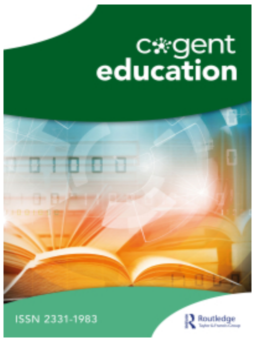

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The role of entrepreneurship education in the entrepreneurial readiness of generation Z students: why do digital business literacy and financial literacy matter?

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ABSTRACT

Entrepreneurship has become a central issue in an effort to improve the nation's economic welfare. Several previous studies agree that the ideal country is one that has an entrepreneurial contribution of at least 4% of its total population. However, when compared with other countries, Indonesia's entrepreneurial contribution is currently still low because it has only reached an entrepreneurial ratio of 3.47%. One of the causes of this low contribution is the lack of effective entrepreneurship education. Some empirical evidence has not been able to explain how entrepreneurship education is able to prepare generation Z to become entrepreneurs through various new literacies. This research aims to investigate the influence of entrepreneurship education on the entrepreneurial readiness of generation Z students, which is moderated by digital business literacy and financial literacy. This research was conducted using a quantitative approach and involved 700 students in Makassar City, Indonesia. The data analysis technique used is partial least squares structural equation modeling (PLS-SEM) analysis. Research findings show that entrepreneurship education plays an important role in the entrepreneurial readiness of generation Z students, which is strengthened by digital business literacy and financial literacy. The findings of this research can help expand and develop concepts related to digital business literacy and financial literacy in the context of entrepreneurship education in higher education, so that, by implication, this research provides a valuable contribution to entrepreneurship education, which paves the way for further research regarding entrepreneurial readiness in the context of diverse higher education through various other new literacies.

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1. Introduction

Entrepreneurship has become a central issue in both developed and developing countries in an effort to improve the nation's economic welfare (Värlander et al., 2020; Wardana et al., 2023; Yi, 2021). Several previous studies agree that an ideal country is one that has an entrepreneurial contribution of at least 4% of its total population (Rahayuningsih et al., 2023). Compared with countries such as Singapore, Brunei Darussalam, and Malaysia, Indonesia's entrepreneurial contribution is currently still low because it has only reached an entrepreneurial ratio of 3.47%. Research findings Handayati et al. (2020) found that one of the causes of the low contribution was the lack of effective entrepreneurship education.

Generation Z includes individuals born between 1995 and 2012, categorized as young people, and is the largest contributor to unemployment in Indonesia based on data from the Central Statistics Agency (BPS) regarding the open unemployment rate in Indonesia as of August 2023 of 5.32% (Sitompul & Athoillah, 2023). Entrepreneurship education programs at various levels of education, including higher

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education, target the younger generation as the main target, with various efforts made to change their mindset from just job seekers to potential entrepreneurs. To reduce the number of unemployed at a young age and encourage entrepreneurial activity, entrepreneurial readiness is needed by every college student. Entrepreneurial readiness is a condition where individuals feel ready to face various situations in the world of entrepreneurship, armed with abilities, will and desires. Through this entrepreneurial readiness, a person's entrepreneurial spirit can develop, and their potential can be realized.

Students' entrepreneurial readiness can be created through entrepreneurship education in higher education which is useful for encouraging entrepreneurship to create their own jobs. With the existence of entrepreneurship education, especially in universities, it is hoped that it can give rise to a creative culture that contributes to job creation and becomes a means of spreading entrepreneurial values to society (Lackéus, 2015; Saptono et al., 2021). Saptono et al. (2020) states that entrepreneurship education is effective in preparing someone for entrepreneurship. The key role of entrepreneurship education in higher education is to provide important skills for starting a business and facing various challenges in entrepreneurial life. Increasing the quality of entrepreneurship education is also associated with increasing the number of entrepreneurial skills (Fayolle, 2018). A person who has diverse skills is better prepared to become an entrepreneur (Aldén et al., 2017). In this case, entrepreneurship education is an important factor to help increase knowledge and shape a person's entrepreneurial mentality. Therefore, it is important to evaluate the influence of entrepreneurship education on entrepreneurial readiness in Indonesia, especially at the tertiary level.

