwaldeh, S., & Alrowwad, A. a. (2022). Continued Intention to Use of M-Banking in Jordan by integrating UTAUT, TPB, TAM and Service Quality with ML. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(3), 120. <https://doi.org/10.3390/joitmc8030120>

3. Ahmed, E., & Ward, R. (2016). A comparison of competing technology acceptance models to explore personal, academic and professional portfolio acceptance behaviour. *Journal of Computers in Education*, 3, 169-191. <https://doi.org/10.1007/s40692-016-0058-1>
4. Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In *Action control: From cognition to behavior* (pp. 11-39). Springer.
5. Al-Mamary, Y. H. S. (2022). Understanding the use of learning management systems by undergraduate university students using the UTAUT model: Credible evidence from Saudi Arabia. *International Journal of Information Management Data Insights*, 2(2), 100092. <https://doi.org/10.1016/j.jjime.2022.100092>
6. Aldammagh, Z., Abdeljawad, R., & Obaid, T. (2021). Predicting mobile banking adoption: An integration of TAM and TPB with trust and perceived risk. *Financial Internet Quarterly*, 17(3), 35-46. <https://doi.org/10.2139/ssrn.3761669>
7. Alghazi, S. S., Wong, S. Y., Kamsin, A., Yadegaridehkordi, E., & Shuib, L. (2020). Towards sustainable mobile learning: A brief review of the factors influencing acceptance of the use of mobile phones as learning tools. *Sustainability*, 12(24), 10527. <https://doi.org/10.3390/su122410527>
8. Alhumaid, K., Habes, M., & Salloum, S. A. (2021). Examining the factors influencing the mobile learning usage during COVID-19 Pandemic: An Integrated SEM-ANN Method. *Ieee Access*, 9, 102567- 102578. <https://doi.org/10.1109/ACCESS.2021.3097753>
9. Altbach, P. G., Reisberg, L., & Rumbley, L. E. (2019). *Trends in global higher education: Tracking an academic revolution* (Vol. 22). Brill.
10. Alyoussef, I. Y. (2021). Factors Influencing Students' Acceptance of M-Learning in Higher Education: An Application and Extension of the UTAUT Model. *Electronics*, 10(24), 3171. <https://doi.org/10.3390/electronics10243171>
11. Andrews, J. E., Ward, H., & Yoon, J. (2021). UTAUT as a model for understanding intention to adopt AI and related technologies among librarians. *The Journal of Academic Librarianship*, 47(6), 102437. <https://doi.org/10.1016/j.acalib.2021.102437>
12. Anthonysamy, L., Koo, A. C., & Hew, S. H. (2020). Self-regulated learning strategies in higher education: Fostering digital literacy for sustainable lifelong learning. *Education and Information Technologies*, 25, 2393-2414. <https://doi.org/10.2991/ICHSSR-19.2019.10>
13. Antonietti, C., Cattaneo, A., & Amenduni, F. (2022). Can teachers' digital competence influence technology acceptance in vocational education? *Computers in Human Behavior*, 132, 107266. <https://doi.org/10.1016/j.chb.2022.107266>
14. Barrane, F. Z., Karuranga, G. E., & Poulin, D. (2018). Technology adoption and diffusion: A new application of the UTAUT model. *International Journal of Innovation and Technology Management*, 15(06), 1950004. <https://doi.org/10.1142/S0219877019500044>
15. Cao, G., Duan, Y., Edwards, J. S., & Dwivedi, Y. K. (2021). Understanding managers' attitudes and behavioral intentions towards using artificial intelligence for organizational decision- making. *Technovation*, 106, 102312. <https://doi.org/10.1016/J.TECHNOVATION.2021.102312>
16. Chao, C.-M. (2019). Factors determining the behavioral intention to use mobile learning: An application and extension of the UTAUT model. *Frontiers in Psychology*, 10, 1652. <https://doi.org/10.3389/fpsyg.2019.01652>
17. Ciftci, S. K., Gok, R., & Karadag, E. (2023). Acceptance and use of the distance education systems of Turkish medical educators during COVID-19 pandemic: an analysis of contextual factors with the UTAUT2. *BMC Medical Education*, 23(1), 1-12. <https://doi.org/10.1186/s12909-023-04024-7>
18. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, 319-340. <https://doi.org/10.2307/249008>
19. Dewberry, C., & Jackson, D. J. (2018). An application of the theory of planned behavior to student retention. *Journal of Vocational Behavior*, 107, 100-110. <https://doi.org/10.1016/J.JVB.2018.03.005>
20. Fischhoff, B., Goitein, B., & Shapira, Z. (2021). The experienced utility of expected utility approaches. In *Expectations and actions* (pp. 315-339). Routledge.
