

E-Learning, Social Support, and Academic Stress on Perceived Probability of On-Time Graduation: Self-Efficacy Among Graduate Students

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ARTICLE INFO

Keywords:

Academic Stress
E-Learning
On-Time Graduation
Self-Efficacy
Social Support

ABSTRACT

Purpose – This study aims to examine the influence of e-learning, social support, and academic stress on perceived probability of on-time graduation through self-efficacy among master's degree students at public universities in Bali.

Methodology – This research employed a quantitative explanatory approach using Partial Least Squares Structural Equation Modeling (PLS-SEM). The population consisted of active master's students enrolled at Universitas Udayana, Universitas Pendidikan Ganesha, and Universitas Hindu Negeri I Gusti Bagus Sugriwa. A total of 365 respondents were selected using proportional random sampling. Data were collected through structured questionnaires and analyzed using SmartPLS 4 software.

Findings – The results indicate that e-learning and social support have positive and significant effects on self-efficacy and the perceived probability of on-time graduation. Conversely, academic stress negatively affects both self-efficacy and perceived probability of on-time graduation. Self-efficacy significantly influences students' perceptions regarding their likelihood of graduating on time and partially mediates the relationships between e-learning, social support, academic stress, and perceived probability of on-time graduation. The model explains 50.3% of the variance in self-efficacy and 38.6% of the variance in perceived probability of on-time graduation.

Contributin – This study contributes to the literature on educational psychology and higher education management by integrating technological, social, and psychological factors into a comprehensive model explaining graduate students' perceptions of timely graduation. The findings have practical implications for universities seeking to develop effective academic support systems, strengthen social support networks, and reduce academic stress, thereby improving students' confidence and academic success.

Received 29 April 2026; Received in revised form 18 May 2026; Accepted 02 August 2026

Jurnal Eduscience (JES) Volume 13 No. 4 (2026)

Available online 30 August 2026

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INTRODUCTION

Higher education plays a strategic role in producing highly qualified human resources capable of adapting to rapid technological developments, global competition, and increasingly complex labor market demands (Yoo & Marshall, 2024). One of the important indicators used to evaluate the effectiveness and quality of higher education institutions is students' ability to complete their studies within the prescribed period (Zhang et al., 2024). Timely graduation reflects not only students' academic achievement and learning effectiveness but also institutional performance and educational quality assurance. In many countries, including Indonesia, graduation rates and study completion periods are often used as key performance indicators for evaluating university success and accreditation outcomes. Consequently, understanding factors that influence students' opportunities to graduate on time has become an important concern for higher education stakeholders, policymakers, and researchers (Kuo et al., 2014).

At the postgraduate level, completing academic studies within the expected timeframe is often more challenging than at the undergraduate level (Elshareif & Mohamed, 2021). Master's students are required to fulfill various academic obligations, including completing coursework, conducting independent research, writing a thesis, publishing scientific articles, and participating in academic seminars (Martin & Bolliger, 2018). These academic responsibilities frequently coincide with additional commitments outside the university environment (Hayat et al., 2020). Many graduate students simultaneously work as professionals, manage family responsibilities, and participate in social activities, creating multiple demands that may affect their academic performance and study completion process (Honicke & Broadbent, 2016). Previous studies have indicated that balancing academic, professional, and personal responsibilities often contributes to delayed graduation among postgraduate students (Talsma et al., 2019; Ye et al., 2021).

The issue of delayed graduation remains evident in Indonesian higher education institutions. Although universities continue to improve academic support systems and learning facilities, a considerable proportion of postgraduate students still experience difficulties completing their studies within the ideal duration of four semesters (Pascoe et al., 2020). Preliminary data from public universities in Bali indicate that approximately one-quarter of master's students require a longer period than expected to complete their studies (Schunk & DiBenedetto, 2020). This phenomenon suggests that various environmental, social, and psychological factors may influence students' perceptions regarding their likelihood of graduating on time. Since perceptions often shape motivation, persistence, and academic behavior, understanding the determinants of the perceived probability of on-time graduation is increasingly important for designing effective interventions to improve student success and retention.

One factor that has gained considerable attention in recent years is e-learning (Hitches et al., 2022). The rapid advancement of information and communication technology has transformed learning practices in higher education (Freire et al., 2020). E-learning provides students with greater flexibility in accessing educational resources, communicating with lecturers, participating in online discussions, and managing learning activities regardless of time and geographical constraints. Effective e-learning systems may enhance students' learning experiences by improving accessibility, interaction, information quality, and learning efficiency (Wilcox et al., 2005). Several studies have reported that high-quality e-learning environments positively influence academic achievement, learning satisfaction, and student engagement (Meeuwisse et al., 2017). However, the extent to which e-learning contributes to students' confidence and perceptions regarding timely graduation remains relatively underexplored, particularly among postgraduate students.

In addition to technological factors, social support has been consistently identified as an important determinant of academic success (Hefner & Eisenberg, 2019). Social support refers to the emotional, informational, instrumental, and appraisal assistance provided by family members, peers, lecturers, supervisors, and educational institutions (French et al., 2018). According to social support theory, individuals who perceive greater support from their social environment tend to demonstrate higher motivation, better psychological well-being, and stronger coping abilities when facing challenges (Theresya & Setiyani, 2023).

Within the context of postgraduate education, support from supervisors, colleagues, family members, and academic institutions may play a crucial role in helping students manage academic workloads, overcome obstacles during thesis completion, and maintain persistence throughout their studies (Utami et al., 2024). Previous research has demonstrated that social support contributes positively to academic adjustment, learning motivation, and self-confidence among students (Barus et al., 2021; Sahabuddin et al., 2025).

