The Effect of Resilience and Digital Capabilities on Students' Adaptability to Change Moderated by Organizational Learning

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Abstract: Exploring Moderating Role of Organizational Learning in Enhancing Adaptability to Change Through Resilience and Digital Capabilities. **Objective**: To determine the effect of final year student resilience and digital capabilities on adaptability to change for technology advancement which is moderated by organizational learning. **Method**: This research was done using a quantitative approach with a survey method. The study population were final-year students from various faculties at a public university, the sample tehnique was random sampling and the number of selected samples was 300 respondents. Questionnaires were used to collect data from research participants. The data were analyzed using moderate regression analysis (MRA) using SPSS. **Findings**: Resilience has a positive and significant effect on adaptability to change, digital capabilities have a positive and significant effect on adaptability to change. Organizational learning moderates the influence of resilience on adaptability to change. Furthermore, the organizational learning also moderates the effect of digital capabilities on adaptability to change. **Conclusion**: These findings imply that HEI prioritize programs that bolster students' resilience and digital skills to improve adaptability to change. Organizational learning should be recognized as a key factor that strengthens the impact of resilience and digital skills on adaptability

Keywords: adaptability to change, digital capability, higher education institution, organizational learning, resilience.

■ INTRODUCTION

The ASEAN region is among the world's most dynamic areas of economic growth, with Indonesia leading the trend (Geospasia, 2019). Graph 1 (left sided) illustrates the growth of the internet economy in ASEAN, represented by gross merchandise value (GMV) in billion USD. Indonesia is expected to experience the highest growth, reaching 133 billion USD by 2025, with a compound annual growth rate (CAGR) of 32%. Key drivers of digital economic growth in Indonesia include the expansion of e-commerce,

ride-hailing services, and online gaming (Graph 1-right sided). The highest rapid increase in e-commerce sector, from 1.7 billion USD in 2015, with indicating reach 82 billion USD by 2025, at a CAGR of 48%. Followed by the online travel sector , with expectations to reach 25 billion USD by 2025 at a CAGR of 17%. The online media sector rose from to 4 billion USD in 2019, with projections of 9 billion USD by 2025, growing at a CAGR of 31%. Finally, the ride-hailing sector expanded from 0.9 billion USD in 2015 to 6 billion USD in 2019 and is expected to reach 18

billion USD by 2025, with a CAGR of 34%. This rapid growth of digital economy have significant implications for the labor market, making it a critical issue for higher education institutions (HEIs) (Akour & Alenezi, 2022). Both university faculty, employers, and students must prepare to navigate the uncertainties brought about by technological disruption. As sectors such as e-commerce, ride-hailing, and online gaming continue to expand, the skills required in the labor market are increasingly focused on digital

technologies, data analysis, and innovation (Zain, 2021). The rise of automation is disrupting employment opportunities and altering higher education delivery, due to shifts in labor demand, occupational categories, job skills, and career trajectories. Academics and policymakers in the education sector are engaged in discussions about the future of career paths and the evolving challenges facing higher education (Leonardi & Treem, 2020). This transformation will undoubtedly impact colleges and HEI.
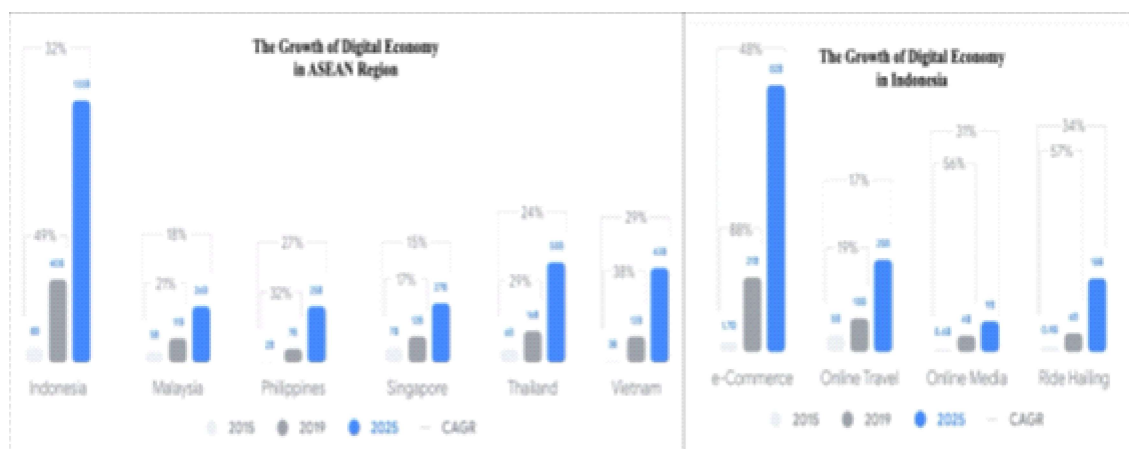
Figure 1. Digital economy growth