21. Fishbein, M., & Ajzen, I. (1977). Belief, attitude, intention, and behavior: An introduction to theory and research. In.
22. Fishbein, M., & Ajzen, I. (2005). Theory-based behavior change interventions: Comments on Hobbis and Sutton. *Journal of health psychology*, 10(1), 27-31. <https://doi.org/10.1177/1359105305048552>
23. Han, X. (2022). Influences of Online Practice Community on Instructors' Blended Teaching Behaviors: Analysis Based on an Extended UTAUT Model. *Mathematical Problems in Engineering*, 2022. <https://doi.org/10.1155/2022/7084272>
24. Hew, K. F., & Cheung, W. S. (2014). Students' and instructors' use of massive open online courses (MOOCs): Motivations and challenges. *Educational research review*, 12, 45-58. <https://doi.org/10.1016/J.EDUREV.2014.05.001>
25. Hilton III, J. (2020). Open educational resources, student efficacy, and user perceptions: A synthesis of research published between 2015 and 2018. *Educational Technology Research and Development*, 68(3), 853-876. <https://doi.org/10.1007/s11423-019-09700-4>

26. Holden, H., & Rada, R. (2011). Understanding the influence of perceived usability and technology self-efficacy on teachers' technology acceptance. *Journal of Research on Technology in Education*, 43(4), 343-367. <https://doi.org/10.1080/15391523.2011.10782576>
27. Huang, R., Tlili, A., Chang, T.-W., Zhang, X., Nascimbeni, F., & Burgos, D. (2020). Disrupted classes, undisrupted learning during COVID-19 outbreak in China: application of open educational practices and resources. *Smart Learning Environments*, 7, 1-15. <https://doi.org/10.1186/s40561-020-00125-8>
28. Ijaz, K., Tran, T. T. M., Kocaballi, A. B., Calvo, R. A., Berkovsky, S., & Ahmadpour, N. (2022). Design considerations for immersive virtual reality applications for older adults: a scoping review. *Multimodal Technologies and Interaction*, 6(7), 60. <https://doi.org/10.3390/mti6070060>
29. Kaye, S.-A., Lewis, I., Forward, S., & Delhomme, P. (2020). A priori acceptance of highly automated cars in Australia, France, and Sweden: A theoretically-informed investigation guided by the TPB and UTAUT. *Accident Analysis & Prevention*, 137, 105441. <https://doi.org/10.1016/j.aap.2020.105441>
30. Knabe, A. P. (2012). Applying Ajzen's theory of planned behavior to a study of online course adoption in public relations education. Marquette University.
31. Kundu, A., & Bej, T. (2021). Ingestion and integration of ICTs for pedagogy in Indian private high schools. *E-learning and Digital Media*, 18(2), 163-184. <https://doi.org/10.1177/2042753020957493>
32. Lee, J., Cerreto, F. A., & Lee, J. (2010). Theory of planned behavior and teachers' decisions regarding use of educational technology. *Journal of Educational Technology & Society*, 13(1), 152-164.