Conversely, academic stress represents one of the most significant barriers to successful study completion (Yuliana & Kindang, 2025). Academic stress arises when students perceive that academic demands exceed their available resources and coping capacities (El-Gazar et al., 2024). Graduate students frequently encounter various stressors, including assignment overload, publication requirements, thesis deadlines, financial pressures, and role conflicts between academic and non-academic responsibilities (Muslem et al., 2024). Excessive levels of academic stress may reduce concentration, learning effectiveness, motivation, and psychological well-being, ultimately hindering academic progress (Yokoyama, 2024). Lazarus and Folkman's Transactional Theory of Stress and Coping explains that stress is determined not only by external demands but also by individuals' cognitive evaluations of their ability to cope with those demands (Pascoe et al., 2020). Therefore, understanding the psychological mechanisms through which academic stress affects students' academic expectations remains an important research agenda (Asif et al., 2023).

Among various psychological factors associated with academic success, self-efficacy has emerged as one of the most influential constructs. According to Bandura's Social Cognitive Theory, self-efficacy refers to an individual's belief in their capability to organize and execute actions required to achieve specific goals (Zhao et al., 2024). Students with strong self-efficacy are generally more persistent, resilient, and confident when facing challenges (Hitches et al., 2022). They tend to view difficult tasks as opportunities for growth rather than threats to be avoided (Honicke & Broadbent, 2016). In the educational context, self-efficacy has been linked to higher academic achievement, stronger learning motivation, better self-regulation, and greater persistence in completing academic tasks (Freire et al., 2020). Consequently, self-efficacy may serve as an important psychological mechanism through which environmental factors such as e-learning quality, social support, and academic stress influence students' perceptions regarding their likelihood of graduating on time (Zhang et al., 2024).

Although previous studies have investigated the relationships among e-learning, social support, academic stress, and self-efficacy, several important gaps remain in the existing literature (Hayat et al., 2020). First, most previous studies have focused on undergraduate students, while empirical evidence concerning postgraduate students remains relatively limited. Second, existing studies often examine these variables independently rather than integrating them into a comprehensive explanatory model. Third, empirical findings regarding the mediating role of self-efficacy remain inconsistent across different educational contexts. Some studies report significant mediation effects, whereas others suggest direct relationships between environmental factors and academic outcomes. These inconsistencies indicate the need for further investigation, particularly within the context of Indonesian postgraduate education.

Based on these considerations, this study aims to examine the influence of e-learning, social support, and academic stress on perceived probability of on-time graduation through self-efficacy among master's students at public universities in Bali. By integrating technological, social, and psychological factors into a single conceptual framework, this study contributes to the literature on educational psychology and higher education management. The findings are expected to provide empirical evidence to help universities design more effective academic support systems, improve digital learning environments, strengthen social support networks, reduce academic stress, and ultimately increase students' confidence and opportunities to complete their studies within the expected timeframe.

METHODOLOGY

Research Design

This study employed a quantitative approach using an explanatory research design to examine the causal relationships among E-Learning, Social Support, Academic Stress, Self-Efficacy, and Perceived Probability of On-Time Graduation among master's students at public universities in Bali, Indonesia. Explanatory research is appropriate for investigating cause-and-effect relationships between variables and testing hypotheses derived from established theories and previous empirical findings.

The conceptual framework of this study was developed based on Bandura's Social Cognitive Theory (1997), which emphasizes the role of self-efficacy in shaping individuals' behavior and performance, and Lazarus and Folkman's Transactional Theory of Stress and Coping (1984), which explains how individuals respond to environmental demands and stressors (Talsma et al., 2019). A cross-sectional survey design was adopted, whereby data were collected from respondents at a single point in time through a structured questionnaire (Alqurashi, 2019). This design was considered suitable because it allows researchers to capture respondents' perceptions and evaluate the relationships among multiple variables simultaneously.

Participant

The population of this study comprised all active master's students enrolled at three public universities in Bali during the 2025/2026 academic year, namely Universitas Udayana, Universitas Pendidikan Ganesha, and Universitas Hindu Negeri I Gusti Bagus Sugriwa. Based on institutional academic records, the total population comprised 4,198 students, including 2,132 from Universitas Udayana, 1,501 from Universitas Pendidikan Ganesha, and 565 from Universitas Hindu Negeri I Gusti Bagus Sugriwa.

The sample size was determined using Slovin's formula with a 5% margin of error, yielding a minimum sample size of 365 respondents. To ensure adequate representation of each university, proportional random sampling was employed. This sampling technique provides equal opportunities for members of the population to be selected while maintaining proportional representation across institutions. According to Broadbent (2017) A sample size exceeding 300 respondents is considered sufficient for Partial Least Squares Structural Equation Modeling (PLS-SEM), making this study's sample size appropriate for statistical analysis and hypothesis testing.

Data Collection

Data for this study were obtained from both primary and secondary sources. Primary data were collected through a structured questionnaire distributed to master's students during the 2025/2026 academic year. The questionnaire was administered both online and offline to facilitate wider participation and increase the response rate. Prior to the main survey, a pilot test involving 30 respondents was conducted to evaluate the clarity, readability, and suitability of the questionnaire items. Feedback obtained from the pilot study was used to refine the instrument before large-scale distribution.

Secondary data were collected from various sources, including university reports, academic regulations, institutional statistics, books, scientific journals, conference proceedings, and official publications issued by government agencies and higher education institutions. These secondary sources were utilized to support the development of the research framework, strengthen the theoretical foundation, and provide contextual information regarding postgraduate education and graduation performance in Indonesia. All respondents participated voluntarily, and the confidentiality of their responses was ensured throughout the research process.

Instrument

The research instrument consisted of five latent constructs designed to measure the study's main variables. E-Learning was measured using indicators adapted from Martin & Bolliger (2018), including accessibility, flexibility, interactivity, technological integration, and the quality of online assessment. Social

Support was measured using the dimensions proposed by Schunk & DiBenedetto (2020): emotional, informational, instrumental, and appraisal support. Academic Stress was assessed using indicators adapted from Gadzella (1994), including academic pressure, frustration, academic conflict, academic changes, and self-imposed stress.

