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The level of awareness of university students regarding entrepreneurial culture and its relationship to their entrepreneurial thinking

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ABSTRACT

Awareness of entrepreneurship is essential for fostering sustainable entrepreneurial thinking and practices. Individuals with a well-developed awareness of entrepreneurship are more likely to engage in entrepreneurial activities and adopt a mindset that contributes to a sustainable economic future. The present study aims to assess the level of awareness of entrepreneurship among students at Prince Sattam bin Abdulaziz University and to explore the relationship between entrepreneurial awareness and entrepreneurial thinking. Additionally, the study seeks to determine the extent to which entrepreneurial thinking can be predicted based on the level of entrepreneurial awareness. The study sample consisted of 352 students from Prince Sattam bin Abdulaziz University. The researchers applied an entrepreneurship awareness questionnaire and an entrepreneurial thinking scale. The study employed a descriptive-analytical methodology, specifically the predictive correlational approach, to examine the pattern of relationships between the research variables and predict potential associations. The findings revealed a high level of entrepreneurial awareness among the study sample, as well as a high level of entrepreneurial thinking. Furthermore, the results indicated a statistically significant positive correlation between entrepreneurial awareness and entrepreneurial thinking. Additionally, the findings demonstrated the possibility of predicting the level of awareness of entrepreneurial culture based on entrepreneurial thinking skills within the study sample. This suggests that initiatives aimed at enhancing entrepreneurial thinking can play a vital role in promoting sustainable development.

KEYWORDS: Entrepreneurial awareness, entrepreneurial thinking, sustainable development, university students, Prince Sattam bin Abdulaziz University

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Introduction

In recent decades, there has been a significant increase in interest in entrepreneurship due to rapid advancements in contemporary education concepts and economic development. Several factors have contributed to establishing entrepreneurship and small enterprises as a fundamental component of the economy in various regions worldwide, including Europe, the United States, East Asia, and certain developing countries. This growing interest is largely attributed to the economic crises faced by many industrialized nations, such as economic recessions, rising unemployment rates, and unprecedented market fluctuations not witnessed on such a scale since World War II (Zidan, 2003). Since the late twentieth century, entrepreneurship has garnered increasing attention from economists, policymakers, and academics due to its crucial role in addressing unemployment, which has worsened in many countries, leading to severe social, economic, and political repercussions. This trend has been further reinforced by escalating economic challenges, including recessions, inflation, and the effects of economic globalization. Consequently, numerous governments worldwide have adopted policies aimed at empowering young graduates to enter the entrepreneurial sector. These policies seek to provide governmental support to entrepreneurs and encourage them to establish their own businesses rather than relying on government employment opportunities and joining the ranks of job seekers (Abdu, 2023).

The entrepreneurship sector is one of the key drivers of the economy in both developed and developing countries. Siew & Ahmad (2023) indicated that this sector represents a promising opportunity for enhancing economic development. In this context, Al-Otaibi and Mousa (2015) highlighted that small and medium-sized entrepreneurial enterprises constitute more than 99% of total companies in the United States, providing employment opportunities for approximately 50% of the private sector workforce. These enterprises also contribute to the creation of nearly 60% of new jobs annually, account for over 50% of the Gross Domestic Product (GDP), and represent 97% of U.S. exports. Furthermore, they are responsible for 65% of newly created jobs, contribute 55% of innovations across 362 different industries, and account for 95% of total registered innovations (Daft, 2010). At the Asian level, small and medium-sized enterprises contribute 60% to China's GDP, 70% to Hong Kong's economy, and 56% to Taiwan's economy (Al-Othaim, 2012), underscoring the strategic importance of this sector in driving economic growth and enhancing financial stability.

Saudi Arabia has prioritized the development of small and medium-sized enterprises as a fundamental pillar of sustainable economic growth. This commitment was institutionalized through the establishment of the General Authority for Small and Medium Enterprises (Monsha'at) in 2016, aimed at regulating, supporting, developing, and fostering the sector in accordance with global best practices. This direction is also embedded in Saudi Vision 2030, which aspires to increase the productivity of small and medium-sized enterprises and raise their contribution to GDP from 20% to 35% by 2030. This reflects the Kingdom's dedication to strengthening the entrepreneurial ecosystem, fostering innovation, and creating investment opportunities that contribute to sustainable development. Saudi Arabia has recognized the pivotal role of entrepreneurship in achieving sustainable economic development, leading to the adoption of supportive policies for this sector within Vision 2030. This vision revolves around promoting a free-market economy, diversifying income sources, investing in youth potential, and reducing unemployment rates, reflecting the Kingdom's strategic direction in supporting entrepreneurial ventures as a key instrument for attaining these objectives (Vision 2030 of the Kingdom of Saudi Arabia, 2016).