In the last few decades, many researchers have conducted research regarding the relationship between entrepreneurship education and entrepreneurial readiness (Coduras et al., 2016; Ruiz et al., 2016; Saptono et al., 2020). Apart from that, several studies also focus on examining the critical role of entrepreneurship education and entrepreneurial preparation (Ni & Ye, 2018; Tung et al., 2020). Research by Cahyani et al. (2022) and Yaghoubi Farani et al. (2017) found that entrepreneurship education does not have a direct effect on entrepreneurial readiness but is influenced by an entrepreneurial mindset and entrepreneurial skills. Apart from that, conventional business literacy also intervened (Maula et al., 2021) and financial literacy (Struckell et al., 2022). However, there are still few researchers who look at the influence of entrepreneurship education on entrepreneurial readiness through digital business literacy and financial literacy, especially in the case of Indonesia. Although financial literacy has been considered previously, this research seeks to explore how financial literacy and digital business literacy can jointly moderate the influence of entrepreneurship education on entrepreneurial readiness.

This paper contributes to the literature on generation Z's entrepreneurial readiness in several ways. First, the contribution to the literature is by elaborating on digital business literacy and financial literacy, which were not present in previous research as moderating entrepreneurship education on entrepreneurial readiness in higher education. Second, through a theoretical approach, this research can help expand and develop concepts related to digital business literacy and financial literacy in the context of entrepreneurship education in higher education. Third, research can provide valuable insights for the government to improve entrepreneurship education programs, digital business literacy, and financial literacy for Generation Z students, which can stimulate entrepreneurial growth in Indonesia. Apart from that, this research also provides insight that can help prepare Generation Z students to be more competitive in the ever-growing digital business world.

This article is organized into five parts. Each section has an important role in providing a comprehensive understanding of each section and subsection in this research. The first section provides a brief overview of the background and novelty of the research, as well as the urgency of the research. The second part seeks to explore the development of theory and several previous studies so that theoretical facts can be built that provide a theoretical foundation and conceptual framework that support the development of hypotheses. The third section concerns the research methodology that provides sufficient details for other scientists to reproduce the experiments presented in this paper. The fourth section contains research findings, which attempt to answer each hypothesis developed by focusing on the variables studied. The results of the research discussion are divided into seven sections according to the research hypotheses that have been proposed. This section is crucial because it presents the empirical data and main findings of the research and discusses the results in detail. The final section is a conclusion presenting the results of the work by interpreting the findings at a higher level of abstraction than the research findings section, as well as connecting these findings with the objectives stated in the first section. This section also describes the theoretical and practical implications of the findings of this research.

2. Literature review

2.1. Entrepreneurship education

The need for entrepreneurship is increasing along with advances in the field of education, which plays an important role in shaping people's attitudes, behaviors, mindsets, and intentions to become entrepreneurs (Alshebami et al., 2020; Olugbola, 2017). Entrepreneurship education is a whole educational activity with the ultimate goal of developing students' entrepreneurial intentions (Li & Wu, 2019). Research by Staniewski and Szopiński (2015) revealed that entrepreneurship education programs function as catalysts to increase the level of individual readiness for entrepreneurship. Research by Jena (2020) and Bazkiaei et al. (2020) found that entrepreneurship education prepares students to start new businesses by integrating experience, skills, and knowledge. The entrepreneurship education model in higher education equips students with the skills to pursue an entrepreneurial career, especially in entrepreneurship lecture materials (Delić et al., 2016; Mukhtar et al., 2021). This implies that entrepreneurship education has a strong correlation with entrepreneurial readiness.

When viewed from a digital entrepreneurship perspective, entrepreneurship education is also considered a driving factor in the formation of digital business literacy (Tóth-Pajor et al., 2023; Wibowo et al., 2024). Digital business literacy is increasingly becoming an important element in the current era of globalization. Several previous studies also recognized the significant benefits offered by digital business literacy when viewed from a digital entrepreneurship perspective, including convenience for creativity and the creation of innovation, which is important in entrepreneurial activities (Kraus et al., 2019). With good digital business literacy, it will bring more opportunities for entrepreneurs to involve digital platforms, especially the internet, mobile technology, and digital media, which support the development of new business models (Autio et al., 2018; Mivehchi, 2019). Research by Mugiono and Wahyono, (2021) and Rahmi and Cerya (2020) shows that entrepreneurship education and digital literacy have a significant influence on each other. In the context of digital entrepreneurship, entrepreneurs with sufficient digital knowledge can develop better products or services to meet market tastes and demands (Wibowo et al., 2023). Entrepreneurs with digital business literacy will also be more skilled at facing opportunities, bringing about change, and utilizing resources optimally and effectively.