Self-Efficacy was measured based on Bandura (1997) dimensions, namely magnitude, strength, and generality, which reflect students' confidence in their ability to perform academic tasks and overcome challenges during their studies successfully. Meanwhile, Perceived Probability of On-Time Graduation was measured through indicators reflecting students' confidence in completing coursework, thesis requirements, publication obligations, and other academic requirements within the expected study period (Meeuwisse et al., 2017).

All indicators were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Prior to the main survey, the questionnaire was evaluated through a pilot test involving 30 respondents to assess the clarity, validity, and reliability of the measurement items. The instrument was subsequently refined based on the pilot test results before being distributed to the research sample.

Table 1. The main variables of the study

Variable	Dimensions	Indicators	Source
E-Learning	Accessibility	Ease of accessing learning materials	Hafeez et al., (2022)
	Flexibility	Learning can be conducted anytime and anywhere	Hafeez et al., (2022)
Social Support	Emotional Support	Family encouragement	Apollo & Cahyadi (2012)
Academic Stress	Academic Pressure	Pressure from assignments and deadlines	Gadzella (1994)
Self-Efficacy	Magnitude	Confidence in completing academic tasks	Bandura (1997)
Perceived Probability of On-Time Graduation	Academic Completion Confidence	Confidence in graduating within four semesters	Adapted from academic success literature

Data Analysis

The collected data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4 software. PLS-SEM was selected because it is suitable for predictive and explanatory research involving complex models with multiple latent variables and mediation effects (Kuo et al., 2014). In addition, PLS-SEM does not require strict assumptions regarding data normality and is appropriate for analyzing relationships among constructs measured through multiple indicators (Broadbent, 2017).

The Measurement Model (Outer Model)

The measurement model (outer model) was evaluated to assess the validity and reliability of the research instrument. Convergent validity was examined using outer loading values and Average Variance Extracted (AVE), with loadings greater than 0.70 and AVEs above 0.50 indicating that the indicators adequately represent their respective constructs. Discriminant validity was assessed using the Fornell-Larcker Criterion and the Heterotrait-Monotrait Ratio (HTMT) to ensure that each construct was empirically distinct from the others. Reliability was evaluated using Cronbach's Alpha and Composite Reliability, with values exceeding 0.70 considered acceptable.

The Structural Model (Inner Model)

The structural model (inner model) was evaluated to examine the predictive power and explanatory capability of the proposed model. This stage included assessing the coefficient of determination (R^2), which indicates the proportion of variance explained by the exogenous variables. Effect size (f^2) was calculated to determine the magnitude of the contribution of each predictor variable, while predictive relevance (Q^2) was

assessed using the blindfolding procedure to evaluate the model's predictive accuracy.

Hypothesis Testing

Hypothesis testing was conducted using the bootstrapping procedure. The significance of the direct and indirect relationships among variables was determined based on the t-statistic and p-value. A hypothesis was considered supported when the t-statistic exceeded 1.96, and the p-value was below 0.05 at a 95% confidence level. Furthermore, mediation analysis was performed to examine the role of Self-Efficacy in mediating the relationships between E-Learning, Social Support, Academic Stress, and Perceived Probability of On-Time Graduation.

FINDINGS

Respondent Characteristics

Table 2 presents the distribution of respondents across the participating universities. A total of 4,198 respondents were included in this study, representing three higher education institutions in Bali, Indonesia. The largest proportion of respondents came from Universitas Udayana (2,132; 50.8%), followed by Universitas Pendidikan Ganesha (1,501; 35.7%), while UHN I Gusti Bagus Sugriwa Denpasar contributed 565 (13.5%). This distribution indicates that the sample was predominantly drawn from Universitas Udayana, with substantial participation from the other two universities, providing a diverse institutional representation for the study.

Table 2. Respondent Characteristics

University	Population	Persentation
Universitas Udayana	2.132	50,80%
UHN I Gusti Bagus Sugriwa Denpasar	565	13,50%
Universitas Pendidikan Ganesha	1.501	35,70%
Total	4.198	100%

A total of 365 master's students participated in this study. The respondents were drawn from three public universities in Bali, namely Universitas Udayana, Universitas Pendidikan Ganesha, and Universitas Hindu Negeri I Gusti Bagus Sugriwa.

Measurement Model Assessment

The measurement model was evaluated by examining the indicator loadings to assess the convergent validity of each construct. As shown in Table 3, all indicators exhibited outer loading values exceeding the recommended threshold of 0.70, indicating that each item adequately represents its corresponding latent construct. Specifically, the outer loadings ranged from 0.717 to 0.911, demonstrating strong correlations between the observed indicators and their respective variables. These findings confirm that the constructs of E-learning, Social Support, Academic Stress, Self-efficacy, and Perceived Probability of On-Time Graduation possess satisfactory convergent validity, thereby supporting the adequacy of the measurement model for subsequent structural model analysis.

Table 3. Outer Loading

Variabel	Indicator	Outer Loading	Criteria	Information
E-learning (X1)	EL1	0,809	> 0,70	Valid
	EL2	0,717	> 0,70	Valid
	EL3	0,774	> 0,70	Valid
	EL4	0,722	> 0,70	Valid
	EL5	0,795	> 0,70	Valid
Social Support (X2)	DS1	0,853	> 0,70	Valid
	DS2	0,811	> 0,70	Valid
	DS3	0,824	> 0,70	Valid

Variabel	Indicator	Outer Loading	Criteria	Information
Academic Stress (X3)	SA1	0,903	> 0,70	Valid
	SA2	0,897	> 0,70	Valid
	SA3	0,901	> 0,70	Valid
	SA4	0,911	> 0,70	Valid
Self-efficacy (M)	SE1	0,813	> 0,70	Valid
	SE2	0,773	> 0,70	Valid
	SE3	0,858	> 0,70	Valid
	SE4	0,782	> 0,70	Valid
	SE5	0,764	> 0,70	Valid
Perceived Probability of On-Time Graduation (Y)	TW1	0,852	> 0,70	Valid
	TW2	0,837	> 0,70	Valid
	TW3	0,819	> 0,70	Valid

The results show that all indicators have outer loading values above 0.70. Therefore, all measurement items are considered valid and adequately represent their respective constructs.