Furthermore, digitization will increasingly emphasize diversity, openness, knowledge-sharing, adaptability to change, the use of diverse distribution channels, and more efficient work organization (Alenezi et al., 2023). This affects higher education institutions (HEIs), particularly for final-year students, who must be equipped with relevant technological skills to enter a competitive labor market. Therefore, HEIs need to update curricula and provide training programs focused on mastering digital technologies, artificial intelligence, big data, and automation, which intensify the need for adaptability, especially for final-year students (Jakoet-Salie & Ramalobe, 2023). Skills that once guaranteed employability have, in many cases, become outdated, prompting students to acquire and rapidly adjust

to new skills, including digital literacy and technological proficiency, to remain competitive, accompanied by resilience and digital capabilities (Ibrahim & Aldawsari, 2023; Russell et al., 2020). Student resilience, in conjunction with academic competence, is strongly linked to academic achievement (Sarra et al., 2019). Resilience is defined as the ability to successfully adapt to adverse situations (Howard & Johnson, 2000). Resilient students are typically able to recover from poor outcomes, manage obstacles and challenges, and maintain their confidence despite setbacks (Sarra et al., 2019). Sarra et al., (2019) identified that students with low resilience were more likely to experience academic failure. Martin & Marsh (2006) proposed several factors related to resilience, such as self-efficacy, planning, and

control. As students' planning and study management abilities improve, their academic resilience tends to increase. To support this development, educators should establish clear expectations, motivate students to set meaningful goals, and offer strategies for monitoring their progress toward these goals (Martin & Marsh, 2006).

The concept of digital capabilities is closely linked to self-efficacy as factors related to resilience, particularly in the context of learning (Karunaweera & Lee, 2021). The acquisition and application of digital capabilities are shaped by students' self-efficacy beliefs. When students possess a strong belief in their ability to acquire the skills necessary to effectively use digital technologies, they engage actively and persistently in the educational experience (Blondeel et al., 2024). On the other hand, students with low self-efficacy in digital skills are more likely to become disengaged and struggle to complete tasks involving digital activities (Brew et al., 2021). Digital self-efficacy has a significant impact on academic performance (Ulfert-Blank & Schmidt, 2022). Students' academic performance tends to improve when they have confidence in their digital skills and abilities (Clercq et al., 2013; Singh & Kamra, 2016). Academic performance, which is measured by the degree to which intended learning outcomes are achieved, is typically reflected in a student's cumulative grade point average (CGPA) (Hayat et al., 2020). Farrington et al., (2012) described academic performance as a "complex phenomenon" in which "cognitive and non-cognitive elements continuously interact in crucial ways to generate learning." The literature highlights various factors that may influence learners' academic performance (Clercq et al., 2013; Masud et al., 2019). A recent study indicated that students' academic performance was negatively affected during the COVID-19 pandemic, as most classes transitioned to online formats, and students faced difficulties navigating online learning platforms (Benoza & Palaoag, 2023). The authors also emphasized the importance of addressing students' digital capabilities to ensure equitable access to education (Benoza & Palaoag, 2023). Academic performance should be examined from a multifaceted perspective. This study will explore the impact of students' resilience and digital capabilities on adapatability to change, with the role of HEI in adapting organizational learning (Eriksson & Lycke, 2024).

Organizational learning is crucial for HEI in environments characterized by rapid and unpredictable changes. The ability to respond swiftly to change becomes a fundamental condition for developing students, particularly final year students (Purwanto, 2020). The primary challenge is to create a learning environment that encourages students to engage in extra-role behaviors, thereby contributing to improved performance and institutional sustainability (Rehman et al., 2021). Studies have shown that both individual and organizational factors—such as supervisory support, self-efficacy, resilience, and organizational learning—play a significant role in shaping an individual's adaptability to change (Braiteh, 2022; Franken et al., 2023; Kucharska & Bedford, 2020; Sutarni et al., 2022). This study, based on existing literature, seeks to explore these concepts in the educational context and examine the importance of digital learning orientation as a key factor influencing readiness for change. In the context of digital transformation, numerous studies have highlighted the importance of digital literacy, digital ethics, and digital learning in fostering sustainable institutions (Aboobaker & KA, 2020; Bayerlein & Jeske, 2018; S. A. Brown, 2014; Muzaiyanah & Razzaq, 2024). Simultaneously, Kondakci et al., (2019) has indicated that a digital orientation among students does not necessarily lead to improved learning outcomes or job performance, but may instead affect secondary outcomes, such as acting merely

as a support mechanism for academic tasks. Given the conflicting findings in the literature, this study aims to investigate whether organizational learning of HEI impacts final year students adaptability to change. In accordance with the job demands-resources model (Bakker et al., 2014) and social exchange theory (Blau, 1964), and drawing on existing research, we propose that organizational learning is a vital institutional resource that can enhance extra-role behaviors, such as adaptability to change, among final-year students. To the best of our knowledge, no prior research has comprehensively examined the mechanisms by which organizational learning within HEIs influences adaptability to change. The goal is to examine how organizational learning and shifts in knowledge and experience within the organization occur, as well as the challenges that arose over the subsequent decade. From the phenomenon of digital job demand and the explanation above, allow us formulate the following research hypothesis:
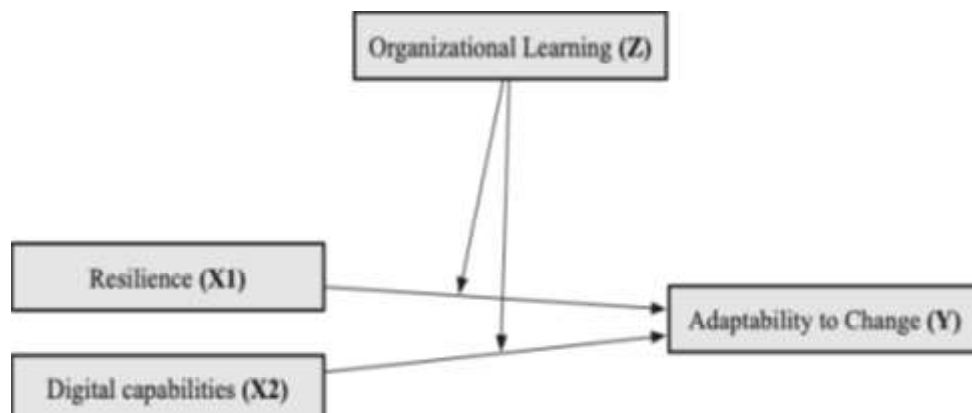
Figure 2 Proposed structured model