Entrepreneurship education directs students to learn knowledge to be put into practice (Rahman et al., 2022). Several recent studies believe that entrepreneurship education can provide knowledge and mindset, which in turn influence innovative activities and risk-taking in business (Wardana et al., 2020). Entrepreneurship education will educate someone about how to make economic decisions and how to think about or know economic concepts, so it is hoped that it can create economic literacy (Hasan et al., 2019). For a business to run well, entrepreneurs need to have a strong understanding of finance (Rapina et al., 2023). Entrepreneurship education often includes aspects of financial management and business planning. Research by Calcagno et al. (2019) found that entrepreneurship education has a direct and positive effect on financial literacy. Therefore, this research provides the following hypothesis:

H1: Entrepreneurship education has a positive and significant effect on the entrepreneurial readiness of generation Z students.

H2: Entrepreneurship education has a positive and significant effect on the digital business literacy of generation Z students.

H3: Entrepreneurship education has a positive and significant effect on the financial literacy of generation Z students.

2.2. Digital business literacy

Digital literacy is the ability to understand and apply knowledge in various media, with a focus on critical thinking skills and not just proficiency in information and communication technology (Chan et al., 2017). Mastery of digital literacy is one measure of success in the education and economic sectors

(Wardana et al., 2023). Digital literacy can improve graduates' employability because it empowers them to succeed in business in the digital economy (Liu et al., 2020). In addition, a number of studies note that many opportunities for entrepreneurial activity are stimulated through digitalization (Karyaningsih et al., 2020; Kraus et al., 2019).

Digital business literacy and entrepreneurial readiness are two aspects that complement each other. An individual's ability to understand, use, and adapt to digital technology in business situations is referred to as digital business literacy. In the future, digital entrepreneurship education and training can maximize adequate knowledge regarding digital entrepreneurship (Nambisan, 2017; Von Briel et al., 2021). This makes entrepreneurial knowledge more accessible and available, helping them strengthen their knowledge base and improve their skills in managing a business (Wijayanto et al., 2023). Several previous studies found that digital business literacy determines entrepreneurial success in an increasingly connected and sophisticated digital era (Dutot & Van Horne, 2015; Elia et al., 2020). Increasing digital business literacy can help increase someone's entrepreneurial readiness, and conversely, entrepreneurial readiness can motivate someone to deepen their knowledge about digital business. Therefore, this study proposes the following hypothesis:

H4: Digital business literacy has a positive and significant effect on the entrepreneurial readiness of generation Z students.

2.3. Financial literacy

Financial literacy refers to knowledge or education related to money, assets, bank accounts, investments, credit, insurance, taxes, and how to use this financial information when making individual financial plans effectively (Rapina et al., 2023). Financial management is one element that can influence a person's level of readiness to enter the world of entrepreneurship (Ahmad et al., 2019). Financial literacy helps individuals understand how to manage their finances well. Several previous studies found that financial literacy influences individual financial behavior, and as a person's financial literacy increases, their ability to manage finances effectively also increases (Akca et al., 2018; Arofah et al., 2018; Ahmad et al., 2020).

To create effectiveness and efficiency in a managed business, a person must know how to manage finances properly, both in terms of knowledge and practice, so that they can make the right decisions (Anggraini et al., 2023). Prisca (2016) and Li and Qian (2020) found in their research that, on average, those who have a higher level of financial literacy have a greater capacity for business performance. These findings indicate that financial literacy is beneficial to business performance for an entrepreneur, as it helps to implement strategic decisions and plan better budgeting processes. The research results of Chhatwani and Mishra (2021) also found that financial literacy plays an important role for individuals in reducing their financial vulnerability. If an entrepreneur has a good level of financial skills, it will help him prepare good financial plans and decisions (Struckell et al., 2022). Therefore, this research provides the following hypothesis:

H5: Financial literacy has a positive and significant effect on the entrepreneurial readiness of generation Z students.

2.4. Entrepreneurial readiness

Entrepreneurial readiness is a person's capacity or willingness to carry out entrepreneurial activities (Coduras et al., 2016). Entrepreneurship education seeks to educate someone to be good at reading opportunities and making business plans so that business success can be achieved. Entrepreneurship education seeks to educate someone to be good at reading opportunities and making business plans so that business success can be achieved (Olugbola, 2017; Arifin et al., 2024). The findings of Wicaksono Ardiansyah et al. (2023) found that entrepreneurship education can increase digital marketing literacy, and digital marketing literacy can increase online business readiness. Digital entrepreneurship education can help develop digital business literacy and skills that are important for entrepreneurship in the digital era (Sitaridis & Kitsios, 2023). Good and quality entrepreneurship education will produce students who have the competent skills to start a business. In today's digital era, digital business literacy skills are essential to support someone's intentions for starting a business.