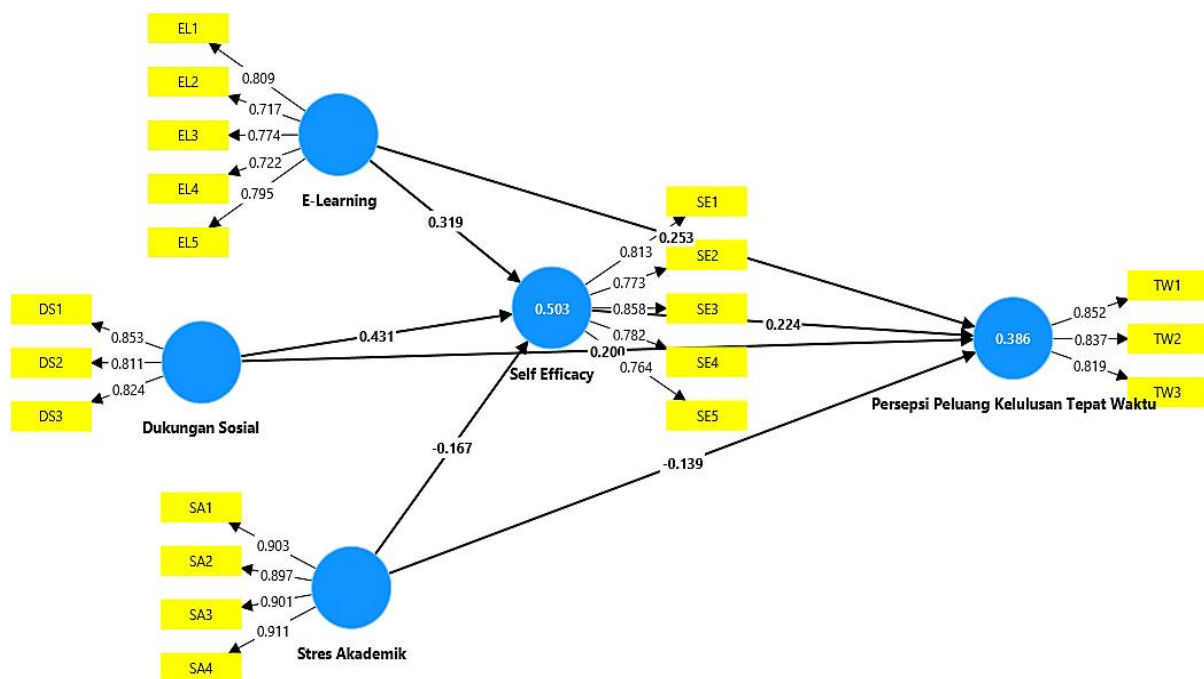


Figure 1. Output Outer Model

Convergent validity was further assessed using the Average Variance Extracted (AVE), which measures the extent to which a construct explains the variance of its indicators. According to the recommended criterion, an AVE value of 0.50 or higher indicates that a latent construct captures more than half of the variance of its indicators, thereby demonstrating adequate convergent validity. The AVE results for all constructs are presented in Table 4.

Table 4. Average Variance Extracted (AVE)

Variable	AVE
E-Learning	0,585
Social Support	0,688
Academic Stress	0,816
Self-Efficacy	0,638
Perceived Probability of On-Time Graduation	0,699

As shown in Table 4, all constructs achieved AVE values above the recommended threshold of 0.50, ranging from 0.585 to 0.816. Specifically, Academic Stress exhibited the highest AVE value (0.816), indicating

that its indicators strongly represent the underlying construct. This was followed by Perceived Probability of On-Time Graduation (0.699), Social Support (0.688), Self-Efficacy (0.638), and E-Learning (0.585). Although the AVE value for E-Learning was the lowest among the constructs, it still exceeded the minimum acceptable threshold, confirming satisfactory convergent validity. Overall, these findings demonstrate that all latent constructs adequately explain the variance of their respective indicators and meet the recommended requirements for convergent validity, supporting the suitability of the measurement model for subsequent structural model analysis.

Table 5. The Cronbach's Alpha and Composite Reliability values

Variabel	Cronbach's alpha	Composite reliability
Social Support	0.773	0.777
E-Learning	0.823	0.832
Perceived Probability of On-Time Graduation	0.788	0.797
Self-Efficacy	0.859	0.871
Academic Stress	0.925	0.926

The Cronbach's Alpha and Composite Reliability values for all constructs exceed the recommended threshold of 0.70. These results indicate that all variables are reliable and internally consistent.

Table 6. R-Square Value

Variabel	R-square	R-square adjusted
Perceived Probability of On-Time Graduation	0.386	0.380
Self-Efficacy	0.503	0.499

The R² value of Timely Graduation Opportunity Perception is 0.386, while Self-Efficacy has an R² value of 0.503. These findings indicate that the proposed model has moderate explanatory power in predicting the endogenous variables.

The structural model was evaluated by examining the direct effects among the latent constructs using the path coefficients (β), t-statistics, and p-values. A hypothesis was considered supported when the t-statistic exceeded 1.96, and the p-value was less than 0.05. The results of the direct effect analysis are presented in Table 7.