33. Li, P., Fang, Z., & Jiang, T. (2022). Research Into improved Distance Learning Using VR Technology. *Frontiers in Education*,
34. Li, Y. (2019). MOOCs in higher education: opportunities and challenges. 2019 5th international conference on humanities and social science research (ICHSSR 2019),
35. Li, Y., & Zhao, M. (2021). A study on the influencing factors of continued intention to use MOOCs: UTAUT model and CCC moderating effect. *Frontiers in Psychology*, 12, 528259. <https://doi.org/10.3389/fpsyg.2021.528259>
36. Luo, T., Hostetler, K., Freeman, C., & Stefaniak, J. (2020). The power of open: Benefits, barriers, and strategies for integration of open educational resources. *Open Learning: The Journal of Open, Distance and e-Learning*, 35(2), 140-158. <https://doi.org/10.1080/02680513.2019.1677222>
37. McGreal, R. (2017). Special report on the role of open educational resources in supporting the sustainable development goal 4: Quality education challenges and opportunities. *The International Review of Research in Open and Distributed Learning*, 18(7). <https://doi.org/10.19173/IRRODL.V18I7.3541>
38. Mei, W., & Symaco, L. (2022). University-wide entrepreneurship education in China's higher education institutions: Issues and challenges. *Studies in Higher Education*, 47(1), 177-193. <https://doi.org/10.1080/03075079.2020.1735330>
39. Mohamed, M. J., & Hassan, S. A. (2023). Studying the Factors that Influence the Adoption of Educational Technology in Mogadishu Secondary Schools Using UTAUT Model. *International Journal of Information and Education Technology*, 13(7). <https://doi.org/10.18178/ijiet.2023.13.7.1906>
40. Mohammad-Salehi, B., Vaez-Dalili, M., & Heidari Tabrizi, H. (2021). Investigating EFL Teachers' Adoption of Web 2.0 Technologies: Evidence from Applying the UTAUT and TPACK. *TESL-EJ*, 25(1), n1.
41. Mok, K. H., & Lo, Y. W. (2007). The impacts of neo-liberalism on China's higher education. *Journal for Critical Education Policy Studies*, 5(1), 316-348.
42. Moore, J., & Reinsfelder, T. (2020). Current usage patterns of open educational resources in the engineering mechanics classroom and barriers to adoption. *Issues in Science and Technology Librarianship*(95). <https://doi.org/10.29173/ISTL65>
43. Nain, H. (2021). Understanding Students' Behavioural Intentions To Use Social Media Learning In Education: A Utaut Model Approach. 2021 International Conference on Computational Performance Evaluation (ComPE),
44. Pal, D., & Patra, S. (2021). University students' perception of video-based learning in times of COVID-19: A TAM/TTF perspective. *International Journal of Human-Computer Interaction*, 37(10), 903-921. <https://doi.org/10.1080/10447318.2020.1848164>
45. Percy, T., & Van Belle, J.-P. (2012). Exploring the barriers and enablers to the use of open educational resources by university academics in Africa. *IFIP International Conference on open source systems*,
46. Pit-ten Cate, I. M., & Glock, S. (2019). Teachers' implicit attitudes toward students from different social groups: A meta-analysis. *Frontiers in Psychology*, 10, 2832. <https://doi.org/10.3389/fpsyg.2019.02832>
47. Rajabalee, Y. B., Jugurnath, B., & Santally, M. I. (2023). Educator Perspectives and Intention to Adopt OER in Teaching and Learning in Secondary Schools in Mauritius. *Journal of Learning for Development*, 10(2), 149-176. <https://doi.org/10.56059/jl4d.v10i2.824>
48. Raza, S. A., Qazi, W., Khan, K. A., & Salam, J. (2021). Social isolation and acceptance of the learning management system (LMS) in the time of COVID-19 pandemic: an expansion of the UTAUT model. *Journal of Educational Computing Research*, 59(2), 183-208. <https://doi.org/10.1177/0735633120960421>
49. Sabri, S., Gani, A., Yadegaridehkordi, E., Othman, S., Miserom, F., & Shuib, L. (2022). A framework for mobile learning acceptance amongst formal part-time learners: From the andragogy perspective. *Ieee Access*, 10, 61213-61227. <https://doi.org/10.1109/ACCESS.2022.3178718>

50. Salloum, S., Al Marzouqi, A., Alderbashi, K. Y., Shwede, F., Aburayya, A., Al Saidat, M. R., & Al- Maroof, R. S. (2023). Sustainability Model for the Continuous Intention to Use Metaverse Technology in Higher Education: A Case Study from Oman. *Sustainability*, 15(6), 5257. <https://doi.org/10.3390/su15065257>
51. Sánchez-Cruzado, C., Santiago Campión, R., & Sánchez-Compañía, M. T. (2021). Teacher digital literacy: The indisputable challenge after COVID-19. *Sustainability*, 13(4), 1858. <https://doi.org/10.3390/SU13041858>
52. Serrano, D. R., Dea-Ayuela, M. A., Gonzalez-Burgos, E., Serrano-Gil, A., & Lalatsa, A. (2019). Technology-enhanced learning in higher education: How to enhance student engagement through blended learning. *European Journal of Education*, 54(2), 273-286. <https://doi.org/10.1111/EJED.12330>
53. Taylor, S., & Todd, P. (1995). Decomposition and crossover effects in the theory of planned behavior: A study of consumer adoption intentions. *International journal of research in marketing*, 12(2), 137-155. [https://doi.org/10.1016/0167-8116\(94\)00019-K](https://doi.org/10.1016/0167-8116(94)00019-K)
54. Teo, T. (2011). Factors influencing teachers' intention to use technology: Model development and test. *Computers & Education*, 57(4), 2432-2440. <https://doi.org/10.1016/j.compedu.2011.06.008>
55. Tillinghast, B. (2021). Using a technology acceptance model to analyze faculty adoption and application of open educational resources. *The International Journal of Open Educational Resources*, 4(1).