H1: Resilience has a significant effect on adaptability to change

H2: Digital capabilities has a significant effect on adaptability to change

H3: Organizational learning moderate the effect of resilience on adaptability to change

H4: Organizational learning moderate the effect of digital capbilities on adaptability to change

■ METHOD

Research Design

In this study, the authors employed a cross-sectional design and utilized a survey approach to collect data through a self-reported questionnaire. A non-probability convenience sampling method was used for data collection. Following Miller (1956) recommendation for studies of this type, a seven-point Likert scale was implemented. Higher scores signified a greater perceived influence or importance for the students, whereas lower scores indicated a lesser influence. Data collection took place between September and November 2024, with the questionnaire distributed online using the Google Forms platform. The questionnaire was designed to gather the necessary data for analysis, and the survey link was disseminated to students via multiple communication channels, including institutional email, class WhatsApp groups, and campus social media. These varied channels ensured that the final-year students in the research sample had access to the questionnaire. Participants were provided with clear instructions on how to access and complete the questionnaire,

with a two-week deadline for submission. To higher response rates, periodic reminders were sent through direct messages and email. Responses were collected through Google Forms, which automatically recorded the data in a spreadsheet format, facilitating efficient data management.

The participants in this study were final-year students from various faculties at a university. Sample consisted of 300 students, representing a diverse range of academic disciplines, including business, engineering, social sciences, and technology. Final-year students were selected, as they are at a critical point in their educational journey, preparing to transition into the workforce. Inclusion criteria required participants to be enrolled in a full-time study program and have completed at least 90% of their coursework, ensuring they possessed the necessary academic experience to engage with the concepts of resilience, digital capabilities, and organizational learning (Hanna et al., 2022). The data gathered from these participants were used to test hypotheses concerning effects of resilience and digital capabilities on adaptability to change, as well as moderating role of organizational learning. However, during data collection process, challenges related to low participation rates among students were encountered. Despite the questionnaire being distributed through various communication channels and reminders being sent, some students still did not complete the questionnaire. This may have been due to a lack of motivation or indifference towards the importance of participating in the study. To address this, the researcher made efforts to increase transparency by providing more detailed explanations about the study's objectives and its potential impact on the development of learning at the institution. In addition, efforts to mitigate this issue included sending more frequent reminders and extending the submission deadline for students who had not yet completed the questionnaire. Nevertheless, the lower-than-expected participation rate remained a challenge that needed to be considered when analyzing the study's results.

Measurements

The four primary constructs in this study are resilience, digital capabilities, organizational learning, and adaptability to change. Resilience was measured using items adapted from Mohan & Verma (2020), including self-belief, persistence, anxiety, and uncertain control. An example item for the self-belief is: "*I believe that I have the ability to learn and master new skills required for success in the digital workforce.*" Digital capabilities were assessed using five indicators adapted from Ibrahim & Aldawsari (2023). The measurement consisted of 15 items from five dimensions: digital independent learning, digital information/data management, digital communication and collaboration, digital creation, and digital identity. An example item for digital communication and collaboration is: "*I feel comfortable creating digital materials (e.g., presentations, infographics, or videos) for course modules using various available digital tools.*" Organizational learning, as defined by Huber (1991), consists of four subprocesses (de Weerd-Nederhof et al., 2002), which include knowledge acquisition, knowledge distribution, knowledge interpretation, and organizational memory. An example item for organizational memory is: "*My institution has an effective system for storing and managing knowledge related to technological developments and digital industry trends, which can be accessed by faculty and students in the future.*" Adaptability to change was measured using the German version of Martin et al., (2012) . The scale includes 4 items addressing cognitive-behavioral adaptability and 4 items addressing affective adaptability. Prior research has documented adequate reliability and validity of

the scale when both factors are combined into a single adaptability factor (Collie et al., 2017; Martin et al., 2015; Martin & Barnard, 2013; Putwain et al., 2020). Martin et al., (2012) recommend combining cognitive-behavioral and affective factors into global indicator to avoid collinearity issues due to their strong interrelatedness, particularly when adaptability is used as a predictor. An example item is: "*I feel flexible in adapting to changes occurring in the digital world.*"

■ **RESULT AND DISCUSSION**

Descriptive Statistics

Demographic distribution of respondents is detailed in Table 1, which involves 300 students from various academic disciplines at a public university. Distribution of academic disciplines shows that sample consists of 68 students from business, 74 students from engineering, 80 students from social sciences, and 78 students from technology. This ensures that a variety of academic perspectives are represented in the findings of this study. Majority of participants are within the 18 to 20 years range (50%), 21 to 23 years accounts for 33.3%, while 16.7% of respondents are aged 23 or older. This indicates a diverse age range within the sample, with most participants being at a transitional stage between HEI and workforce. Respondent distribution shows a dominant participation of female students, with 255 female students (85%) and 45 male students (15%) participating . This gender disparity reflects higher number of female students in many university faculties, though a reasonable balance between male and female participants remains. Overall, this table illustrates the diversity of the sample in terms of academic discipline, age, and gender, which enriches the underst of the variables examined in this research.