Table 7. Direct Effect Results

Hipotesis	Relationship Between Variables	(β)	t-Statistics	p-Values	Decision
H1	E-learning $\rightarrow$ Perceived Probability of On-Time Graduation	0,253	4,414	0	Supported
H2	Social Support $\rightarrow$ Perceived Probability of On-Time Graduation	0,2	2,342	0,019	Supported
H3	Academic-Stress $\rightarrow$ Perceived Probability of On-Time Graduation	-0,139	4,281	0	Supported
H4	E-learning $\rightarrow$ Self-efficacy	0,319	5,587	0	Supported
H5	Social Support $\rightarrow$ Self-Efficacy	0,431	6,636	0	Supported
H6	Academic-Stress $\rightarrow$ Self-Efficacy	-0,167	3,936	0	Supported
H7	Self-efficacy $\rightarrow$ Perceived Probability of On-Time Graduation	0,224	2,824	0,005	Supported

The bootstrapping results indicate that all direct relationships are statistically significant ($p < 0.05$). Therefore, hypotheses H1-H7 are supported. Overall, the findings indicate that both e-learning and social support directly and indirectly enhance students' perceived likelihood of graduating on time through increased self-efficacy, whereas academic stress undermines both self-efficacy and students' confidence in graduating on schedule. Among the antecedents of self-efficacy, social support emerged as the strongest positive predictor ($\beta = 0.431$), highlighting its critical role in fostering students' academic resilience and expectations of timely graduation.

Table 8. Indirect Effect Results

Hipotesis	Mediation Route	Coefficient	T Statistics	P Values	Decision
H8	E-learning → Self-efficacy → Perceived Probability of On-Time Graduation	0,071	2,334	0,02	Supported
H9	Social Support → Self-efficacy → Perceived Probability of On-Time Graduation	0,097	2,673	0,008	Supported
H10	Academic Stress → Self-efficacy → Perceived Probability of On-Time Graduation	-0,037	2,101	0,036	Supported

The mediating role of self-efficacy was assessed by examining the indirect effects of e-learning, social support, and academic stress on the perceived probability of on-time graduation. As shown in Table 8, all indirect effects were statistically significant ($p < 0.05$), indicating that Self-Efficacy significantly mediates the relationships between the exogenous variables and the perceived probability of on-time graduation. Specifically, E-learning ($\beta = 0.071$, $p = 0.020$) and Social Support ($\beta = 0.097$, $p = 0.008$) had positive indirect effects through self-efficacy, while Academic Stress had a significant negative indirect effect ($\beta = -0.037$, $p = 0.036$). These findings suggest that higher self-efficacy strengthens the positive influence of e-learning and social support, while reducing the adverse impact of academic stress on students' perceived likelihood of graduating on time. Since both the direct and indirect effects were significant, self-efficacy serves as a partial mediator in the proposed structural model. The indirect effect analysis shows that all mediation paths are significant ($p < 0.05$). Thus, hypotheses H8, H9, and H10 are accepted.

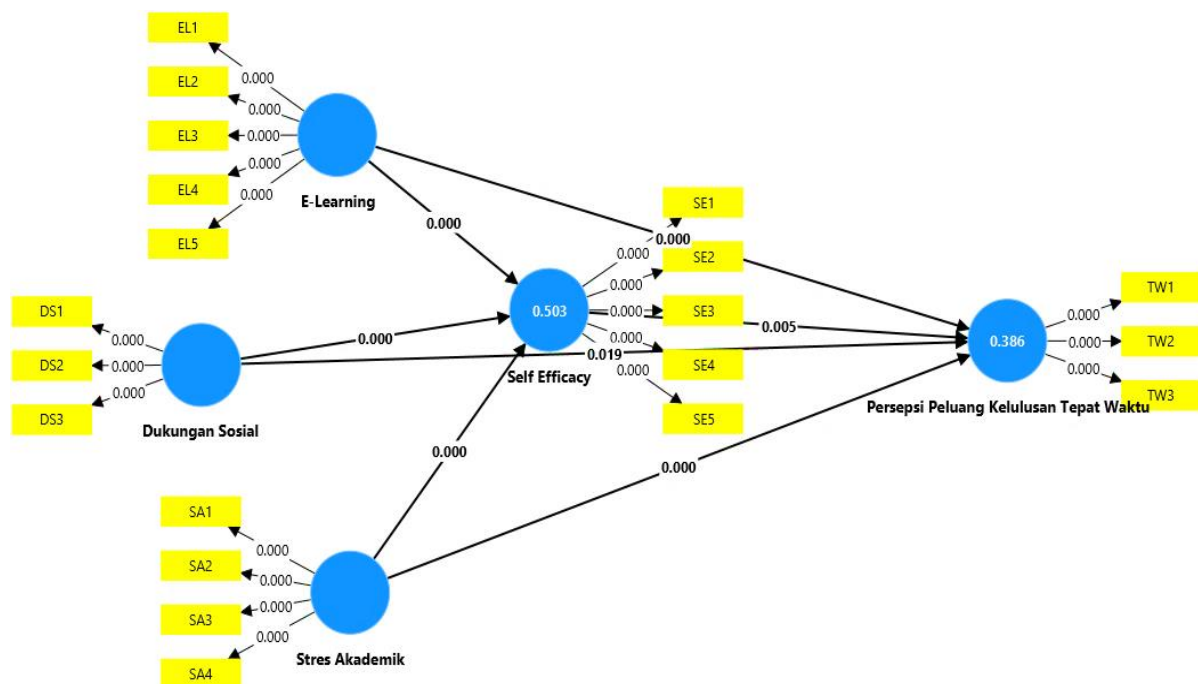


Figure 2. Structural Model Bootstrapping Results

DISCUSSION

The findings of this study demonstrate that E-Learning has a positive and significant effect on both Self-Efficacy and Perceived Probability of On-Time Graduation among master's students at public universities in Bali. This result indicates that the availability of accessible, flexible, and interactive digital learning environments contributes to students' confidence in managing academic tasks and increases their optimism regarding the timely completion of their studies. The findings support previous studies emphasizing that

effective e-learning systems enhance students' learning experiences, autonomy, and academic engagement (Elshareif & Mohamed, 2021; Wilcox et al., 2005). When students can access learning materials conveniently, communicate effectively with lecturers, and use technology-based learning resources, they are more likely to perceive themselves as capable of overcoming academic challenges (Hefner & Eisenberg, 2019). From the perspective of Social Cognitive Theory (Bandura, 1997), a supportive learning environment provides mastery experiences and learning opportunities that strengthen self-efficacy beliefs, which subsequently influence students' academic expectations and performance.