Entrepreneurship education can increase financial literacy, which in turn can improve entrepreneurial skills and readiness (Çera et al., 2021). In line with research by Mahmudin (2023), entrepreneurship education not only produces future entrepreneurs who are financially successful but also stimulates the development of an entrepreneurial mentality that is critical, innovative, responsible, and ready to face global economic challenges. The knowledge and abilities gained through education result in responsible financial behavior, which can ultimately contribute to the operational success of a business (Rapina et al., 2023). Therefore, this research provides the following hypothesis:

H6: Entrepreneurship education has a positive and significant effect on the entrepreneurial readiness of generation Z students through digital business literacy.

H7: Entrepreneurship education has a positive and significant effect on the entrepreneurial readiness of generation Z students through financial literacy.

3. Research methodology

3.1. Data and sample collection

The research method applied is a quantitative approach. In this research, entrepreneurship education was used as the independent variable (X), generation Z's entrepreneurial readiness as the dependent variable (Y), and digital business literacy (Z1) and financial literacy (Z2) as moderator variables (see Figure 1). Data was obtained through direct observation of research objects, distributing questionnaires, and carrying out documentation. The respondent criteria used were (1) born in 1996–2010 and (2) having had or are currently undertaking an entrepreneurship education process. This research was conducted from August 2023 to December 2023. This research questionnaire includes 49 statement items, followed by respondent profiles and research variables. Next, the research determined each construct using a five-point Likert scale from 'strongly disagree' (1) to 'strongly agree' (5).

The population of this research is Generation Z, who live in Makassar City. Based on the Slovin formula calculation (Serdar et al., 2021), this study used a population of 387,149 people with a minimum sample limit of 700 people (see Table 1). This research uses a non-probability sampling method with an accidental sampling technique (convenience sampling). In determining the number of samples, grouping was carried out according to levels (strata) by applying the proportionate stratified random sampling technique. In determining the number of samples, grouping was carried out according to levels (strata) by applying the proportionate stratified random sampling technique. This method involves sampling from members of the population by proportional division according to the formula $n = N/(1 + Ne2)$ (Serdar et al., 2021).

3.2. Statistical tools and methods

To analyze the research data, structural equation modeling partial least squares (SEM-PLS) analysis was used using SmartPls (version 4.0). SEM PLS can help researchers understand the relationship between a series of observed variables (Hair & Sarstedt, 2019). SEM PLS assesses complex relationships among

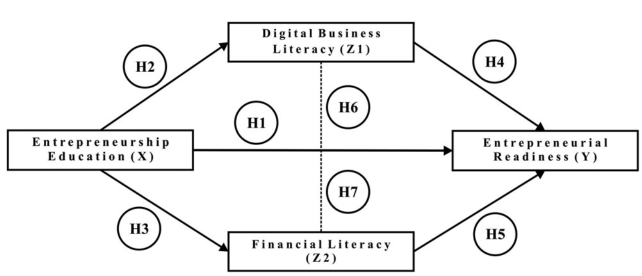

Figure 1. The Research Framework.

Table 1. Number of respondents.

No	Subdistrict	Number of generation Z[a]	Number of samples $n_i = N_i/N \times n$
1.	Mariso	15.602	28
2.	Mamajang	14.969	27
3.	Tamalate	50.641	91
4.	Rappocini	37.846	68
5.	Makassar	21.675	39
6.	Ujung Pandang	6.139	11
7.	Wajo	7.546	12
8.	Bontoala	14.677	26
9.	Kepulauan Sangkarang	4.284	7
10.	Tallo	40.958	74
11.	Panakkukang	37.601	68
12.	Manggala	41.375	74
13.	Biringkanaya	59.732	108
14.	Tamalanrea	27.660	50
15.	Ujung Tanah	9.687	17

[a]Source: Makassar municipality in figures (2023).

Table 2. Respondent demographic profile.

No	Aspect	Frequency	Percentage (%)
1.	**Gender**		
	Male	322	46
	Female	378	54
2.	**Age**		
	15-18 Years	266	38
	19-22 Years	392	56
	23-26 Years	42	6
3.	**Domicile (District)**		
	Mariso	63	9
	Mamajang	63	9
	Tamalate	63	9
	Rappocini	63	9
	Makassar	56	8
	Ujung Pandang	28	4
	Wajo	28	4
	Bontoala	42	6
	Kepulauan Sangkarang	14	2
	Tallo	42	6
	Panakkukang	63	9
	Manggala	56	8
	Biringkanaya	49	7
	Tamalanrea	35	5
	Ujung Tanah	35	5

multidimensional constructs simultaneously (Arthur et al., 2023). Partial Least Squares (PLS) analysis consists of two submodels, namely the measurement model and the structural model.