Table 1. Descriptive statistic for respondents

Demoraphic Characteristic	Category	Frequency (n)	Percentage (%)
Total Sample Size	-	300	100%
Academic Disciplines	Business	68	23%
	Engineering	74	25%
	Social Sciences	80	27%
	Technology	78	26%
Age	18-20 years	150	50%
	21-23 years	100	33.3%
	23+ years	50	16.7%
Gender	Male	45	15%
	Female	255	85%

Validity & Reliability Construct

Factor analysis was conducted to identify the dimensional structure of the factors influencing final-year students' adaptability to change. As shown in Table 2, the analysis indicates that factors used explain majority of variance in collected data. Total variance explained by all factors in this model is approximately 74.43%, which suggests that model fits the data on measurement quality and construct validity (Podsakoff et al., 2003). Variance reflects how well these factors account for differences in data, and indicates that most of variability in data can be explained by constructs tested. Overall, explained variance value exceeding 70% suggests that this model is reliable for analyzing relationships between variables.

Table 2. Measurement items

Variabel	Indikator	Factor Loading	AVE	Cronbach Alpha
Resilience	Self Belief	0.74	0.527	
	Persistence	0.78	0.495	0.74
	Anxiety	0.67	0.464	
	Uncertain control	0.73	0.532	
Digital capabilities	Digital independent learning	0.75	0.537	
	Digital information/data management	0.78	0.603	
	Digital communication and collaboration	0.80	0.648	0.77
	Digital creation	0.73	0.532	
	Digital identity	0.76	0.575	
Organizational learning	Knowledge acquisition	0.75	0.532	
	Knowledge distribution	0.76	0.567	0.78
	Organizational memory	0.79	0.618	
Adaptation to change	Affective adaptability	0.77	0.594	
	Cognitive-behavioral adaptability	0.75	0.553	0.75

Items used in analysis are those with factor loadings greater than 0.4, with indicators having high factor loadings above 0.7 considered highly relevant and significant for measured construct. Indicators of persistence (0.78) and self belief (0.73) in resilience demonstrate a significant contribution to measuring this construct, as recommended by Hair et al., (2010) that items with factor loadings greater than 0.7 provide excellent contributions. Indicators for anxiety (0.67) and uncertain control (0.73), acceptable for analysis, show slightly lower loadings and may be re-evaluated for future model improvements. The selection of items used is based on statistical standards that support construct validity and internal consistency, as Fornell & Larcker (1981) concerning of AVE and construct reliability. After ensuring unidimensionality, we conducted confirmatory factor analysis (CFA). We examined composite reliability through *Cronbach's alpha*, which yielded a value of 0.78. This value meets the minimum suggestion of Lance et al., (2006), which is 0.7. Construct validity is ensured through both convergent and discriminant validity. According to Molina et al., (2007), for convergent validity, indicators must show loadings greater than 0.7. Hair et al., (2010) recommend that the average variance extracted (AVE) value for a construct should exceed 0.5. Discriminant validity is assessed following Fornell & Larcker (1981) that if the square root of the AVE is greater than correlation values, discriminant validity is confirmed. The discriminant validity results presented in Table 3 fully meet the criteria by Fornell & Larcker (1981).

Goodness of Fit

Goodness of fit of describes how it fits into a set of observations. Among absolute fit indicators, CMIN/DF (also known as $\div 2/df$) is the minimum discrepancy divided by its degrees of freedom. According to values presented in Table 4, all model fit indicators demonstrate exceptional performance. The $\div^2/df$ values for the

Table 3. Constructs' discriminant validity

Construct	Resilience	Digital Capabilities	Organizational learning	Adaptation to Change
Resilience	**0.727**			
Digital Capabilities	0.642	**0.748**		
Organizational learning	0.589	0.677	**0.754**	
Adaptation to Change	0.581	0.634	0.675	**0.735**

measurement model (2.5) and the structural model (2.8) are both below the recommended cutoff of d"3, suggesting a strong fit. The values for NFI, GFI, AGFI, CFI, and TLI for both models exceed the recommended threshold of 0.90, further confirming the model's excellent fit with the data. The RMSEA values of 0.05 for the measurement model and 0.06 for the structural model are both below the suggested threshold of d"0.08, signifying a very good fit. Likewise, the SRMR values of 0.04 and 0.05 for the measurement and structural models, respectively, are well below the recommended upper limit of d"0.08. Overall, these results indicate that both the measurement and structural models are well-aligned with the collected data, supporting the model's validity and suitability for further analysis.