Entrepreneurship represents one of the most effective solutions to the unemployment crisis, as it prepares a new generation of youth capable of entering the labor market with flexibility and adaptability to economic and social changes. Studies indicate that entrepreneurship fosters entrepreneurial thinking skills and empowers young people to seize opportunities in innovative and effective ways (Sandri, 2016). Entrepreneurship and its education have become a focal point of modern educational systems worldwide, contributing to the creation of stimulating learning environments that encourage creativity and innovation. This approach aims to equip learners with the ability to adapt to evolving market demands and engage in lifelong learning (Timmermans, 2023; Peschl et al., 2021). Entrepreneurship education emphasizes real-world opportunities and experiences as an effective learning approach, fostering active learning through solving real-life problems. This method facilitates the seamless transfer of knowledge to practical contexts, ensuring that learners become increasingly engaged through experiential learning and hands-on application (Peschl et al., 2021). Entrepreneurial thinking aims to generate creative and innovative ideas and opportunities. It is defined as the ability to identify market

opportunities and explore suitable ways to capitalize on them. Moreover, it is a skill that can empower human resources, enhance job marketing, and foster competitiveness (Siew & Ahmad, 2023; Ahmad & Siew, 2022). Clavijo et al. (2018) define entrepreneurial thinking as a combination of an entrepreneurial mindset and innovation. Similarly, Lavoine (2022) describes it as a set of attitudes, skills, and behaviors that help students achieve academic, professional, and personal success.

The societal significance of entrepreneurship and entrepreneurial thinking lies in their integration into the educational system, as they serve as key drivers of sustainable development. Entrepreneurship fosters a knowledge-based society by shifting wealth concentration towards ownership of production resources. Additionally, entrepreneurial thinking acts as a bridge between educational institutions and labor market needs. It facilitates job creation and restructures market dynamics by equipping learners with entrepreneurial competencies, fostering a generation of innovators capable of driving a knowledge-based economy, and contributing to the eradication of unemployment and poverty (Abd El-Fattah, 2023).

Al-Mutairi (2019) refers to the Global Entrepreneurship Monitor's definition of entrepreneurial thinking as "a way of thinking that reflects individual or collective initiatives that produce services for profit-making purposes. An entrepreneur is someone who establishes, operates, and assumes the risks of a business, regardless of its size." Similarly, Salem and Al-Sha'er (2017) define entrepreneurial thinking as "an individual's ability to transform ideas into businesses, innovate in designing various ventures, and anticipate and advance toward the future." The idea of embedding entrepreneurship and entrepreneurial thinking in education has gained significant enthusiasm over the past few decades due to its numerous impacts, including economic growth, job creation, increased societal resilience, personal development, and enhanced school engagement (Lackéus, 2015). Teaching entrepreneurial thinking is essential not only for shaping young people's mindsets but also for equipping them with the necessary skills, knowledge, and attitudes fundamental to fostering an entrepreneurial culture (Bacigalupo et al., 2016). Lindner (2018) highlights that developing entrepreneurial thinking skills does not begin solely at the start of one's professional life but rather during early socialization. Today's school students are the entrepreneurs of the future, making it crucial to introduce entrepreneurial thinking at an early stage through curricula, preferably at the primary education level.

Given the importance of integrating entrepreneurial thinking skills into education at various levels, many countries have introduced the concept of entrepreneurial learning. This approach focuses on developing students' personal, cognitive, and professional competencies while emphasizing the specific context of business creation, feasibility studies, and networking for marketing purposes (Al-Mutairi, 2019). These countries view entrepreneurial learning as a structured process that fosters managerial and self-employment skills, enhances a culture of creativity and innovation, and is supervised by educational institutions to equip students with the essential competencies, knowledge, and behaviors required in the labor market (Abd El-Fattah, 2023). Reports issued by economic organizations indicate that youth unemployment in Saudi Arabia is steadily increasing, as governmental and private institutions have been unable to accommodate the growing number of university and higher education graduates. The overall unemployment rate in the Kingdom has reached 11.7% of the total workforce, underscoring the urgent need to develop alternative solutions for job creation, including the enhancement of the entrepreneurial ecosystem (Report of the General Authority for Statistics and Information, 2014). Despite efforts in this domain, universities still face significant challenges in fulfilling their role in fostering an entrepreneurial culture. Studies such as those by Al-Hamaili and Al-Arabi (2016), as well as Khalid et al. (2017), have revealed a clear deficiency in entrepreneurship education within universities, particularly in terms of vision and mission clarity, strategic planning, leadership, governance, and the availability of resources and infrastructure. These studies further highlighted several barriers that limit the effectiveness of entrepreneurship programs, chief among them: the weakness of an educational environment conducive to entrepreneurship, which restricts students' opportunities to apply entrepreneurial skills practically; the absence of dedicated budgets to support entrepreneurial projects within universities; and the inadequate integration of entrepreneurship into academic programs and curricula, leading to weak student engagement in this field.

Most societies, including Saudi Arabia, face the challenge of a low percentage of university graduates opting for entrepreneurial careers, exacerbating the unemployment crisis. This issue is attributed to limited cultural awareness of entrepreneurship and its role in economic and social development, as well as its potential to create sustainable job opportunities and ensure financial independence for young people (Abdu, 2023).

Unemployment is one of the most complex economic and social issues, with the unemployment rate in Saudi Arabia reaching 11.7% during the first quarter of 2021. It is particularly concentrated among young people, especially females in the 20–29 age group, who constitute 65% of the total unemployed population (General Authority for Statistics, 2021). International reports indicate that Arab countries record higher unemployment rates compared to their European and Asian counterparts, highlighting the urgent need for more sustainable solutions, such as promoting entrepreneurship as a tool to enhance self-employment and create new job opportunities (United Nations, 2005). The 2020 report on the entrepreneurship ecosystem in Saudi universities revealed the absence of a systematic and sustainable approach to supporting the entrepreneurial environment in universities, resulting in a gap between labor market demands and educational outcomes (Access Entrepreneurship Initiative, 2020). The report further indicated that many universities lack a clear vision and strategic planning, with educational policies being largely influenced by individual efforts rather than institutional frameworks. Additionally, there is a shortage of specialized expertise in managing entrepreneurship programs. Furthermore, entrepreneurship culture has not been effectively integrated into academic curricula, leading to a weak engagement of students in this field.