4. Results and discussion

4.1. Descriptive statistics

Table 2 provides the demographic characteristics of the participants. Referring to the table, it can be seen that the survey participants are generation Z students in Makassar City, Indonesia, who are in the age range of 15-26 years and are dominated by female students. The highest age percentage is 19-22 years old, which reaches 56%, while the lowest is 23-26 years old, at 6%. Apart from that, the participants also came from different sub-districts.

4.2. Outer and inner assessment model results

This research uses four indicators for the outer assessment model, namely convergent validity, discriminant validity, composite reliability, and construct reliability (see Table 3 and Figure 2). The results of convergent validity statistics show that all variables, including entrepreneurship education (APK), entrepreneurship readiness (BKB), digital business literacy (CLBD), and financial literacy (DLK), have

Table 3. Calculation of measurement (Outer) model.

Variables	Item	Loading	α (>= 0.7)	CR (>= 0.7)	AVE (>= 0.5)
Entrepreneurship Education (APK)	APK1	0.793	0.832	0.889	0.667
	APK2	0.868			
	APK3	0.754			
	APK4	0.847			
Entrepreneurial Readiness (BKB)	BKB1	0.906	0.924	0.943	0.769
	BKB2	0.880			
	BKB3	0.867			
	BKB4	0.899			
	BKB5	0.830			
Digital Business Literacy (CLBD)	CLBD1	0.832	0.920	0.944	0.810
	CLBD2	0.899			
	CLBD3	0.861			
	CLBD4	0.998			
Financial Literacy (DLK)	DLK1	0.871	0.877	0.924	0.802
	DLK2	0.907			
	DLK3	0.908			

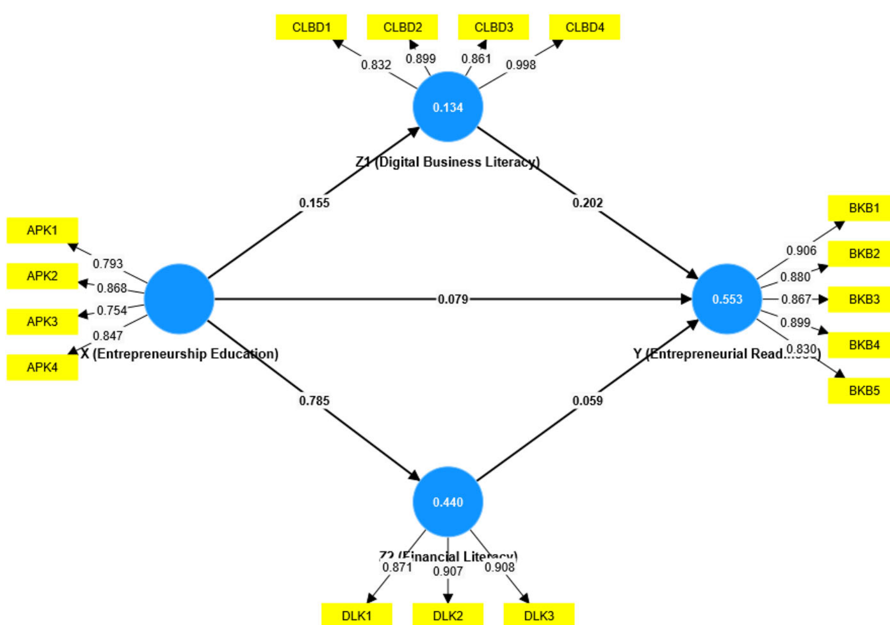

Figure 2. Measurement model test results.

loading factors ranging from 0.754 to 0.998. This shows that these variables achieve convergent validity (> 0.70) (Hair et al., 2017). In Table 3, it can also be seen that the AVE scores for all variables are more significant than 0.5, which illustrates that these variables meet the criteria for discriminant validity.

Table 3 also explains the results of the reliability test in this PLS test using two methods, namely Cronbach's alpha and composite reliability (CR). According to Hair et al. (2017), composite reliability values and Cronbach alpha values, accompanied by the mean of variance extracted (AVE), are used to check the reliability of the assessment model. All composite reliability coefficients and Cronbach's alpha reliability are higher than 0.7. The research results showed that composite reliability varied from 0.889 to 0.944 (> 0.70) to meet the composite reliability criteria (Hair et al., 2017). Similarly, the Cronbach Alpha (α) of APK, BKB, CLBD, and DLK were 0.832, 0.924, 0.920, and 0.877, respectively (> 0.70), indicating that they had achieved composite reliability indicators (see Table 3).