Table 4. Measures of the model fit

Goodness of fit Measures	$\chi2/df$	NFI	GFI	AGFI	CFI	TLI	RMSEA	SRMR
Recommended value	≤3	≥0.90	≥0.90	≥0.90	≥0.90	≥0.90	≤0.08	≤0.08
Measurement Model	2.5	0.92	0.94	0.91	0.96	0.95	0.05	0.04
Structural Model	2.8	0.91	0.93	0.90	0.95	0.94	0.06	0.05

Moderated Regression Analysis

Moderated Regression Analysis (MRA) as analytical technique to determine whether the relationship between independent and dependent variables is influenced by a moderating variable, which can either strengthen or weaken that relationship. This technique is particularly useful for examining interactions between variables in a model, where moderating variable acts as a factor that influences the intensity of the relationship between two other variables (Baron & Kenny, 1986; Hayes, 2013). With MRA, we can investigate whether a variable, in this case, organizational learning, moderates the relationship between resilience and digital capabilities with adaptability to change with hypotheses. Table 5 presents the results of the normality test using the Kolmogorov-Smirnov test for the variables examined in this study, namely resilience, digital capabilities, organizational learning, and adaptability to change. The Asymp. Sig. values for all variables are greater than 0.05, specifically 0.200, 0.185, 0.150, and 0.130 for each respective variable. These results indicate that data distributions for all variables do not significantly differ from a normal distribution, meaning that assumption of normality is met. Therefore, these data meet the necessary conditions for conducting further regression analysis.

Table 5. Normality analysis

	Resilience	Digital Capabilities	Organizational Learning	Adaptability to Change
Kolmogorov-Smirnov	1.023	1.056	1.012	1.089
Asymp. Sig. (2-tailed)	.200	.185	.150	.130

Table 6 presents the results of the multicollinearity analysis using tolerance values and Variance Inflation Factor (VIF). For resilience, digital capabilities, and organizational learning, the tolerance values are above 0.1, and the VIF values are below 10, indicating that there is no significant multicollinearity issue among the independent variables in model. Tolerance values range from 0.800 to 0.900, and VIF values range from 1.18 to 1.25, suggesting that all independent variables have weak intercorrelations with each other, and therefore, the regression model can proceed without concerns about multicollinearity.

Table 6. Multilcollinearity analysis

Model	Coefficients	Std. Error	Tolerance	VIF
Constant	2.150	.500	-	-
Resilience	.300	.080	.850	1.18
Digital Capabilities	.450	.070	.800	1.25
Organizational Learning	.250	.090	.900	1.11

Table 7 presents results of hypothesis testing for relationship between independent variables (resilience, digital capabilities, and organizational learning) and dependent variable (adaptability to change). For all independent variables, regression coefficients (C) indicate a significant effect. Resilience shows a significant positive coefficient in all three models, with t-statistics greater than 2.00 and p-values less than 0.05, suggesting resilience has a positive influence on adaptability to change. Similarly, digital capabilities also have a significant effect on adaptability to change, with t-statistics greater than 2.00 and p-values less than 0.05.

Table 7. Hypotheses analysis

Independent Variabel	Dependent Variable								
	Y(i)			Y (ii)			Y (iii)		
	C	t-Stats	Sig	C	t-Stats	Sig	C	t-Stats	Sig
Constant	2.10	5.20	.000	1.80	4.75	.000	2.30	5.50	.000
Resilience	.45	3.15	.002	.50	3.30	.001	.55	3.60	.000
Digital Capabilities	.30	2.50	.012	.35	2.80	.006	.40	3.00	.004
Organizational Learning	.15	1.90	.058	.20	2.10	.035	.25	2.25	.027
X1*Z	.10	2.20	.028	.12	2.35	.020	.15	2.40	.018
X2*Z	.08	2.00	.046	.10	2.25	.025	.13	2.30	.022
Adjusted R^2	.78	-	-	.80	-	-	.82	-	-

Organizational Learning as Moderation

Organizational learning shows a significant positive effect on adaptability to change in two models, with t-statistics greater than 2.00 and p-values less than 0.05. These results indicate that organizational learning moderates relationship between independent variables and adaptability to change. The interaction coefficients between resilience and organizational learning (X1*Z) as well as digital capabilities and organizational learning (X2*Z) also show significant effects with *p*-values less than 0.05 in all three models tested. This reinforces that organizational learning enhances influence of resilience and digital capabilities on adaptability to change. Analysis results indicate that resilience, digital capabilities, and organizational learning have a significant positive impact on adaptability to change. Organizational learning acts as a moderating variable that strengthens the relationship between resilience, digital capabilities, and adaptability to change. The Adjusted R^2 values in the third model demonstrate excellent model fit, with values of 0.78, 0.80, and 0.82 for three regression models tested, approximately 78% to 82% of the variability in adaptability to change can be explained by resilience, digital capabilities, and organizational learning. These findings emphasize the importance of organizational learning in supporting individuals' readiness to adapt to changes in the digital environment.

