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ANALYSIS OF INSTITUTIONAL REPOSITORY USE BY STUDENTS AT PUBLIC UNIVERSITIES IN BALI

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Abstract
Institutional repositories (IRs) preserve and disseminate academic work, yet student utilization in higher education remains sub-optimal due to technical, cognitive, and environmental factors. This study analyzes the determinants of student acceptance and use of IRs across public universities in Bali using the Unified Theory of Acceptance and Use of Technology (UTAUT) framework. A quantitative survey approach was employed with a sample of 120 active students selected through proportionate purposive sampling across seven public universities in Bali. Data were analyzed using multiple linear regression in IBM SPSS Statistics. The findings demonstrate that Performance Expectancy significantly shapes Behavioral Intention ($\beta=0.698, p<0.001$), whereas Effort Expectancy, Social Influence, and Facilitating Conditions do not directly impact intention. However, both Facilitating Conditions ($\beta=0.495, p<0.001$) and Behavioral Intention ($\beta=0.285, p=0.002$) exert direct, positive, and significant influences on actual Use Behavior. Academic usefulness drives student intention, whereas enabling infrastructure directly sustains actual use behavior.

Keywords: Institutional repository; UTAUT model; Technology acceptance; Information utilization; Public universities

INTRODUCTION

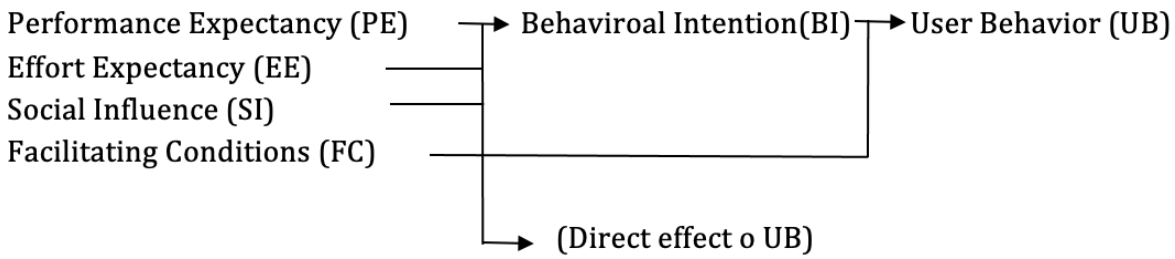
Information technology developments have transformed how higher education institutions manage, store, and disseminate scholarly works (Nugraha et al., 2025; Tenopir et al., 2017). Institutional Repositories (IRs) serve as core digital platforms collecting, preserving, and distributing scholarly literature produced by academic communities (Lwoga & Questier, 2014; Rifai, 2023). IRs enhance institutional research visibility, accelerate scholarly communication, and promote open-access scholarly principles (Björk, 2017; Jamali & Nabavi, 2015). Despite these benefits, student engagement with IRs remains sub-optimal due to cognitive, technical, and institutional constraints (Jaradat & Banikhaled, 2021; Masawe et al., 2024). In Bali, public higher education institutions have established IR systems. However, student information-seeking behavior frequently favors general commercial search engines

over official institutional repositories (Kurbanoğlu et al., 2019; Matusiak, 2012). This gap highlights the need to systematically evaluate factors determining repository adoption and actual usage behavior across varied academic platforms.

Despite the strategic importance and substantial infrastructure investments committed to digital repository platforms, student utilization of institutional repositories in higher education environments remains sub-optimal. Empirical literature highlights that low utilization rates of academic digital systems often stem from complex interactions between user cognitive evaluations, technical interface usability, information literacy gaps, and organizational support structures (Jaradat & Banikhaled, 2021; Masawe et al., 2024). In the Bali province, public higher education institutions have progressively implemented digital institutional repositories to establish an integrated digital academic climate. Although network servers, digital databases, and web-based search engines are provided across campuses, information-seeking behavioral dynamics among students in Bali reveal a persistent disconnect between digital document availability and actual usage intensity. The operational accessibility of repository platforms in Bali faces distinct structural challenges, including uneven digital information literacy skills among undergraduate students, technical hurdles in retrieving full-text files, and entrenched reference-seeking habits that heavily favor general commercial search engines over official institutional repository portals (Kurbanoğlu et al., 2019; Matusiak, 2012).