In addition, the convergent validity in Table 4 shows that the loading values of APK, BKB, CLBD, and DLK are higher than 0.70, which implies that these variables achieve convergent validity (Hair et al., 2017). Table 4 shows the cross-loading results for the three variables: entrepreneurship education, digital business literacy, and financial literacy greater than 0.70, which illustrates that these variables meet the requirements for convergent validity (Hair et al., 2017).

Table 4. Discriminant validity.

Variables	APK	BKB	CLBD	DLK
Entrepreneurship Education (APK)	0.817			
Entrepreneurial Readiness (BKB)	0.562	0.877		
Digital Business Literacy (CLBD)	0.366	0.633	0.900	
Financial Literacy (DLK)	0.663	0.659	0.616	0.896

4.3. R-Square test

The R Square test intends to correct predictions with standards of 0.67 (strong), 0.33 (moderate), and 0.19 (weak) (Hair et al., 2017). The R-square test calculation shows that BKB has a value of 0.553, which means that 55.3% of the entrepreneurial readiness variable is influenced by entrepreneurship education. In addition, the R-square value of CLBD is moderately demonstrated by APK with a value of 0.134. Finally, the DLK variable is substantially shown by APK with a percentage of 44%.

4.4. F Square test

In this research, the effect size test (f2) was determined by several criteria: small (0.02), medium (0.15), and large (0.35). Previous calculations show that the f2 value of APK on BKB is 0.079, which implies that it has a small effect. The f2 value of APK on CLBD is 0.155, which indicates a moderate influence. The f2 value of APK on DLK is 0.785, which shows a large influence. In addition, the f2 value of CLBD on BK is 0.202, which indicates a moderate influence. Finally, the f2 value of DLK on BKB is 0.059, which shows a small effect.

4.5. Discussion

This research highlights entrepreneurship education and entrepreneurial readiness among generation Z students by involving several variables that are predicted to moderate it, namely digital business literacy and financial literacy. Based on statistical calculations, this research agrees with the seven hypotheses proposed (see Table 5).

4.5.1. The influence of entrepreneurship education on the entrepreneurial readiness of generation Z students

Nikitina et al. (2023) stated that the main goal of entrepreneurship education is to develop individual entrepreneurial intentions or help someone understand an entrepreneurial career. Apart from providing a theoretical basis for entrepreneurship, entrepreneurship education also shapes the mindset, attitudes, and behavior of an entrepreneur. The entrepreneurship education process is carried out so that generation Z has a deep understanding of entrepreneurship material, such as knowledge, and has the skills and abilities needed in the world of entrepreneurship. Good preparation in these two aspects is very important before Generation Z decides to start their own business. This is an investment in human resources to prepare them to start a business through the integration of experience, increased skills, and knowledge (Wardana et al., 2023).

The results of the hypothesis one test show that there is an influence of entrepreneurship education on the entrepreneurial readiness of generation Z. Research by Rakićević et al. (2022) found that students who received entrepreneurship education had higher entrepreneurial readiness and expressed higher entrepreneurial intentions, abilities, and attractiveness. Rodriguez and Lieber (2020), in their research, also highlighted that students who received entrepreneurship education showed significant improvements in their entrepreneurial mindset, especially in terms of communication and collaboration, opportunity recognition, as well as critical thinking and problem solving. By providing entrepreneurship material, generation Z can be encouraged to become entrepreneurs and develop entrepreneurial readiness. Therefore, it can be seen that entrepreneurship education influences Generation Z's readiness for entrepreneurship.

Table 5. Hypothesis test results.

Hypothesis	Relationship	Standard Deviation	T-statistic	P-values	Information
H_1	APK →BKB	0.113	2.215	0.027	Sig
H_2	APK → CLBD	0.094	3.910	0.000	Sig
H_3	APK → DLK	0.051	13.086	0.000	Sig
H_4	CLBD → BKB	0.089	4.280	0.000	Sig
H_5	DLK → BKB	0.113	2.268	0.023	Sig
H_6	APK→ CLBD→BKB	0.055	2.564	0.010	Sig
H_7	APK → DLK→BKB	0.075	2.272	0.023	Sig

4.5.2. The influence of entrepreneurship education on generation Z students' digital business literacy

In general, digital technology plays an important role in today's digital era. Digital technology has a very important impact on business performance because it allows for large networks between businesses, automation of business functions provides higher productivity, and a smooth flow of information enables informed decision-making (Rvspk et al., 2020). To support becoming an entrepreneur, it is very important for generation Z to have digital business literacy.