The results also reveal that Social Support has a positive and significant effect on both Self-Efficacy and Perceived Probability of On-Time Graduation. Among all antecedent variables, Social Support emerged as the strongest predictor of Self-Efficacy. This finding highlights the important role of family members, peers, supervisors, lecturers, and educational institutions in helping postgraduate students navigate academic demands. (Hefner & Eisenberg, 2019). Master's students often face multiple responsibilities, including academic obligations, professional work, and family commitments. Emotional encouragement, informational guidance, instrumental assistance, and constructive feedback from significant others may help students maintain motivation and confidence during their studies. These findings are consistent with previous research suggesting that social support serves as a protective factor, enhancing academic resilience, psychological well-being, and persistence. Students who perceive strong support from their social environment tend to be more confident in their ability to complete academic tasks and achieve educational goals within the expected timeframe.

Conversely, Academic Stress was found to negatively affect both Self-Efficacy and Perceived Probability of On-Time Graduation. This result suggests that excessive academic demands, thesis completion pressures, publication requirements, deadlines, and role conflicts may undermine students' confidence and reduce their optimism regarding timely graduation (Devisakti & Ramayah, 2022). These findings support the Transactional Theory of Stress and Coping proposed by Lazarus & Folkman (1984), which argues that stress occurs when individuals perceive environmental demands as exceeding their available resources. High levels of academic stress may impair concentration, reduce motivation, weaken problem-solving abilities, and negatively affect psychological well-being. As a result, students experiencing elevated stress levels may become less confident in their ability to complete academic requirements and more pessimistic about their chances of graduating on time. This finding reinforces the importance of stress management programs and psychological support services within higher education institutions.

Furthermore, the study found that Self-Efficacy has a positive and significant effect on Perceived Probability of On-Time Graduation. This result confirms the central role of self-efficacy in shaping students' academic expectations and behaviors. Students with high self-efficacy are more likely to believe that they can complete coursework, conduct research, write theses, and fulfill graduation requirements despite encountering obstacles (Sutherland et al., 2024). According to Social Cognitive Theory, self-efficacy influences goal setting, persistence, effort allocation, and resilience when facing difficulties. Therefore, students who have strong confidence in their academic abilities are more likely to maintain motivation and continue working toward their graduation goals even under challenging circumstances. This finding aligns with numerous previous studies demonstrating that self-efficacy is a strong predictor of academic achievement, persistence in learning, and educational success.

An important contribution of this study lies in the examination of the mediating role of Self-Efficacy. The results indicate that Self-Efficacy partially mediates the relationships between E-Learning, Social Support, Academic Stress, and Perceived Probability of On-Time Graduation. These findings suggest that environmental and contextual factors influence students' perceptions of graduation opportunities not only directly but also indirectly through their impact on students' confidence in their academic abilities. Effective e-learning systems and strong social support contribute to the development of self-efficacy, which subsequently enhances students' confidence in graduating on time. Conversely, academic stress weakens self-efficacy and indirectly decreases students' perceptions regarding successful study completion. The partial

mediation effect indicates that while self-efficacy is an important psychological mechanism, environmental factors also directly influence perceptions of graduation.

The findings provide several practical implications for higher education institutions. Universities should continue improving the quality of e-learning systems by ensuring accessibility, user-friendly interfaces, interactive learning features, and effective academic support services. Institutions should also strengthen social support mechanisms by promoting positive interactions among students, lecturers, supervisors, and academic staff. Mentoring programs, academic counseling services, and peer-support initiatives may help students overcome challenges encountered during their studies. Additionally, universities should implement stress-management interventions, such as academic counseling, mental health services, time-management training, and thesis-writing workshops, to reduce academic stress and improve students' psychological well-being.

Overall, the present study contributes to the literature on educational psychology and higher education management by proposing and empirically validating an integrated model that combines technological, social, and psychological determinants of perceived probability of on-time graduation among postgraduate students. The findings emphasize that timely graduation is influenced not only by academic competence but also by the quality of the learning environment, availability of social support, students' psychological conditions, and their confidence in completing academic requirements. Consequently, universities seeking to improve graduation outcomes should adopt a holistic approach that simultaneously addresses technological, social, and psychological dimensions of student success.

CONCLUSION

This study examined the effects of e-learning, social support, and academic stress on perceived opportunities for on-time graduation through self-efficacy among master's students at public universities in Bali. The findings demonstrate that e-learning and social support have positive and significant effects on self-efficacy and perceived opportunities for on-time graduation. In contrast, academic stress has a significant negative effect on both variables. Furthermore, self-efficacy significantly enhances students' perceptions regarding their likelihood of completing their studies within the expected timeframe. Mediation analysis revealed that self-efficacy partially mediates the relationships between e-learning, social support, and academic stress with perceived opportunities for on-time graduation. These findings confirm the relevance of Social Cognitive Theory and the Transactional Theory of Stress and Coping in explaining how environmental and psychological factors shape students' academic expectations and confidence toward timely degree completion.