Regarding entrepreneurial thinking and its significance, this aspect has received minimal research attention (Alhnaity et al., 2016). Studies by Abd El-Fattah (2023), Fouad (2023), and Al-Jufayliah & Shahat (2023) have found that students exhibit a low level of entrepreneurial thinking skills, despite their high awareness of entrepreneurship culture. Similarly, Zein El-Abidin (2016) and Abdullah et al. (2014) reported that 41% of the research sample expressed fear of initiating entrepreneurial ventures. This underscores the necessity of providing proper training for these students and enhancing their entrepreneurial thinking skills.

Given the importance of promoting entrepreneurship culture and entrepreneurial thinking among Saudi youth, as well as the scarcity of studies in this field, where no prior research has addressed the variables of the current study at Prince Sattam bin Abdulaziz University, this study aims to analyze the level of awareness of Prince Sattam bin Abdulaziz University students regarding entrepreneurship and its relationship with their entrepreneurial thinking. The study seeks to answer the central question: What is the level of awareness of Prince Sattam bin Abdulaziz University students regarding entrepreneurship, and how is it related to their entrepreneurial thinking?

Literature Review

Awareness of Entrepreneurship Culture

Zein El-Abidin (2016) defines it as: "The awareness of Saudi youth regarding entrepreneurship culture, including the tendencies and attitudes associated with it, the required understanding and analytical skills, and the process of evaluation from the perspective of the actors and their actions. This also includes the ability to confront the obstacles and challenges facing entrepreneurship in Saudi society that hinder its implementation, and the capacity to propose appropriate solutions. It also entails being aware of the importance of engaging in self-employment, exploring opportunities to start personal projects, and the awareness of the cultural stigma that prevails among Saudi youth, which limits their involvement in entrepreneurial work due to its negative perception." Al-Otaibi and Mousa (2015) define it as: "Starting and managing a personal business by dedicating effort, time, and money, bearing its psychological, social, and financial consequences, and investing its returns to achieve social well-being and build a future." It is also defined as the process of starting a commercial venture and organizing the necessary resources, assuming the risks associated with it (Daft, 2010). Entrepreneurship is defined as the activity of establishing a new business venture and managing its resources efficiently and competently to offer something new or innovate a new economic and administrative activity (Khalid et al., 2017).

Entrepreneurship is one of the key pillars of economic and social growth, representing an important source of competitive advantage and enhancing the environment for creativity and innovation. It also contributes directly to improving economic performance by providing job opportunities, particularly for students and graduates, which helps achieve individual economic independence, promotes self-employment culture, and fosters initiative among youth, ultimately positively impacting the Gross Domestic Product (GDP) (Yarkin & Yesil, 2016).

Saudi Vision 2030 and its Role in Supporting Entrepreneurship

In line with the goals of Saudi Vision 2030, the focus has been placed on developing human capital in accordance with the demands of the labor market and increasing the contribution of small and medium-sized enterprises (SMEs) to the national economy. The vision aims to reduce the unemployment rate from 11.6% to 7% and raise the contribution of SMEs to GDP from 20% to 35% by 2030 (Vision 2030 of the Kingdom of Saudi Arabia, 2016).

As part of its efforts to build a strong economy that is not solely reliant on oil, Saudi Arabia is working to create an attractive investment environment, promote innovation, and support the small and medium-sized enterprise sector as one of the main drivers of economic development. Vision 2030 also aims to increase its contribution to non-oil GDP from 33% to 35% by 2020. Among the measures taken in this regard, the establishment of the General Authority for Small and Medium Enterprises in October 2015 was a significant step. The Authority enjoys financial and administrative independence and works on removing regulatory obstacles, facilitating financing, and supporting youth in transforming their entrepreneurial ideas into successful ventures (Vision 2030 of the Kingdom of Saudi Arabia, 2016).

Through its developmental policies, Saudi Arabia aims to support entrepreneurship via higher education, where Saudi universities are working to develop educational programs that enhance entrepreneurial skills among students and help them enter the labor market as innovators and leaders in business. Studies have shown that Arab universities still need more efforts to raise awareness among youth about the importance of entrepreneurship in achieving economic development, which calls for the development of modern educational models focused on preparing students to become successful entrepreneurs (Al-Makhlafi, 2017). Education is considered one of the primary tools relied upon by governments and societies to bring about the necessary transformations in various fields, including the economic sector. Regni (2010) pointed to the importance of focusing on entrepreneurship in light of modern economic changes and the necessity of integrating it into curricula to enable students to acquire entrepreneurial skills. Many studies, such as those by Khalid et al. (2017) and Al-Makhlafi (2017), have emphasized the crucial role that higher education plays in instilling the principles of entrepreneurship and supporting students' entrepreneurial orientations. However, these studies revealed a clear shortcoming in the attention given by Arab universities in general, and Saudi universities in particular, in raising youth awareness of the importance of entrepreneurship as a means to achieve personal development and contribute to the national economy, whether through generating new job opportunities or improving economic and social performance.