H1 : Resilience Has a Significant Effect on Adaptability to Change

Based on results of multiple regression analysis to see the influence of the resilience (X1) and digital capabilities (X2) variables before entering the moderation variables as in table Y (i) the resilience variable (X1) has a sig. value of 0.002 (p-value <0.05) with a regression coefficient of 0.45 which means that resilience has a positive and significant effect on the adaptability to change variable. The results reveal that resilience has an influence on adaptability to change. Student resilience refers to the ability to manage stressors and adapt to challenges in both academic and personal. This concept involves sustaining psychological well-being despite the pressures of schoolwork and personal difficulties (Sarkar & Dutta, 2024; Sung & Kim, 2023). Resilient students are characterized by their capacity to "bounce back" from setbacks, showing persistence, motivation, and effective coping mechanisms that help alleviate stress. Resilience can be divided into several categories: emotional resilience, social resilience, academic resilience, and mental resilience, each playing a crucial role in guiding students through the inherent challenges in education and personal growth (Bediako et al., 2023; Toirjonovich, 2023). Emotional resilience enables students to regulate their emotional responses to adversity; emotionally resilient students manage disappointment and anxiety with coping strategies, maintaining optimism even under stress (Ünaldý et al., 2024). Social resilience focuses on sustaining relationships during times of change, as socially resilient students actively seek support from peers and educators while positively engaging in their communities (Ananda, 2023). Academic resilience reflects students' determination to continue their educational efforts despite obstacles, viewing challenges as opportunities for growth (Liaqat et al., 2023). Mental resilience involves mental strength, equipping students to endure psychological stress through positive thinking and effective problem-solving skills (Nadmilail et al., 2023). Additionally, various factors, such as internal and external support systems, play a significant role in shaping graduate outcomes related to career development and employability. These support networks function as social assets, providing emotional, informational, and practical assistance that is essential for career progression and future career opportunities (Bouchrika et al., 2021). Within the

university environment, faculty members, career service centers, and peers are pivotal in equipping students for career placements and job-seeking activities. Faculty, career services, and peer interactions collectively strengthen students' readiness for these professional pursuits (Baluku et al., 2021). In turn, it contributes to adaptability to change, with career readiness serving as a key predictor of employability. This suggests a substantial link between career adaptability and the successful attainment of entry-level positions by HEI graduates. Additionally, it is crucial to recognize the importance of transferable skills— those universally applicable competencies that prove valuable across various roles and fields.

Resilience has a significant influence on adaptability because it enables students to overcome various challenges, both in academic and personal . When facing change, particularly those brought about by technological advancements, students with higher levels of resilience tend to cope better and adapt more effectively compared to those with lower resilience. When confronted with rapid changes in educational technologies or increasing digital demands, resilient students can leverage their coping mechanisms, such as careful planning, acceptance of change, and motivation to continue learning, to overcome these challenges without becoming overwhelmed (Abdolrezapour et al., 2023). Resilience allows them to manage stress and anxiety arising from uncertainty and change, which in turn strengthens their ability to adapt to changes in their environment, both within academic settings and beyond the campus (Mohan & Verma, 2020). The theory of resilience, as proposed by Luthans et al., (2006), suggests that resilience is the capacity of an individual to recover and function optimally despite facing stress or adversity. Students with high resilience tend not only to survive challenges but also to thrive from those experiences. This aligns with adaptation theory, which emphasizes the importance of an individual's ability to adjust to new situations and changing environments (Kontoghiorghes et al., 2005). Resilient individuals are typically more open to change and innovation, viewing challenges as opportunities for growth rather than insurmountable obstacles. The resilience that students possess not only helps them to address short-term issues but also establishes a foundation for long-term resilience, which is crucial in an ever-evolving workforce, particularly one influenced by rapid technological progress. Thus, resilience plays a critical role in preparing students to face technological changes in both the educational and career domains.

H2 : Digital Capabilities Has a Significant Effect on Adaptability to Change

Digital capabilities variable (X2) has a sig. value of 0.012 (p-value <0.05) with a regression coefficient of 0.30 which means that digital capabilities (X2) have a positive and significant effect on the adaptability to change variable. Digital capabilities within educational organizations are defined as "the skills, talents, and abilities that enable an individual to live, learn, and function within a digital society" (Brown et al., 2020; Bullen et al., 2011; Idris et al., 2012; Rahmat et al., 2021). Additionally, the concept of digital capabilities refers to how effectively students can apply critical thinking and problem-solving skills when using digital tools and resources (Akour & Alenezi, 2022; Austen et al., 2016). In response, digital capability frameworks have been developed to empower students to meet the demands of digital competency (Bravo et al., 2021; Elphick, 2018). One such framework is the Joint Information Systems Committee (JISC) framework, which is specifically designed to encourage the use of digital technology in education (Lee & Fanea-Ivanovici, 2022). The JISC framework includes capabilities and supporting elements across six domains (Elphick, 2018). The model's focus is on digital skills and

productivity, with five other categories: digital creation, problem-solving, and innovation; digital learning and development; digital identity and well-being; information, data, and media literacy; and digital communication, collaboration, and participation (Johnston et al., 2018; Sandhu, 2018). There is a common assumption that students possess advanced digital skills simply because they are considered the "digital generation" (Kennedy et al., 2010). This raises the question of whether students actually the digital competencies have needed to locate, evaluate, and, more importantly, analyze information (Nes et al., 2021). Consequently, educational institutions must ensure that students employ critical thinking skills in their interactions within the digital world (Akour & Alenezi, 2022). This argument is reinforced by a study that examined digital competency levels among nursing students (Kaya Kaçar et al., 2024) Learning digital skills has become a crucial topic in university education, with its impact on students' adaptability to the evolving workforce increasingly highlighted due to technological advancements.