Addressing low student repository usage requires a robust theoretical framework capable of explaining technology acceptance dynamics. To evaluate these determinants, this study adopts the Unified Theory of Acceptance and Use of Technology (UTAUT) framework (Venkatesh et al., 2003). UTAUT posits that technology acceptance is driven by four key constructs: Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Conditions (FC). While PE, EE, and SI directly influence Behavioral Intention (BI), FC and BI act as direct predictors of actual Use Behavior (UB) (Venkatesh et al., 2003; Venkatesh et al., 2016). Repository research typically focuses on system management, usability levels, or user information-seeking behavior within a single institution (Utami, 2025). However, empirical evaluations examining multiple public universities under a unified conceptual framework remain limited. Rather than assessing simple usage frequencies, this research presents novelty by comprehensively investigating the structural factors determining student acceptance and actual usage behavior across seven public higher education institutions in Bali.

Conceptual Model :



In Indonesian higher education contexts, technology acceptance studies employing the UTAUT model have been widely conducted across general e-learning portals, mobile learning applications, and administrative management systems (Arif & Yaya, 2025; Putra & Anggraeni, 2024; Tarigan et al., 2025). However, empirical evaluations specifically examining student institutional repository adoption across multi-institutional university systems remain scarce,

particularly in regional academic environments such as Bali (Utami, 2025). Most existing repository studies focus on isolated single-institution user perceptions or focus purely on descriptive system management without rigorously testing the structural relationships governing user behavioral mechanics (Almajali et al., 2022; Mulyadi & Arifin, 2024). Furthermore, while technology adoption models assume that sustained system usage is driven by cognitive efficiency evaluations, technology adoption in academic digital libraries is frequently accompanied by resistance arising from interface mismatches, access restrictions, or cognitive adaptation barriers (McCall, 2025).

To address these empirical and theoretical gaps, this study presents key novel contributions. First, it provides a comprehensive quantitative evaluation of student institutional repository acceptance and actual usage behavior grounded strictly in the UTAUT structural framework. Second, by covering seven distinct public higher education institutions across Bali Province, this research captures broad regional empirical insights into repository engagement patterns across varied academic environments. Third, it bridges technology acceptance literature with information science concepts, offering actionable strategic recommendations for university library managers to optimize digital service delivery and repository engagement.

To guide the empirical investigation, six operational hypotheses are explicitly formulated based on the structural paths of the UTAUT framework (Venkatesh et al., 2003). First, H1 posits that Performance Expectancy exerts a positive and significant effect on student Behavioral Intention to use institutional repositories. Second, H2 assumes that Effort Expectancy exerts a positive and significant effect on student Behavioral Intention to use institutional repositories. Third, H3 predicts that Social Influence exerts a positive and significant effect on student Behavioral Intention to use institutional repositories. Fourth, H4 states that Facilitating Conditions exert a positive and significant effect on student Behavioral Intention to use institutional repositories. Fifth, H5 hypothesizes that Facilitating Conditions exert a direct, positive, and significant effect on actual student Use Behavior regarding institutional repositories. Finally, H6 expects that Behavioral Intention exerts a direct, positive, and significant effect on actual student Use Behavior regarding institutional repositories.