Entrepreneurial Thinking

Buang et al. (2009) define it as design thinking skills based on scientific knowledge and an entrepreneurial orientation. Ahmad & Siew (2021) define it as the ability to create and improve a product, idea, or process such that the product adds value from both social and economic perspectives. Arifin & Siew (2023) describe entrepreneurial thinking as a teaching model that integrates entrepreneurial thinking with scientific processes to produce innovative, science-based products. From the above, it is clear that entrepreneurs are pioneers of development and change, shaping the dynamics of society. They have significant responsibilities in implementing new resources and technological developments, transforming them into products and services that benefit society. Therefore, educating and developing entrepreneurial individuals has become inevitable. On the other hand, entrepreneurial thinking is not merely a philosophy aimed at developing entrepreneurs, but rather a design thinking skill grounded in scientific knowledge and an entrepreneurial orientation (Siew & Ahmad, 2023; Ahmad & Siew, 2022). Entrepreneurial thinking contributes to enhancing individuals' resilience, their ability to face challenges, and capitalize on new opportunities, which positively impacts economic development. According to recent studies, successful entrepreneurs are characterized by their ability to turn crises into opportunities and make decisions based on continuous market research and analysis (Nadelson et al., 2018; Buang et al., 2009; Tajpour et al., 2023).

Entrepreneurial Thinking Skills

Entrepreneurial thinking skills play a crucial role in fostering innovation, strategic decision-making, and business growth. One of the essential skills is Future Vision, which enables individuals to analyze the present

environment critically, predict future trends, and align their entrepreneurial efforts with expected developments (Mohammed & Hassan, 2024). Another key skill is Calculated Risk-Taking, which involves assessing potential opportunities and challenges before making business decisions. It allows entrepreneurs to turn uncertainties into growth opportunities through market analysis and forecasting (Kevan, 2006; Salem & Al-Sha'ar, 2017). Moreover, Creativity is a cornerstone of entrepreneurship, as it facilitates the generation of innovative solutions, the development of new products and services, and the redesign of business models to enhance competitiveness (Abdulaziz, 2021; Metwally & Al-Louzi, 2020). Alongside creativity, Proactivity is essential, as it drives entrepreneurs to anticipate changes in the market, take initiative, and seek out new opportunities before they arise (Abdullah & Mohammed, 2017). Additionally, Effective Communication with Others is vital for entrepreneurs to articulate their ideas persuasively, foster collaboration, and build strong business relationships (Metwally & Al-Louzi, 2020).

El-Dessouki (2021) categorizes entrepreneurial thinking skills into four main areas: Personal Skills, including independence, perseverance, and decision-making; Technical Skills, such as time management and safety measures; Marketing Skills, which involve promotion and negotiation; and Managerial Skills, encompassing market research and project development. Furthermore, Ireland et al., classify these skills into Entrepreneurial Opportunity, arising from economic and technological shifts; Entrepreneurial Alertness, which relies on prior experiences and social interactions; and Realistic Options, emphasizing strategic decision-making through continuous evaluation (Mahoney & Kor, 2000). Additionally, Al-Jufayliah and Shahat (2023) highlight entrepreneurial thinking skills such as Proactive Behavior, which fosters innovation and change; Preference for Innovation, driven by self-confidence in achieving success; Achievement Motivation, which fuels persistence toward entrepreneurial goals; and Uniqueness, reflecting the ability to think beyond conventional frameworks. Entrepreneurs also exhibit distinct Personality Traits, including critical thinking, problem-solving, adaptability to uncertainty, and resilience in facing risks (Kılıçoğlu & Akrami, 2023; Peschl et al., 2021). They continuously learn from past experiences, accept constructive feedback, and engage in teamwork to leverage diverse perspectives. Moreover, their Initiative and Growth Mindset enable them to introduce innovative products and services, take calculated risks, and pursue sustainable business development (Caruana et al., 1998). These entrepreneurial thinking skills collectively empower individuals to navigate complex business environments, drive economic value, and create long-term success.

Methodology

Research Approach: In alignment with the study's objectives and hypotheses, this research adopts a descriptive-analytical approach, specifically employing a correlational-predictive method. This methodological choice allows for an in-depth examination of the relationships between the study variables and facilitates predictive analysis to determine the extent to which these variables influence each other.

Participants: Pilot Study Sample: To establish the psychometric properties of the research instruments, a pilot study was conducted with a sample of 67 undergraduate students from Prince Sattam bin Abdulaziz University, Wadi Ad-Dawasir. The participants had a mean age of 19.78 years (SD = 1.08).

Main Study Sample: For hypothesis testing, the study was conducted on a larger sample of 352 undergraduate students from Prince Sattam bin Abdulaziz University, Wadi Ad-Dawasir, with a mean age of 20.13 years (SD = 1.76).

Tools: The study employed two key instruments, the Entrepreneurial Culture Awareness Questionnaire and the Entrepreneurial Thinking Scale, both developed by the researchers after an extensive review of theoretical frameworks and prior empirical studies.

Entrepreneurial Culture Awareness Questionnaire

This instrument was designed to assess students' awareness of entrepreneurial culture and its components. The questionnaire comprises 15 items distributed across three core components: Knowledge related to entrepreneurship, Awareness of entrepreneurial skills and Attitude toward engaging in entrepreneurial activities. Each component includes five items, rated on a five-point Likert scale ranging from strongly agree (5) to strongly

disagree (1), with higher scores indicating greater entrepreneurial culture awareness. The total possible score ranges from 15 to 75 points.