Moreover, the assumption that students naturally possess advanced digital skills simply because they belong to the "digital generation" is often misleading (Kennedy et al., 2010). In reality, many students lack the digital competencies required to analyze and evaluate information critically, which are crucial for adapting to the digital changes occurring in the workforce (Nes et al., 2021). This highlights the need for educational institutions to intentionally teach students how to use digital tools for critical thinking and problem-solving, ensuring that they are prepared to face the challenges posed by rapidly evolving technologies (Leonardi & Treem, 2020). As digital literacy becomes a cornerstone of success in the modern workforce, fostering these capabilities within students not only enhances their technical proficiency but also strengthens their ability to respond flexibly to the ever-

changing digital landscape. Digital capabilities empower students to remain resilient and adaptable to change (Ibrahim & Aldawsari, 2023). By developing not only technical skills but also cognitive abilities such as problem-solving, critical thinking, and innovation, students can effectively manage the challenges of a digital world. Educational institutions must therefore prioritize digital competency training, ensuring that students are equipped with the necessary tools to thrive in an increasingly digital and unpredictable workforce. This focus on digital capabilities is not just about technology, but about enabling students to think critically, adapt quickly, and contribute meaningfully to the ever-evolving professional landscape.

H3: Organizational Learning Moderate the Effect of Resilience on Adaptability to Change

The results of the moderate regression analysis (MRA) stage 1 as seen in table Y (ii) obtained the results that the Z variable, which is a moderating variable, successfully moderated the influence of the resilience variable (X1) on adaptability to change (Y) after entering the interaction of the X1*Z variables with a sig. value of 0.020 (p-value <0.05) meaning that this study found a moderating effect of organizational learning in the influence of resilience on adaptability to change. Based on the regression results above, it was found that organizational learning moderates the resilience on adaptability to change. Organizational learning within higher education institutions can play a significant role in enhancing final-year students' adaptability to technological advancements. Senge (1990) identified four essential disciplines to establish a learning organization: personal mastery, mental models, shared vision, and team learning. As a learning organization, a higher education institution fosters an environment that supports personal mastery, shared vision, and team learning, along

with systems thinking to identify and address patterns of change. This structured approach allows institutions to create, retain, and transfer knowledge effectively, helping students internalize new insights and skills relevant to technological shifts (Garvin, 1994). Tuggle (2016) reviewed research on learning organizations (1994–2013) and identified five major themes:

(1) Mechanisms of organizational learning.
(2) The role of organizational learning in achieving organizational success.
(3) The impact of organizational learning on a firm's financial performance.
(4) The significance of culture and knowledge sharing in organizational learning; and
(5) The relationship between individual learning and organizational learning.

Örtenblad (2018) identifies four distinct forms of the learning organization: learning within the workplace, a climate conducive to learning, organizational learning processes, and a structure that facilitates learning. A learning organization, as "learns as if it were an individual, becoming a learning unit in itself," with the underlying premise that a supportive climate for learning exists (Örtenblad, 2018). Context-specific models are proposed, suggesting that organizations face unique challenges and must develop their own customized approaches to becoming learning organizations (Örtenblad, 2015). In practice, such an environment enables students to develop adaptability by engaging them in hands-on learning experiences and promoting knowledge-sharing practices across disciplines. A climate that encourages continuous learning and a supportive organizational structure (Örtenblad, 2018) provides students with both the resources and the collaborative culture they need to respond effectively to technological changes. Moreover, sustainable organizational learning—incorporating dimensions like learning orientation, processes, and leadership (Battistella et al., (2021)—

emphasizes adaptability as strategic priority, integrating digital skills and innovative thinking into the curriculum. By embedding learning structures and leadership that emphasize continuous development and strategic thinking, organizational learning amplifies the resilience of final-year students, enabling them to approach technological changes with adaptability and a proactive mindset. This focus on learning processes and social learning highlights that sustainability reinforces both a culture of learning and a strategic approach to learning (Örtenblad, 2018). Additionally, learning processes emphasize internal structures, networking values, shared leadership, and self-managed teams (Battistella et al., 2021).

H4: Organizational Learning Moderate the Effect of Digital Capabilities on Adaptability to Change

In moderate regression analysis test stage 2 after entering the interaction of variables X2*Z, a moderating effect of organizational learning was also found in the influence of digital capabilities on adaptability to change with a sig. value of 0.022 (p-value <0.05), which means that the organizational learning variable can moderate the influence of digital capabilities on adaptability to change. Based on the results of the data analysis, it was found that organizational learning can moderate digital capabilities on adaptability to change. Organizational learning allows members to actively acquire external knowledge, deepening their understanding of emerging technologies and fostering innovation-focused learning behaviors (Chiva et al., 2014). This proactive engagement with new knowledge and innovation helps institutions create an environment where students are more attuned to technological advancements, equipping them with the skills needed to adapt in rapidly evolving environments. Institutions that effectively implement learning mechanisms can leverage this knowledge for competitive

advantage, as it not only strengthens the organizational structure but also directly benefits students by providing them with relevant and adaptable skills (Oh & Han, 2020; Zafar et al., 2016). By fostering a culture of continuous learning, institutions ensure that organizational learning becomes an intrinsic part of their framework, preparing students to navigate change with resilience and adaptability. Additionally, organizational learning enhances adaptability and resilience among students by equipping them with the necessary resources to anticipate and respond effectively to technological and environmental shifts (Daft, 2007). This capability is particularly significant for final-year students as they transition into the workforce, where the demand for digital skills and adaptability is high. The ability to adapt to new circumstances and apply learned knowledge becomes an asset, empowering students to thrive in complex and changing environments. Thus, organizational learning not only benefits the institution but also has a long-term impact on students' capacity to succeed and innovate in their future careers.