RESEARCH METHOD

This research adopts a quantitative survey design utilizing an explanatory approach to systematically measure operational constructs and statistically test structural inter-variable relationships (Yakin, 2023). The target population comprises active enrolled students across public higher education institutions in Bali Province who utilize institutional repository platforms for academic reference searches and scientific literature retrieval. Public universities in Bali exhibit diverse technological infrastructure capacities, digital collection sizes, and academic library service environments, necessitating comprehensive population mapping to ensure empirical representativeness. During initial research planning, an exhaustive inventory identified ten operating public higher education institutions in Bali Province maintaining digital databases or web-based repository systems. Following preliminary qualification verification based on predefined inclusion criteria, comprising public search accessibility, active platform status in recent academic terms, and field data collection feasibility, seven public institutions satisfied all qualification standards: Universitas Udayana, Universitas Pendidikan Ganesha, Institut Seni Indonesia Denpasar, Politeknik Kesehatan Kemenkes Denpasar, Universitas Hindu Negeri I Gusti Bagus Sugriwa, Politeknik Transportasi Darat Bali, and Politeknik Negeri Bali.

Student sample selection across the seven qualified public institutions utilized a non-probability sampling design combining purposive sampling and proportionate sampling techniques (Naufa et al., 2025). Purposive sampling criteria ensured that all selected student respondents met specific inclusion qualifications: active enrolled undergraduate or diploma students who had actively accessed their campus institutional repository for academic purposes (such as final project literature searches, undergraduate thesis preparation, or scientific paper assignments) within the preceding six months. Students participated strictly as study respondents during field survey administration. Proportionate allocation was applied to distribute representation fairly between large-scale universities and medium-to-small polytechnics based on institutional student body sizes, avoiding analytical bias toward larger campuses.

Sample size determination followed multivariate statistical sample adequacy guidelines established by Hair et al. (2019) and Kline (2023), which recommend an ideal sample size ratio of 5 to 10 respondents for every questionnaire item indicator analyzed in structural regression equations. For a structured survey instrument comprising 16 operational indicators across UTAUT constructs, the target sample size was calculated as $16 \times 7.5 = 120$ respondents. Proportionate field allocation across the seven target campuses yielded 120 valid student respondent records meeting all inclusion criteria for complete statistical processing. Although proportionate allocation balances sampling representation across institutional strata, the non-probability sampling design represents an inherent methodological constraint that bounds population-wide statistical generalizability.

Primary data were gathered using structured physical questionnaires administered using a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The instrument contained 16 item indicators measuring six operational constructs: Performance Expectancy (3 items), Effort Expectancy (3 items), Social Influence (3 items), Facilitating Conditions (3 items), Behavioral Intention (2 items), and Use Behavior (2 items). Prior to regression testing, individual construct scores were calculated by computing the unweighted mathematical mean of the validated indicator items corresponding to each construct:

$$\chi\text{Construct} = (\Sigma_{i}^{k=1}{}^{x}\, i)/k$$

Where χi represents the individual item score and k denotes the total number of items within that specific construct scale.

Quantitative data processing and parametric statistical analyses were executed using IBM SPSS Statistics through a rigorous four-stage analytical sequence. First, psychometric instrument testing evaluated item construct validity via Bivariate Pearson Product-Moment Correlation Analysis (rcalculated> rtable at $\alpha = 0.05$) and internal scale consistency via Cronbach's Alpha ($\alpha > 0.70$) (Sarstedt, 2019; Taber, 2018). Second, classical assumption testing verified regression model suitability, including residual normality testing via the One-Sample Kolmogorov-Smirnov test ($p > 0.05$), multicollinearity diagnostics checking Tolerance (> 0.10) and Variance Inflation Factor (VIF < 10.0), and heteroskedasticity verification via the Glejser Test regressing absolute residuals against independent predictors ($p > 0.05$). Third, multiple linear regression analysis was conducted across two sequential model equations: Model 1 evaluated the direct effects of Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions on Behavioral Intention; Model 2 evaluated the direct effects of Facilitating Conditions and Behavioral Intention on actual Use Behavior. Statistical outputs

generated complete regression parameters, including unstandardized coefficients (B), Standard Error (SE), standardized beta (β), partial t-statistics, p-values, 95% Confidence Intervals, model fit statistics (R, R2, Adjusted R2), and overall ANOVA F-test significance. Fourth, statistical findings were contextualized within information science, digital library usability, and information-seeking behavior literature.