The study contributes to the higher education literature by proposing and empirically validating an integrated model that combines technological, social, and psychological determinants of perceived graduation opportunities among postgraduate students. In practice, the findings suggest that universities should improve the quality of e-learning systems, strengthen academic and social support mechanisms, and develop interventions to reduce academic stress and enhance students' self-efficacy. Although the study provides important empirical evidence from public universities in Bali, its findings are limited by the cross-sectional design and geographical scope. Future research is encouraged to employ longitudinal approaches, include broader institutional contexts, and investigate additional factors such as academic resilience, learning motivation, supervisor support, and work study balance to obtain a more comprehensive understanding of timely graduation among postgraduate students.

ACKNOWLEDGMENT

The authors would like to express their sincere gratitude to the Graduate Schools of Universitas Udayana, Universitas Pendidikan Ganesha, and Universitas Hindu Negeri I Gusti Bagus Sugriwa Denpasar for their support and cooperation during the data collection process. Appreciation is also extended to all master's

students who voluntarily participated in this study and provided valuable information through the survey questionnaire.

The authors are grateful to their academic supervisors, lecturers, parents, husband, and colleagues for their constructive feedback and scholarly insights throughout the research process. Their contributions have significantly improved the quality of this study. The authors declare that this research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors and that there are no conflicts of interest related to this study.

REFERENCES

- Alqurashi, E. (2019). Predicting student satisfaction and perceived learning within online learning environments. *Distance Education*, 40(1), 133–148. <https://doi.org/10.1080/01587919.2018.1553562>
- Apollo, & Cahyadi, A. (2012). *Konflik peran ganda perempuan yang menikah dan bekerja ditinjau dari dukungan sosial keluarga*. Program Studi Psikologi – Fakultas Psikologi Universitas Katolik Widya Mandala Madiun. Universitas Katolik Widya Mandala Madiun.
- Asif, M., Usman Lodhi, H. M., & Ahmad, A. (2023). The Impact of Academic Self-efficacy, E-learning Adoption, and Academic Motivation on Self-rated Academic Performance of University Students. *Journal of Research in Psychology*, 4(2), 108–119. <https://doi.org/10.31580/jrp.v4i2.2710>
- Bandura, A. (1997). *Self-Efficacy: The Exercise of Control*. Worth Publishers.
- Barus, M., Saragih, H., & Bakara, J. K. (2021). Self-Efficacy Berhubungan Dengan Stres Mahasiswa Yang Sedang Mengerjakan Skripsi Tahun 2021. *Jurnal Online Keperawatan Indonesia*, 5(1), 53–63. <https://e-journal.sari-mutiara.ac.id/index.php/Keperawatan/article/download/3067/2148>
- Broadbent, J. (2017). Comparing online and blended learners' self-regulated learning strategies and academic performance. *The Internet and Higher Education*, 10(2), 2013–2016. <https://doi.org/10.1016/j.iheduc.2017.01.004>
- Devisakti, A., & Ramayah, T. (2022). Grit and Self-Efficacy in Using E-Learning Among Postgraduates in Higher Education Institutions. *Journal of Continuing Higher Education*, 70(3), 141–156. <https://doi.org/10.1080/07377363.2021.1924992>
- El-Gazar, H. E., Zoromba, M. A., Fayed, S. M., Loutfy, A., Elzieny, A. A., Elzeiny, A., Alkubati, S. A., Shahin, M. A. H., Altheeb, M., & El-Monshed, A. H. (2024). Nurturing Success: E-Learning readiness and academic self-efficacy in nursing students. *BMC Nursing*, 23(1), 1–13. <https://doi.org/10.1186/s12912-024-02125-2>
- Elshareif, E., & Mohamed, E. A. (2021). The effects of E-learning on students' motivation to learn in higher education. *Online Learning Journal*, 25(3), 128–143. <https://doi.org/10.24059/olj.v25i3.2336>
- Freire, C., Ferradás, M. D. M., Regueiro, B., Rodríguez, S., Valle, A., & Núñez, J. C. (2020). Coping strategies and self-efficacy in university students: A person-centered approach. *Frontiers in Psychology*, 11(1), 530329. <https://doi.org/10.3389/fpsyg.2020.00841>
- French, K. A., Dumani, S., Allen, T. D., & Shockley, K. M. (2018). A Meta-Analysis of Work-Family Conflict and Social Support. *Psychological Bulletin*, 176(12), 139–148. <https://doi.org/10.1037/bul0000120.A>
- Gadzella, B. M. (1994). Student-life stress inventory: Identification of and reactions to stressors. *Psychological Reports*, 74(2), 395–402. <https://doi.org/10.2466/pr0.1994.74.2.395>
- Hafeez, M., Ajmal, F., & Zulfiqar, Z. (2022). Assessment of Students' Academic Achievements in Online and Face-To-Face Learning in Higher Education. *Journal of Technology and Science Education*, 12(1), 259–273. <https://doi.org/10.3926/JOTSE.1326>
- Hayat, A. A., Shateri, K., Amini, M., & Shokrpour, N. (2020). Relationships between academic self-efficacy, learning-related emotions, and metacognitive learning strategies with academic performance in medical students: A structural equation model. *BMC Medical Education*, 20(1), 1–11. <https://doi.org/10.1186/s12909-020-01995-9>
- Hefner, J., & Eisenberg, D. (2019). Social Support and Mental Health Among College Students. *American Journal of Orthopsychiatry*, 79(4), 491–499. <https://doi.org/10.1037/a0016918>