Validity and Reliability: Content validity was confirmed by seven faculty members specializing in educational psychology, with agreement rates ranging from 85% to 100% on the scale items, ensuring its relevance and clarity. Internal consistency was examined by computing Pearson correlation coefficients between individual items and their respective subscales, as well as between subscale scores and the overall questionnaire score. All correlation coefficients were statistically significant at $p < 0.01$, ranging between 0.421 and 0.734, indicating strong item-to-total and subscale-to-total relationships.

Reliability analysis was conducted using Cronbach's Alpha ($\alpha = 0.739$) and the Guttman Split-Half Reliability Formula (0.814). Both coefficients exceeded the 0.70 threshold, confirming the high reliability of the instrument.

Entrepreneurial Thinking Scale

This scale was developed to measure students' entrepreneurial thinking across five dimensions: Future Vision, Calculated Risk-Taking, Proactivity, Creativity and Effective Communication with Others. The scale consists of 25 items, with five items per dimension, rated on a five-point Likert scale (5 = strongly agree to 1 = strongly disagree). Higher scores reflect a stronger entrepreneurial mindset. The total score ranges from 25 to 125 points. Validity and Reliability: Content validity was ensured by expert evaluation from seven faculty members specializing in educational psychology, with agreement rates between 85% and 100% on all items. Internal consistency was established by computing Pearson correlation coefficients between each item and its respective component, as well as between the component scores and the overall scale score. All correlations were statistically significant at $p < 0.01$, with values ranging from 0.539 to 0.784, affirming strong coherence among the scale's components.

Reliability assessment was conducted using Cronbach's Alpha ($\alpha = 0.733$) and the Guttman Split-Half Reliability Formula (0.865). Both indicators exceeded the 0.70 threshold, demonstrating strong internal reliability.

Results

The first hypothesis states, "**There is an average level of awareness of entrepreneurial culture among the student participants at Prince Sattam bin Abdulaziz University.**"

To verify the validity of this hypothesis, the One-Sample T-test was used, comparing the theoretical mean of the Entrepreneurial Culture Awareness Questionnaire and its dimensions with the average scores of the study sample on the Entrepreneurial Culture Awareness Questionnaire and its dimensions, as shown in the following table:

Table 1: Results of One-Sample T-test for the Entrepreneurial Culture Awareness Questionnaire and its Dimensions to Reveal the Significance of Differences between the Theoretical Mean and the Average Scores of the Study Sample on the Entrepreneurial Culture Awareness Questionnaire and its Dimensions

Dimensions	Test Value	Mean	Std. Deviation	Mean Difference	df	t	Sig.
Knowledge Associated with Entrepreneurship	15	21.50	1.52	6.50	351	79.884	.000
Awareness of Entrepreneurial Skills	15	21.29	1.67	6.29	351	70.730	.000
Attitude Towards Entrepreneurial Activities	15	21.19	1.74	6.19	351	66.671	.000
Total Score	45	63.99	4.23	18.99	351	84.189	.000

The results from the previous table indicate statistically significant differences at the 0.01 level between the hypothesized mean (15) and the mean scores of the research sample students on the dimensions of the entrepreneurial culture awareness questionnaire (knowledge related to entrepreneurship, awareness of entrepreneurial skills, attitude towards engaging in entrepreneurial activities, and the overall score). It is

observed that the mean scores of the research sample on all dimensions were higher than the hypothesized mean, indicating a high level of awareness of entrepreneurial culture among the participating students.

Second Hypothesis Results: The second hypothesis states, "There is an average level of entrepreneurial thinking among the students participating in the research at Prince Sattam bin Abdulaziz University."
To test the validity of this hypothesis, the One-Sample Statistics "t" test for a single sample was used. The comparison was made between the hypothesized mean of the entrepreneurial thinking scale and its dimensions and the mean scores of the research sample students on the entrepreneurial thinking scale and its dimensions, as shown in the following table:

Table 2: Results of the One-Sample Statistics "t" Test for a Single Sample to detect the significance of differences between the hypothesized mean and the mean scores of the research sample students on the entrepreneurial thinking scale and its dimensions

Dimensions	Test value	Mean	Std. Deviation	Mean Difference	df	t.	Sig.
Future Vision	15	21.45	1.52	6.45	351	79.198	.000
Calculated Risk-Taking	15	21.23	1.67	6.23	351	70.037	.000
Proactivity	15	21.21	1.67	6.21	351	69.607	.000
Creativity	15	21.37	1.62	6.37	351	73.675	.000
Effective Communication with Others	15	21.29	1.70	6.29	351	69.380	.000
Overall Score	75	106.57	5.71	31.57	351	103.655	.000

It is evident from the table above that there are statistically significant differences at the 0.01 level between the hypothetical mean (15) and the mean scores of the research sample students on the dimensions of the entrepreneurial thinking scale (Future Vision, Calculated Risk-Taking, proactivity, creativity, effective communication with others, and overall score). It is notable that the mean scores of the research sample on all dimensions were higher than the hypothetical mean, indicating a high level of entrepreneurial thinking among the students participating in the study.