RESULT AND DISCUSSION

Psychometric evaluation confirmed that all 16 item indicators met empirical validity criteria (rcalculated >rtable =0.195,p<0.05). Scale reliability was firmly supported across all constructs, with Cronbach's Alpha coefficients exceeding the recommended threshold (α>0.70) (Taber, 2018): PE (α=0.906), EE (α=0.885), SI (α=0.835), FC (α=0.807), BI (α=0.867), and UB (α=0.893). Classical assumption tests further verified regression model suitability; residual normality was confirmed via the One-Sample Kolmogorov-Smirnov test (p=0.200>0.05), no multicollinearity was present as Tolerance values ranged from 0.417 to 0.757 (>0.10) and VIF ranged from 1.321 to 2.396 (<10.00), and homoscedasticity was demonstrated via the Glejser test (p>0.05).

Classical assumption testing confirmed that the empirical dataset satisfied all parametric statistical prerequisites for linear regression modeling. Residual normality testing via the One-Sample Kolmogorov-Smirnov test on unstandardized residuals yielded an Asymptotic Significance (2-tailed) value of p = 0.200 > 0.05, confirming normal residual distribution. Multicollinearity diagnostics verified that independent variables operated without severe inter-collinearity. In Model 1, Tolerance values ranged from 0.417 to 0.649 (> 0.10) with VIF values ranging from 1.540 to 2.396 (< 10.00). In Model 2, Tolerance for Facilitating Conditions and Behavioral Intention stood at 0.757 (> 0.10) with VIF at 1.321 (< 10.00). Heteroskedasticity testing using the Glejser test yielded non-significant regression coefficients when regressing absolute residuals against predictor variables, with significance values ranging from p = 0.158 to p = 0.671 (> 0.05), confirming homoscedastic residual variance across models.

Multiple linear regression analysis was executed in two structural equations. For Model 1 evaluating Behavioral Intention (R=0.764, R2=0.584, Adjusted R2 =0.570, F (4,115)=40.321,p<0.001), the regression coefficients were as follows: Constant (B=0.412, SE=0.285, t=1.446, p=0.151,95% ,CI (−0.152, 0.976), Performance Expectancy (B=0.684, SE=0.082, β=0.698, t=8.341, p<0.001,95% CI (0.522,0.846), Effort Expectancy (B=0.041, SE=0.084, β=0.042, t=0.488, p=0.627,95% CI (−0.125,0.207), Social Influence (B=−0.118, SE=0.075, β=−0.122, t=−1.574, p=0.118,95% CI (−0.267,0.031), and Facilitating Conditions (B=0.045, SE=0.082, β=0.046, t=0.552, p=0.582,95% CI (−0.117,0.207). For Model 2 evaluating actual Use Behavior (R=0.688, R2 =0.473, Adjusted R2 =0.464, F(2,117)=52.541, p<0.001), the regression parameters comprised: Constant (B=0.582, SE=0.241, t=2.415, p=0.017,95% CI (0.105,1.059), Facilitating Conditions (B=0.512, SE=0.091, β=0.495, t=5.608, p<0.001,95% CI (0.332,0.692), and Behavioral Intention (B=0.298, SE=0.092, β=0.285, t=3.235, p=0.002,95% CI (0.116,0.480).

The empirical findings from Model 1 show that Performance Expectancy (β=0.698, p<0.001) is the dominant determinant shaping student behavioral intention to access institutional repositories, strongly supporting H1. This aligns with core UTAUT theoretical formulations (Venkatesh et al., 2003; Venkatesh et al., 2016), confirming that perceived academic usefulness, research literature relevance, and thesis completion support dictate

student adoption intention. Conversely, Effort Expectancy (p=0.627), Social Influence (p=0.118), and Facilitating Conditions (p=0.582) exert no direct statistically significant effect on Behavioral Intention, leading to the rejection of H2, H3, and H4. Digital native students already possess baseline web fluency, rendering routine interface navigation ease (Effort Expectancy) an expected standard rather than a primary motivator (Matusiak, 2012). Similarly, peer or faculty recommendations (Social Influence) fail to drive usage intention when access is dictated by individual research obligations (Lwoga & Questier, 2014). Facilitating Conditions do not directly drive psychological intention, but instead operate directly upon actual operational usage behavior.