- Hitches, E., Woodcock, S., & Ehrich, J. (2022). Building self-efficacy without letting stress knock it down: Stress and academic self-efficacy of university students. *International Journal of Educational Research Open*, 3(1), 100124. <https://doi.org/10.1016/j.ijedro.2022.100124>
- Honicke, T., & Broadbent, J. (2016). The influence of academic self-efficacy on academic performance: A systematic review. *Educational Research Review*, 17(1), 63–84. <https://doi.org/10.1016/j.edurev.2015.11.002>
- Kuo, Y. C., Walker, A. E., Schroder, K. E., & Belland, B. R. (2014). Interaction, Internet self-efficacy, and self-regulated learning as predictors of student satisfaction in online education courses. *The Internet and Higher Education*, 20(1), 35–50. <https://doi.org/10.1016/j.iheduc.2013.10.001>
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer Publishing Company. <https://books.google.com/books?hl=id&lr=&id=i-ySQQuUpr8C&oi=fnd&pg=PR5&dq=Lazarus+%26+Folkman:1984&ots=DhEMjshjMb&sig=ywX2vacYUi4qJdldsyZrmdDHoU>
- Martin, F., & Bolliger, D. U. (2018). Engagement matters: Student perceptions on the importance of engagement strategies in the online learning environment. *Online Learning Journal*, 22(1), 205–222. <https://doi.org/10.24059/olj.v22i1.1092>
- Meeuwisse, M., de Meijer, L. A. L., Born, M. P., & Severiens, S. E. (2017). The work–study interface: similarities and differences between ethnic minority and ethnic majority students. *Higher Education*, 73(2), 261–280. <https://doi.org/10.1007/s10734-016-0012-1>
- Muslim, A., Kasim, U., Mustafa, F., Fitriani, S. S., & Rahmi, M. (2024). The Correlation between the Use of Online Learning Platforms and Undergraduate Students' Self-Efficacy. *Journal of Language and Education*, 10(1), 83–100. <https://cyberleninka.ru/article/n/the-correlation-between-the-use-of-online-learning-platforms-and-undergraduate-students-self-efficacy>
- Pascoe, M. C., Hetrick, S. E., & Parker, A. G. (2020). The impact of stress on students in secondary school and higher education. *International Journal of Adolescence and Youth*, 25(1), 104–112. <https://doi.org/10.1080/02673843.2019.1596823>
- Sahabuddin, R., Lunasia, S., & Maruf, A. (2025). Pengaruh Self-Efficacy , Self-Regulated Learning dan Dukungan Sosial Teman Sebaya terhadap Stres Akademik Mahasiswa di Perguruan Tinggi. *Pinisi Journal Of ART, Humanity & Social Studies*, 5(6), 180–188. <https://journal.unm.ac.id/index.php/PJAHSS/article/download/10691/6489>
- Schunk, D. H., & DiBenedetto, M. K. (2020). Motivation and social cognitive theory. *Contemporary Educational Psychology*, 60(1), 101832. <https://doi.org/10.1016/j.cedpsych.2019.101832>
- Sutherland, K., Brock, G., de Villiers Scheepers, M. J., Millear, P. M., Norman, S., Strohfeldt, T., Downer, T., Masters, N., & Black, A. L. (2024). Non-traditional students' preferences for learning technologies and impacts on academic self-efficacy. *Journal of Computing in Higher Education*, 36(2), 298–319. <https://doi.org/10.1007/s12528-023-09354-5>
- Talsma, K., Schüz, B., & Norris, K. (2019). Miscalibration of self-efficacy and academic performance: Self-efficacy ≠ self-fulfilling prophecy. *Learning and Individual Differences*, 69(1), 182–195. <https://doi.org/10.1016/j.lindif.2018.11.002>
- Theresya, D., & Setiyani, R. (2023). Pengaruh self-esteem dan social support terhadap resiliensi akademik mahasiswa dengan self-efficacy sebagai variabel mediasi. *Jurnal Ekonomi Dan Pendidikan*, 19(2), 164–182. <https://elibrary.ru/item.asp?id=74339406>
- Utami, O. W., Arrido, H. T., Pittor, R. C., & Abdilah, R. (2024). Hubungan Antara Dukungan Sosial Dan Self-Efficacy Mahasiswa. *Humanitis: Jurnal Humaniora, Sosial Dan Bisnis*, 2(8), 306–312. <https://humanisa.my.id/index.php/hms/article/download/208/250>
- Wilcox, P., Winn, S., & Fyvie-Gauld, M. (2005). 'It was nothing to do with the university, it was just the people': the role of social support in the first-year experience of higher education. *Studies in Higher Education*, 30(6), 707–722. <https://doi.org/10.1080/03075070500340036>
- Ye, Y., Huang, X., & Liu, Y. (2021). Social support and academic burnout among university students: A moderated mediation model. *Psychology Research and Behavior Management*, 14(1), 335–344. <https://doi.org/10.2147/PRBM.S300797>

- Yokoyama, S. (2024). Impact of Academic Self-Efficacy on Online Learning Outcomes: A Recent Literature Review. *EXCLI Journal*, 23(1), 960–966. <https://doi.org/10.17179/excli2024-7502>
- Yoo, H. J., & Marshall, D. T. (2024). Exploring graduate students' perceived helplessness, self-efficacy, social support, and satisfaction. *Studies in Graduate and Postdoctoral Education*, 16(1), 73–89. <https://doi.org/10.1108/SGPE-12-2023-0113>
- Yuliana, H., & Kindang, I. W. (2025). Hubungan Self-Efficacy Dan Social Support Terhadap Stres Akademik Pada Mahasiswa Tingkat 2 Keperawatan Universitas Widya Nusantara. *Nursing Arts*, 17(2), 1978–6298. <https://jurnal.poltekkes-sorong.id/index.php/NA/article/download/80/87>
- Zhang, B., Yin, X., & Ren, Z. (2024). Can perceived social support influence the academic achievement of master's students? — Evidence from a University in China. *Education and Information Technologies*, 29(16), 21449–21475. <https://doi.org/10.1007/s10639-024-12693-0>
- Zhao, Z., Ren, P., & Yang, Q. (2024). Student Self-Management, Academic Achievement: Exploring the Mediating Role of Self-Efficacy and the Moderating Influence of Gender—Insights From a Survey Conducted in 3 Universities in America. *Journal of Integrated Social Sciences and Humanities*, 1(1), 1–12. <https://doi.org/10.62836/jissh.v1i1.159>