Third Hypothesis Results: The third hypothesis states: "There is no statistically significant correlation between the scores of the research sample students on the Entrepreneurial Culture Awareness Questionnaire and their scores on the Entrepreneurial Thinking Scale."
To verify this hypothesis, the researcher calculated Pearson's correlation coefficient between the scores of the research sample students on the Entrepreneurial Culture Awareness Questionnaire and their scores on the Entrepreneurial Thinking Scale, as presented in the following table:

Table 3: Pearson's correlation coefficients between the scores of the research sample students on the Entrepreneurial Culture Awareness Questionnaire and their scores on the Entrepreneurial Thinking Scale

Entrepreneurial Culture Awareness Questionnaire				
Variables	Entrepreneurial Knowledge	Awareness of Entrepreneurial Skills	Attitude Towards Entrepreneurial Activities	Overall Score

Entrepreneurial Thinking Scale	Future Vision	.357**	.275**	.208**	.323**
	Calculated Risk-Taking	.155**	.283**	.187**	.245**
	Proactivity	.356**	.339**	.363**	.412**
	Creativity	.459**	.338**	.351**	.444**
	Effective Communication	.238**	.345**	.288**	.340**
	Overall Score	.446**	.454**	.402**	.506**

The table presents Pearson correlation coefficients between students' scores on the Entrepreneurial Culture Awareness Questionnaire and their scores on the Entrepreneurial Thinking Scale. Statistically significant correlations were found at the **0.01** significance level (**$p < 0.01$**) across all dimensions.
The table demonstrates the following:

There is a statistically significant positive correlation at the **0.01** level (**$p < 0.01$**) between the research sample's scores on the Entrepreneurial Thinking Scale (Future Vision, Calculated Risk-Taking, Proactiveness, Creativity, Effective Communication with Others, and Overall Score) and their scores on the Entrepreneurial Culture Awareness Questionnaire (Entrepreneurial Knowledge, Awareness of Entrepreneurial Skills, Attitude Toward Entrepreneurial Practice, and Overall Score).

The Pearson correlation coefficients range from **0.155 to 0.506**, all of which are statistically significant at the **0.01** level.

Fourth Hypothesis Results: The fourth hypothesis states: "It is not possible to statistically predict the level of entrepreneurial culture awareness based on the scores of the participating students on the Entrepreneurial Thinking Scale."

To test the validity of this hypothesis, Stepwise Multiple Linear Regression Analysis was conducted, considering entrepreneurial culture awareness as the dependent variable and the dimensions of the Entrepreneurial Thinking Scale as the independent variables. Several regression models were generated, as shown in the following table:

Table 4: Results of the Stepwise Multiple Linear Regression Analysis for Predicting the Research Sample's Scores on Entrepreneurial Culture Awareness Based on Their Scores on the Dimensions of the Entrepreneurial Thinking Scale

Model	Variables	B	Std. Error	Beta	f value	t value	R	R^2	Adjusted R^2
1	(Constant)	24.047	3.644		120.50**	6.598**	.506	.256	.254
	Total Entrepreneurial Thinking Score	.375	.034	.506		10.978**			
2	(Constant)	22.272	3.563		74.490**	6.251**	.506	.256	.254
	Total Entrepreneurial Thinking Score	.551	.050	.744		10.917**			
	Calculated Risk-Taking	.799	.173	.315		4.630**			
3	(Constant)	21.560	3.550		52.381**	6.074**	.558	.311	.305
	Total Entrepreneurial Thinking Score	.455	.064	.614		7.160**			
	Calculated Risk-Taking	.667	.180	.263		3.713**			
	Creativity	.380	.155	.146		2.454*			

Significant at the 0.01 level, *Significant at the 0.05 level

The previous table demonstrates the following:

Three predictive models were identified for the students' scores in the research sample regarding their level of awareness of entrepreneurial culture based on their scores on the dimensions of the Entrepreneurial Thinking Scale. The third model is accepted, as it presents an acceptable improvement in the multiple correlation coefficient squared (R^2) compared to the first and second models. Additionally, the F-value for the third regression model reached 52.381, which is statistically significant at the 0.01 level and higher than the values obtained for the first and second models. The coefficient of determination (R^2) for the third model was 0.311, indicating that the independent variables (total entrepreneurial thinking score, calculated risk-taking, and creativity) explain 31.1% of the total variance in the dependent variable (level of awareness of entrepreneurial culture). This percentage is also higher than that obtained in the first and second models.

Discussion

First Hypothesis Result: The result of the first hypothesis, which found a high level of awareness of entrepreneurial culture among the students of Prince Sattam bin Abdulaziz University, aligns with the studies of Abdu (2023), Zein El-Abidin (2016), and Al-Otaibi and Mousa (2015), which concluded that there is an average level of awareness of entrepreneurial culture among Saudi university students. However, it contrasts with the findings of Al-Mukhayzim and Al-Jasser (2017) and Nafeh (2018), who found a low level of awareness of entrepreneurial culture and attitudes towards it among university students.

The researchers attribute the high level of awareness of entrepreneurial culture among the students of Prince Sattam bin Abdulaziz University to several interconnected factors. Institutional efforts to promote entrepreneurship within universities, such as academic initiatives and entrepreneurial incubators, have contributed to developing entrepreneurial thinking among students, in line with Saudi Arabia's Vision 2030 (Vision 2030 of the Kingdom of Saudi Arabia, 2016). Additionally, the rising unemployment rates have prompted youth to seek alternative career paths, enhancing their recognition of the importance of entrepreneurship as an independent career trajectory (Abdu, 2023; Al-Otaibi and Mousa, 2015). Furthermore, academic programs and entrepreneurial competitions have contributed to developing students' skills and increasing their interest in this field (Al-Hamali and Al-Arabi, 2016). The exposure to international experiences and successful practices in global universities has also played a significant role in broadening students' horizons and enhancing their knowledge of entrepreneurship (Arnaout, 2017). Finally, media and modern technologies, including online courses and social media platforms, have played an important role in disseminating the entrepreneurial culture and raising students' awareness of it (Faqihi and Al-Ababneh, 2023).