In Model 2, both Facilitating Conditions (β=0.495,p<0.001) and Behavioral Intention (β=0.285,p=0.002) exert direct, positive, and significant effects on actual Use Behavior, supporting H5 and H6. A comparative evaluation of standardized path coefficients reveals that enabling technical infrastructure (β=0.495) exerts a stronger direct influence on actual usage frequency than usage intention (β=0.285). Contextualizing these empirical findings within information-seeking behavior and digital library usability frameworks (Kurbanoğlu et al., 2019; Tenopir et al., 2017) indicates that while perceived academic usefulness establishes intent, institutional infrastructure ultimately dictates execution. Self-reported usage frequency scores reflect operational engagement during literature search workflows; without full-text document availability, stable campus network infrastructure, and reliable repository system usability, student intent cannot translate into sustained repository utilization (Jamali & Nabavi, 2015).

CONCLUSION

This study systematically evaluated the structural determinants governing student acceptance and use of institutional repositories across public universities in Bali using the Unified Theory of Acceptance and Use of Technology (UTAUT) framework. The empirical findings demonstrate that Performance Expectancy serves as the primary driver shaping student behavioral intention, whereas Effort Expectancy, Social Influence, and Facilitating Conditions do not exert a direct impact on usage intention. However, actual repository usage behavior is directly, positively, and significantly determined by both Facilitating Conditions and Behavioral Intention, with technical facilitating conditions playing the dominant direct role in driving usage execution. In conclusion, perceived academic usefulness establishes student intention to adopt digital repositories, whereas robust, accessible technical infrastructure is required to sustain actual repository usage in higher education.

This dichotomy highlights that techonology acceptance in academic settings follows a two stage structural mechanism. Fisrt, cognitive evaluations of utility and relevance determine a student's pyschological motivation and willingness to engage with an isntitutional platform. Second, the transition dorm intention to actual routine behavior relies heavily on the quality and reliability of the technical enviroment. Without adequate infrastructure, high use intention remains dormant and fails to result in actual respository utilization. Consequently, academic institutions must address both cognitive motivators and operational enablers simultaneously to cultivate an active digital reserach culture among students.

SUGGESTION

To optimize student engagement and maximize repository utility, university library managers and academic leadership should implement targeted strategic interventions. First,

library administrators must prioritize collection completeness by expanding full-text document indexing, ensuring digital repository records offer immediate PDF downloads rather than restricted abstract-only metadata, directly enhancing perceived academic utility. Second, university IT departments must strengthen technical facilitating conditions by upgrading repository server bandwidth, resolving file download errors, implementing responsive user search interfaces, and providing clear visual search guides. Third, academic faculties should actively integrate repository search workflows into formal research methodology coursework, embedding structured information-seeking habits within undergraduate curricula. Fourth, library management should establish systematic feedback mechanisms, such as integrated helpdesk ticketing and routine usability evaluations, to rapidly identify and resolve technical barriers experienced by student end-users during literature retrieval workflows.

Several methodological limitations should be acknowledged when interpreting the findings of this study. The reliance on a non-probability sampling design across seven public universities in Bali bounds population-wide statistical generalizability to broader national contexts. Additionally, institutional variations in platform software, collection size, and access policies were not explicitly controlled as moderating variables in the structural model. Usage behavior was captured through self-reported survey measures rather than objective system log data, and the cross-sectional survey design precludes capturing long-term behavioral changes. Future research should incorporate longitudinal designs, introduce moderating variables such as digital literacy or technology experience, and utilize automated server log metrics to capture objective usage patterns across academic digital libraries.

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