The second hypothesis shows that there is an influence between entrepreneurship education and generation Z's digital business literacy. Masyhura and Ramadan (2021) revealed that literacy is a fundamental skill that every person needs to have, and education plays an important role in improving a person's literacy skills. Alferaih (2022) and Reddy et al. (2023) explore the impact of digital entrepreneurship education as a key prerequisite for starting a business and business sustainability. The findings of this research successfully verify several previous studies, which found that entrepreneurship education helps develop digital business literacy through relevant learning strategies and using the right tools (Azmi et al., 2018; Simovic et al., 2023; Zhao et al., 2021). Through entrepreneurship education, generation Z learns the use of digital tools and platforms relevant to business, such as online accounting software, e-commerce platforms, and social media. This literacy is important to improve operational and marketing efficiency. Digital business literacy capabilities enable generation Z to recognize, access, manage, integrate, assess, analyze, develop new knowledge, create media expressions, and communicate with others. Sustainable use of information technology allows entrepreneurs to optimize business processes and increase competitiveness.

4.5.3. The influence of entrepreneurship education on the financial literacy of generation Z students

Financial literacy for generation Z is important because it will instill financial confidence among them and then empower them to explore various aspects of finance in the entrepreneurial process. According to Cole et al. (2014), teenagers' financial literacy provides room for improvement to be successful in handling doubtful and subjective matters in the financial sector because they are able to make financial decisions wisely and with confidence. Having broad financial literacy allows individuals to think rationally and make effective decisions regarding the use and management of their finances (Ahmad et al., 2019).

Financial literacy has an impact on entrepreneurial effectiveness (Thomas & Subhashree, 2020). A higher level of financial literacy leads to better opportunities to continue a career as an entrepreneur (Wise, 2013). Students who have better financial literacy are more likely to become successful entrepreneurs than those who have less financial literacy. If students who are going to become entrepreneurs are not financially literate, they will lack financial management skills, which can then lead to the possibility of new business failure. In short, financial literacy is one of the most important managerial competencies in business creation and development.

The third hypothesis shows the influence of entrepreneurship education on the financial literacy of generation Z. The findings of this research support the research findings of Calcagno et al. (2019), which found that entrepreneurship education has a direct and positive effect on financial literacy. Entrepreneurship education helps a person understand the basic aspects of business, including business planning, risk analysis, and financial strategy. It helps improve financial literacy by providing insight into how business decisions can impact financial situations. Entrepreneurship education and financial literacy are very important for generation Z because they can influence their interest in entrepreneurship, financial management skills, competitiveness, and income. Therefore, it is important to increase access to entrepreneurship education and financial literacy so that generation Z can take advantage of the benefits provided by this education.

4.5.4. The influence of digital business literacy on the entrepreneurial readiness of generation Z students

According to Liu et al. (2021), digital business literacy can improve graduates' employability because it empowers them to succeed in business in the digital economy. Digital business literacy can influence entrepreneurial readiness and plays an important role in preparing individuals for entrepreneurship in the digital era. This shows that digital business literacy has a significant role in shaping readiness, especially in facing business demands in the digital era. The fourth hypothesis shows that there is an influence between digital business literacy and the entrepreneurial readiness of generation Z. The findings of this research support the research of Mugiono and Wahyono, (2021) and Soluk et al. (2021), which shows that digital business literacy can encourage entrepreneurship. Generation Z who have good digital literacy will be more likely to have knowledge of popular digital platforms, understand how to use technology to develop products or services, and have skills in utilizing social media and digital marketing to promote their businesses. Thus, they have a higher readiness to face challenges and opportunities in entrepreneurship.

4.5.5. The influence of financial literacy on the entrepreneurial readiness of generation Z students

The basic principle of becoming a successful entrepreneur is financial literacy. According to Abubakar (2015), weak financial literacy and management can contribute to business failure and closure. Therefore, good basic knowledge of financial literacy is very necessary among entrepreneurs and is a significant benchmark for business success and growth in competitive economic conditions.