The researchers also attribute this result to the role of the university, as Prince Sattam bin Abdulaziz University launched the "Ruwad" (Entrepreneurship) program, which is committed to keeping pace with the developments occurring in the Kingdom and enhancing the national economy. This program, "Ruwad," is one of the early initiatives that significantly contribute to enhancing income sources for students of the university in Al-Kharj and the other regions served by the university (Khalaf, 2018). In support of this, a study by Al-Dosari and Ibn Saqr (2023) recommended that the management of Prince Sattam bin Abdulaziz University develop a clear, measurable, and applicable executive plan to spread entrepreneurial culture among students. The study also suggested integrating entrepreneurial education into the curricula of all academic disciplines and implementing media activities and guidance events to promote entrepreneurship among students.

Second Hypothesis Result: The result of the second hypothesis, which concluded a high level of entrepreneurial thinking skills among the students of Prince Sattam bin Abdulaziz University, contrasts with the findings of studies by Abd El-Latif (2020), Abd El-Fattah (2023), Al-Jufayliah& Shahat (2023), and Fouad (2023), which found a low level of entrepreneurial thinking skills among students.

The researchers attribute the high level of entrepreneurial thinking skills among the study sample to the integration of entrepreneurial education into academic curricula. Prince Sattam bin Abdulaziz University, like many other Saudi universities, has seen an increasing inclusion of entrepreneurship courses within its academic programs. This integration helps empower students with entrepreneurial thinking by exposing them to concepts such as innovation, risk analysis, and strategic decision-making. These curricula support the development of entrepreneurial thinking skills, including proactivity, strategic planning, and creative problem-solving (Al-

Hamali and Al-Arabi, 2016; Al-Makhlafi, 2017).

Additionally, entrepreneurial incubators and practical activities play a significant role. Entrepreneurial incubators, practical training programs, and entrepreneurial competitions serve as ideal environments for enhancing entrepreneurial thinking skills. These activities provide students with practical opportunities to apply entrepreneurial theories and develop real projects, thereby refining their abilities to make decisions, analyze opportunities, and adapt to market challenges (Abdu, 2023; Khalid et al., 2017).

Amid the economic transformations occurring in Saudi Arabia under Vision 2030, the importance of adopting entrepreneurial thinking as part of the economic and social culture has increased. Government initiatives supporting entrepreneurship, such as the General Authority for Small and Medium Enterprises (Monsha'at) and funding and support programs for entrepreneurs, have raised students' awareness of the need to possess entrepreneurial thinking skills to meet market demands and capitalize on available opportunities (Vision 2030 of the Kingdom of Saudi Arabia, 2016; Al-Othaim, 2012).

The researchers also attribute this result to the impact of media and technology in spreading entrepreneurial thinking. The proliferation of digital media and educational applications has provided multiple sources for developing students' entrepreneurial thinking skills. These platforms offer access to advanced educational content on strategic planning, risk analysis, innovation, and critical thinking. Moreover, online training courses and digital resources provide students with opportunities to develop their skills in an interactive learning environment, contributing to the enhancement of their entrepreneurial thinking (Faqihi and Al-Ababneh, 2023). Additionally, the influence of successful entrepreneurial role models plays a key role in stimulating entrepreneurial thinking among students. The presence of successful Saudi entrepreneurs, whether within the university or at the national level, serves as an inspiration for students, motivating them to adopt entrepreneurial thinking skills. Successful experiences act as a catalyst for developing skills such as creativity, calculated risk-taking, strategic planning, and teamwork, all of which enhance students' readiness to apply these skills in their future ventures (Arnaout, 2017).

Three and Four Hypotheses Results: From hypotheses three and four, a statistically significant positive correlation is evident between entrepreneurial thinking skills and the level of awareness of entrepreneurship culture. This means that an increase in awareness of entrepreneurship culture is associated with the growth of entrepreneurial thinking skills among the study sample. These two variables are strongly positively correlated—when one increases, so does the other, and vice versa. This can be attributed to the fact that entrepreneurial thinking prepares individuals to engage with entrepreneurship culture in a positive manner, which, in turn, reflects on their economic and entrepreneurial awareness. Furthermore, the results of hypothesis four confirm that entrepreneurial thinking can predict awareness of entrepreneurship culture. This result aligns with studies by (Salem& Al-Sha'ar, 2017; Metwally and Al-Louzi, 2020; Abd El-Fattah, 2023), which also found a positive correlation between the research variables.

The researchers attribute this result to the mutual interaction between awareness of entrepreneurship culture and entrepreneurial thinking. Studies confirm that entrepreneurial thinking is primarily dependent on the level of awareness individuals have about entrepreneurship culture. Knowledge of entrepreneurial principles, such as opportunity exploration, strategic planning, and risk analysis, forms the foundation for developing entrepreneurial thinking skills (Arnaout, 2017; Al-Otaibi and Mousa, 2015). Students who have a high level of awareness about entrepreneurship are more capable of making informed entrepreneurial decisions, which enhances their skills in innovation and calculated risk-taking, thus establishing a positive correlation between the two concepts. Moreover, many studies indicate that educational and training programs specializing in entrepreneurship contribute to enhancing both awareness and entrepreneurial thinking, as they provide a stimulating environment for developing creativity, risk analysis, and strategic planning skills (Al-Hamali and Al-Arabi, 2016; Faqihi and Al-Ababneh, 2023). Therefore, the relationship between entrepreneurial thinking and awareness of entrepreneurship is not only a correlational one but also an interactive relationship that is cultivated through educational and practical practices, explaining the possibility of predicting entrepreneurial awareness based on entrepreneurial thinking.