Organizational learning plays a pivotal role in enhancing the effectiveness of resilience and digital capabilities in the face of change, particularly by fostering a mindset of continuous learning and establishing systems for knowledge sharing. In an environment that is rapidly evolving, particularly with technological advancements, organizational learning creates opportunities for students to develop both the cognitive and emotional flexibility needed to adapt (Kontoghiorghes et al., 2005). A key component of organizational learning is the establishment of knowledge-sharing systems, which encourage students to collaborate and exchange insights about emerging technologies (Anshari & Hamdan, 2022). These systems create a dynamic learning environment where students are empowered to learn from their peers and faculty, which improves their ability to cope with and

adapt to technological shifts in the workplace. For instance, through collaborative learning initiatives and teamwork, students can actively share knowledge about new digital tools, software, or practices that are essential for success in the digital era. This not only facilitates the acquisition of relevant digital skills but also cultivates a sense of adaptability, as students learn how to work together in teams to solve complex problems and innovate. By integrating these new technologies into their learning process and collaborative environments, students become more prepared to handle challenges that arise in the workplace. As organizational learning fosters this exchange of knowledge, students develop a deeper understanding of how to apply their digital capabilities in a constantly changing environment. Furthermore, organizational learning promotes the development of a "learning mindset," where students are encouraged to embrace change, view challenges as learning opportunities, and continuously refine their skills. This mindset helps improve resilience, as students become more equipped to handle uncertainty and setbacks. In a rapidly changing world, those who possess a learning mindset are better able to remain flexible and adapt quickly to technological disruptions or workplace changes. This process of learning, unlearning, and relearning enables students to not only retain relevant knowledge but also to build the confidence and resilience required to thrive in challenging environments. Consequently, organizational learning does not just enhance students' digital capabilities but also supports their broader ability to adapt and succeed in the digital workplace, where technology and knowledge continue to evolve at a rapid pace.

■ **CONCLUSION**

Based on the results of the study, it can be concluded that resilience has a positive and significant effect on adaptability to change, digital capabilities also have a positive and significant

effect on adaptability to change. Organizational learning moderates the effect of resilience on adaptability to change. Furthermore, organizational learning also moderates the effect of digital capabilities on adaptability to change. Furthermore, seen from the R Square value, information is obtained that before the moderation variable is entered, the R^2 value is 0.78, meaning that the effect of the independent variable on the dependent variable is 78%. Furthermore, after entering the stage 1 moderation variable in the X1.Z model, the R^2 value is 0.80, meaning that the effect of the independent variable on the independent variable is 80% and after entering the stage II moderation variable in the X2.Z model, the R^2 value is 0.82, meaning that the effect of the independent variable on the independent variable is 82%. In essence, the higher R^2 in Stage II (82%) implies that the additional moderation variable has slightly improved the model's explanatory power, suggesting a better fit or a stronger relationship between the independent and dependent variables when both moderating factors are considered. Based on the results of this study, several recommendations can be made for HEI. First, HEI should enhance programs that support students' resilience and digital capabilities. Resilience has been shown to positively influence adaptability to change, suggesting that HEI could develop training focused on stress management, mental health support, and coping strategy development. Furthermore, strengthening students' digital skills is essential, as these capabilities significantly support adaptability. Digital literacy programs that emphasize effective use of digital tools and resources can equip students to meet the challenges of an ever-evolving digital landscape. Second, HEI should consider the critical role of organizational learning as a moderating variable that strengthens the relationship between resilience and digital capabilities with adaptability. Organizational

learning can amplify the effects of resilience and digital skills, enhancing students' ability to adapt to environmental changes, and foster a learning environment that promotes collaboration, innovation, and problem-solving, ultimately preparing students more effectively for entry into a dynamic workforce.

Based on the findings , HEI can develop specialized training programs focused on enhancing students' resilience and digital capabilities to prepare them for the rapid changes in the professional world. Resilience training programs could include workshops that teach stress management skills, change management, and mental fortification to help students cope with academic and social challenges. On the other hand, digital capability training should include intensive sessions on the latest technologies, such as programming, data analysis, and artificial intelligence, to enable students to adapt to technological advancements. These training programs can be integrated with digital simulation classes that challenge students to apply their technological skills in real-world scenarios, thus improving their practical abilities to adapt to technological changes. Additionally, HEI need to create learning environments that support interdisciplinary collaboration to facilitate students' adaptation to complex situations that require collaboration across various fields of study. By forming multidisciplinary project teams, students can learn how to work with different perspectives, solve problems together, and share diverse knowledge and skills. To further enhance resilience and digital capabilities, HEI could implement case-based resilience training, where students are given real-world challenges that test their problem-solving abilities under conditions of uncertainty. Through this experience, students not only sharpen their skills in facing change but also learn how to innovate and find creative solutions to problems that arise in the professional world.

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