The fifth hypothesis shows that there is an influence between financial literacy and the entrepreneurial readiness of generation Z. Financial literacy is important in forming the financial management skills that generation Z needs to start and manage their business. This finding is in line with the results of research conducted by Prisca (2016), which shows that on average, those who have a higher level of financial literacy have a greater capacity for business performance. Research conducted by Chhatwani and Mishra (2021), also found that financial literacy plays an important role for individuals in reducing their financial vulnerability. These findings indicate that financial literacy is beneficial for students' entrepreneurial readiness because it helps them to implement strategic decisions and plan better budgeting processes if they are later involved in business management.

4.5.6. The influence of entrepreneurship education on generation Z students' entrepreneurial readiness through digital business literacy

Entrepreneurship education plays a key role in shaping the entrepreneurial readiness of generation Z students through digital business literacy (Wardana et al., 2023). Entrepreneurship education seeks to educate someone to be good at reading opportunities and making business plans, so that business success can be achieved. Entrepreneurship education equips generation Z students with a comprehensive understanding of digital tools and technologies relevant to business. This includes familiarity with online platforms, e-commerce systems, digital marketing tools, and technology-driven business solutions. Through entrepreneurship education, generation Z students can develop competence in managing a business.

The sixth hypothesis shows that there is an influence of entrepreneurship education on the entrepreneurial readiness of generation Z in the city of Makassar, mediated by digital business literacy. Research by Wicaksono Ardiansyah et al. (2023) found that entrepreneurship education can increase digital business literacy, and digital business literacy can increase entrepreneurial readiness. Entrepreneurship education can help develop digital business literacy and skills that are important for entrepreneurship in the digital era (Anthonysamy et al., 2020; Sitaridis & Kitsios, 2023). Good and quality entrepreneurship education will produce students who have the initial business literacy to start a business. In today's digital era, digital business literacy skills are essential to support someone's intentions for starting a business.

4.5.7. The influence of entrepreneurship education on generation Z students' entrepreneurial readiness through financial literacy

Entrepreneurship education plays a key role in shaping Generation Z's entrepreneurial readiness through financial literacy. Entrepreneurship education helps generation Z understand how to manage business finances, which is important for maintaining finances and helping businesses grow. Entrepreneurship education also helps generation Z in preparing comprehensive business plans, including financial projections to anticipate future business developments. This helps them plan their financial resources more thoroughly.

The results of the seventh hypothesis test show that there is a significant influence of entrepreneurship education on the entrepreneurial readiness of generation Z, mediated by financial literacy. These findings strengthen previous research between entrepreneurship education and entrepreneurial readiness through financial literacy (Sharma et al., 2023; Uthaileang & Kiattisin, 2023). This finding is also in line with research by Mahmudin (2023) which found that entrepreneurship education not only produces future entrepreneurs who are financially successful but also stimulates the development of an entrepreneurial mentality that is critical, innovative, responsible, and ready to face the challenges of the global economy.

5. Conclusion

This research has investigated the influence of entrepreneurship education on the entrepreneurial readiness of generation Z students and understands the moderating role of digital business literacy and financial literacy. Therefore, the findings of this research confirm that digital business literacy and entrepreneurial literacy together can strengthen the relationship between entrepreneurship education and the entrepreneurial readiness of generation Z students. In addition, with entrepreneurship education, generation Z can be encouraged to become entrepreneurs and develop their entrepreneurial readiness.

This paper has several theoretical and practical implications, especially for generation Z, lecturers, universities, and the government. Theoretically, it provides a valuable contribution to entrepreneurship education by paving the way for further research on entrepreneurial readiness in diverse educational contexts through various other new literacies for generation Z. For generation Z itself, this research shows that entrepreneurship education, business literacy, digital literacy, and financial literacy play an important role in increasing entrepreneurial readiness. Therefore, generation Z students must think that entrepreneurship education has the same level of importance as other subjects. For the government and universities, these findings encourage the government to continue efforts to support generation Z entrepreneurs by optimizing access to learning and providing great opportunities for generation Z, especially those related to digital business literacy and financial literacy, by creating a supportive business environment, giving generation Z access to sustainable entrepreneurship education, and supporting the availability of entrepreneurship education oriented towards the formation of digital business literacy and financial literacy. Finally, it is hoped that future research can examine Generation Z's entrepreneurial readiness in more depth by adding various new variables that have not been discussed in this research.

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Author contributions

All authors declare that we have no conflicts of interest in this article. Author 1 is tasked with conducting field research, preparing literature reviews, developing hypotheses, writing research methods, and analyzing all data. Authors 2, 3, and 4 made improvements to the article's writing, interpreted the findings, and presented recommendations. The 5th and 6th authors prepared the literature review and proofread the entire text and language of the article.

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No potential conflict of interest was reported by the author(s).

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