Skills such as calculated risk-taking and creativity are essential traits of entrepreneurship, as innovative thinking helps identify new opportunities, while calculated risk-taking facilitates informed decision-making

when starting ventures (Sandri, 2016; Khalid et al., 2017). Thus, students with higher levels of these skills tend to have a greater awareness of entrepreneurship culture. Their previous experiences, whether in academic projects or practical experiments, enhance their perception of the entrepreneurial environment and its core principles, explaining the possibility of predicting entrepreneurial awareness based on these skills. Researchers believe that a university environment supportive of entrepreneurship plays a crucial role in enhancing students' awareness of entrepreneurship concepts, thus stimulating their entrepreneurial thinking. When students are exposed to real entrepreneurial projects, interactive workshops, and business incubators, they gain a deeper understanding of market risks and opportunities, helping them naturally develop their entrepreneurial thinking (Abdu, 2023; Al-Makhlafi, 2017). This explains why entrepreneurial awareness can be predicted based on entrepreneurial skills, as the practical learning environment reflects on students' entrepreneurial knowledge and behavior.

The researchers attribute this result to the fact that modern technology and digital media have contributed to enhancing entrepreneurial thinking by providing a wide range of educational content, enabling students to learn about entrepreneurial concepts and the challenges faced by entrepreneurs in the real market (Faqihi and Al-Ababneh, 2023). Students who possess entrepreneurial thinking skills are more motivated to explore further about entrepreneurship culture, which strengthens the relationship between entrepreneurial thinking and entrepreneurial awareness, confirming the possibility of predicting the level of awareness through these core skills.

Conclusion

In light of the findings reached by this research regarding the level of awareness of Prince Sattam Bin Abdulaziz University students about entrepreneurship culture and its relationship with entrepreneurial thinking, a number of important conclusions can be drawn that reflect the modern trends in developing and teaching entrepreneurship skills within the university environment. The results showed a high level of awareness of entrepreneurship culture among the students of Prince Sattam Bin Abdulaziz University, indicating the success of institutional efforts in promoting this concept within the university, whether through curricula, training programs, or entrepreneurship-supporting initiatives. This aligns with the directions of Saudi Arabia's Vision 2030, which seeks to empower youth to enter the world of entrepreneurial business as a strategic choice for economic growth and financial sustainability.

The results also revealed that the students participating in the research possess a high level of entrepreneurial thinking skills, reflecting their engagement with the entrepreneurial-supportive learning environment within the university, as well as the impact of entrepreneurial incubators, competitions, and workshops that provide them with practical opportunities to apply their knowledge in real-world contexts. This increase in entrepreneurial thinking skills is attributed to the role of university education in enhancing strategic skills, such as creativity, proactivity, and calculated risk-taking, which are essential components of entrepreneurial thinking. Additionally, technological advancements and modern media have contributed to spreading entrepreneurship culture among students, providing them with an encouraging environment to develop their entrepreneurial abilities.

On the other hand, the results revealed a statistically significant positive correlation between awareness of entrepreneurship culture and entrepreneurial thinking, meaning that enhancing one of these variables leads to an increase in the other. This indicates that entrepreneurial thinking cannot grow in isolation from entrepreneurial knowledge, as students who have a deeper understanding of entrepreneurship concepts are more capable of making successful entrepreneurial decisions, managing risks in a calculated manner, and innovating creative solutions to the economic and social challenges they face. The research results also confirmed that entrepreneurial thinking skills, particularly creativity and calculated risk-taking, play a pivotal role in predicting the level of awareness of entrepreneurship, highlighting the importance of enhancing these skills within academic curricula and university training activities.

Based on the above, the study recommends intensifying institutional efforts to strengthen entrepreneurship education within universities, through the inclusion of specialized courses in entrepreneurial thinking in academic curricula and providing stimulating educational environments based on interactive methods, such as project-based learning and problem-solving-based learning. The study also recommends expanding the scope of training programs directed at students, including advanced workshops on developing entrepreneurial projects, risk management, and innovative strategies for establishing start-up companies.

Moreover, the study emphasizes the importance of strengthening partnerships between universities and the private sector to support entrepreneurship among youth, by providing incubation programs for emerging projects, financing promising entrepreneurial initiatives, and offering mentorship and professional guidance to students interested in starting their own ventures. Universities should also capitalize on technological advancements to enhance entrepreneurship education by developing digital educational platforms that provide advanced training content and connect students with local and international networks of entrepreneurs.

In conclusion, the study affirms that spreading entrepreneurship culture and enhancing entrepreneurial thinking among university students is a fundamental pillar for achieving sustainable economic and social development. Enabling youth to adopt and practice entrepreneurial thinking in their professional lives will significantly contribute to creating new job opportunities, boosting innovation, and achieving the economic goals of Saudi Arabia's Vision 2030, thereby enhancing the competitiveness of the national economy and driving development toward broader horizons.

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