56. Tipton, J. (2020). Faculty use of open educational resources: Attitudes, norms, and self-efficacy as behavioral predictors The University of Mississippi].
57. Tolba, E. G., & Youssef, N. H. (2022). High school science teachers' acceptance of using distance education in the light of UTAUT. *EURASIA Journal of Mathematics, Science and Technology Education*, 18(9), em2152. <https://doi.org/10.29333/ejmste/12365>
58. Tsiligris, V., & Ilieva, J. (2021). Globally engaged and locally relevant: Revisiting higher education. *International Higher Education*(106), 13-14. <https://doi.org/10.36197/IHE.2021.106.00>
59. Van De Werfhorst, H. G., Kessenich, E., & Geven, S. (2022). The digital divide in online education: Inequality in digital readiness of students and schools. *Computers and Education Open*, 3, 100100. <https://doi.org/10.1016/j.caeo.2022.100100>
60. Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425-478. <https://doi.org/10.2307/30036540>
61. Volungeviciene, A., Tereseviciene, M., & Ehlers, U.-D. (2020). When Is Open and Online Learning Relevant for Curriculum Change in Higher Education? Digital and Network Society Perspective. *Electronic journal of e-Learning*, 18(1), 88-101. <https://doi.org/10.34190/ejel.20.18.1.007>
62. Voth Schrag, R., Hairston, D., Brown, M. L., & Wood, L. (2022). Advocate and survivor perspectives on the role of technology in help seeking and services with emerging adults in higher education. *Journal of family violence*, 37(1), 123-136. <https://doi.org/10.1007/s10896-021-00279-0>
63. Wang, C.-S., Jeng, Y.-L., & Huang, Y.-M. (2017). What influences teachers to continue using cloud services? The role of facilitating conditions and social influence. *The Electronic Library*, 35(3), 520-533. <https://doi.org/10.1108/EL-02-2016-0046>
64. Williams, M. D., Rana, N. P., & Dwivedi, Y. K. (2015). The unified theory of acceptance and use of technology (UTAUT): a literature review. *Journal of enterprise information management*, 28(3), 443-488. <https://doi.org/10.1108/JEIM-09-2014-0088>
65. Williamson, B., Eynon, R., & Potter, J. (2020). Pandemic politics, pedagogies and practices: digital technologies and distance education during the coronavirus emergency. In (Vol. 45, pp. 107- 114): Taylor & Francis.
66. Xu, X., Sit, H. H. W., & Chen, S. (2020). *The Eastern Train on the Western Track*. Springer.
67. Yu, C.-W., Chao, C.-M., Chang, C.-F., Chen, R.-J., Chen, P.-C., & Liu, Y.-X. (2021). Exploring behavioral intention to use a mobile health education website: An extension of the utaut 2 model. *SAGE Open*, 11(4), 21582440211055721. <https://doi.org/10.1177/21582440211055721>
68. Zhang, B., Ali, K., & Kanesan, T. (2022). A model of extended technology acceptance for behavioral intention toward EVs with gender as a moderator. *Frontiers in Psychology*, 13, 1080414. <https://doi.org/10.3389/fpsyg.2022.1080414>
69. Zhang, M., Tian, J., Ni, H., & Fang, G. (2021). Exploring teacher leadership and the factors contributing to it: An empirical study on Chinese private higher education institutions. *SAGE Open*, 11(1), 21582440211002175. <https://doi.org/10.1177/21582440211002175>
70. Zhu, J. (2020). Emerging Trends in OER Studies in China (2001-2019)—A Scientometric Analysis on CiteSpace. *European Distance and E-Learning Network (EDEN) Conference Proceedings*,