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## Sustainable Development, Entrepreneurship and Accounting Education: An Exploratory Study for Saudi Universities

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# Sustainable Development, Entrepreneurship and Accounting Education: An Exploratory Study for Saudi Universities

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**Abstract:** This study aims to explore the role of accounting education programs in promoting the concepts of sustainability and entrepreneurship in Saudi society, by surveying the perceptions of a sample of parties related to accounting education - faculty members, students, and graduates - about the contribution of the intended learning outcomes of accounting programs in supporting knowledge and skills related to sustainability, entrepreneurship, and improving students' positive attitudes towards these practices. The results of the study came to show, in general, the failure of accounting programs to support the concepts and practices of sustainability and entrepreneurship. The results shed light on some insights that could help in developing accounting programs, such as: Paying attention to some topics like environmental accounting and auditing, and ecological feasibility studies, developing teaching strategies to train students to analyze specific data to reach conclusions and solutions, inclusion of practical cases that depends on actual problems.

**Keywords:** Accounting education – entrepreneurship – learning outcomes – Saudi universities – students' attitudes – sustainable development.

**JEL Classification:** M41– I23 – Q56 – L26 – L31.

## 1 Introduction

The growing interest around the world in the concepts of sustainable development and entrepreneurship lead to increasing calls to integrate these concepts into the context of higher education. University education educates individuals who will shape the future society and provides them with a set of learning outcomes for their professional and personal lives, and one of its tasks is to provide graduates the ability to contribute to the necessary changes. In this context, university education has a great responsibility towards the consolidation of these concepts in society, so the concepts of education for sustainable development and education for entrepreneurship has appeared and spread, where these concepts aim to provide knowledge and skills that support graduates to practice of sustainability and entrepreneurship.

In addition to educational contexts devoted to sustainability or entrepreneurship, other disciplines can contribute - to one degree or another- in achieving the intended learning outcomes of sustainability and entrepreneurship. Accounting education is one of the disciplines that can significantly contribute to consolidating the actual practices

of those concepts. Also, the accounting is considered a central major of the business sector with all its classifications, therefore graduates of accounting programs are considered an essential component in the business environment and can play a fundamental role in directing the business sector to pay attention to sustainable development practices, if they have the knowledge and positive attitudes towards sustainable development. Therefore, providing accounting students with a basic knowledge of sustainable development and supporting their positive attitudes towards those practices represents an essential component of sustainable development strategies. Consequently, the incorporation of these concepts into accounting education is an important matter as it is expected to substantially improve the knowledge that students will acquire to face economic and social developments.

Entrepreneurship and sustainable development represent a general framework which various sciences and disciplines can support it. Therefore, it is required to coordinate between the learning outcomes of the various disciplines and the outcomes related to sustainability and entrepreneurship. In this context, the current paper aims to

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explore the extent to which the learning outcomes of accounting programs can contribute to support the intended learning outcomes for sustainable development and enhancing entrepreneurial skills from the viewpoint of both faculty members and graduates of accounting programs, in addition to exploring the students' attitudes towards sustainable development and entrepreneurship, reflecting - in part - the role of accounting programs in promoting those concepts.

This paper comes in the context of calls for including concepts such as sustainable development in the study plans of various sciences including accounting [1]. On the other hand, labor markets become more complex, competitive, and rapidly changing, and entrepreneurship offers a different career path as an alternative to a job which its required skills are identified by employers [2,3]. Thus, qualifying accounting students to have their own business represents one of the options for solving the problem that the labor markets in Arab countries are not absorbing the graduates of these majors. In addition, in recent years, large companies under governmental and non-governmental pressure have shown great interest in including the concept of sustainability in their operations, but small and medium-sized companies are not being paid attention to it. Therefore, attention must also be paid to sustainability at the level of these companies, indicating the importance of the integration of both sustainability and entrepreneurship concepts into university education. The paper also comes in the context of calls to develop accounting education, where although the criticisms of accounting curricula is not new, technological development, globalization of trade and the complexity of business transactions raising more questions about the suitability of these curricula [4]. Consequently, the results of the current study can provide useful insights to develop accounting programs in general and more specifically in the direction of sustainability and entrepreneurship.

In the Saudi Kingdom, there is a strategic direction to consolidate these concepts within Kingdom's Vision 2030. In this context, the paper uses the field study method to answer the following questions:

1. To what extent are the values of sustainability and entrepreneurship reflected in the learning outcomes of the accounting programs and courses in Saudi universities?
2. What are the attitudes of accounting students towards sustainable development and entrepreneurship?

The paper is proceeding as follows: The second section deals with the concept of sustainable development, the third section deals with the concept of entrepreneurship, the fourth section presents the research method, and the fifth section presents the results of the study.

## 2 Sustainable developments

Sustainable development addresses different organizational elements, such as financial, environmental, and social sustainability [5], and each element takes the same importance as each plays a role to achieve a stronger financial position [6]. Education can be considered as the fourth dimension of sustainable development [7], where it is an important way to communicate knowledge and increase individuals' awareness of sustainability [8]. Also, to achieve the other three dimensions, individuals must be taught to act in a way that supports sustainability [9]. Despite the growing importance of the concept of sustainable development, accounting education did not take its role in adopting curricula that consider that concept [10]. Sustainability has received only scattered attention and has not been institutionalized within accounting education and other sciences [11]. However, although students may resist new developments or reject non-financial or non-computational concepts in accounting [12,13,14], presenting environmental and social elements in accounting chapters in a formal way is considered a very important practice [15,13,16,11,17].

In addition to the importance of embedding sustainability in the curriculum, there is another question that arises about how it is taught to students [18,19]. In this context, SDSN provided a guideline to support university education to engage with the goals of sustainable development, and it called on universities to provide students with knowledge, skills, and motivation to understand and address the challenges of the SDGs. In 2017, the PRME network provided various approaches for universities to include the goals of sustainable development in their curricula. In general, education for sustainability aims to enhance students' knowledge and understanding of environmental and social issues, enhance their attitudes towards sustainable development, provide students with the required capabilities to formulate a sustainable future, and encourage students change their behavior and take actions consistent with sustainable development [20].

Some studies have addressed sustainable development and accounting education, Hutaibat [10] presented an experience to integrate the report on sustainable development into an advanced accounting course, Dean et al. [21] aimed to experience of presenting the Sustainable Development Goals approved by the United Nations to students in business studies through research and report on corporate social responsibility practices. The current study addresses sustainable development in accounting education from another perspective, which is to explore the extent to which the intended learning outcomes for sustainable development are achieved through the current learning outcomes of accounting programs, and the awareness of accounting students in sustainable development by exploring their attitudes.

## 2.1 Sustainability learning outcomes

The United Nations declared the period between 2005 and 2014 as a decade for education for sustainable development, to integrate the values, principles, and practices of sustainable development with the various aspects of education. There are some initiatives at the level of higher education institutions around the world to determine appropriate learning outcomes of education for sustainable development, and there are many similarities between these initiatives even with the different disciplines targeted by these initiatives [22]. In general, the learning outcomes of education for sustainable development can be described from different aspects by the term transformative learning. Wals and Blaze Corcoran [23] indicated that transformative learning emphasis on the dynamic characteristics and abilities of students, the ability to change or transform perspectives related to their culture, geographical conditions, and time frame, and this includes the ability to shift from local to global interest and from the short term to the long term, and the realization that the world changes over time.

## 2.2 Sustainable development attitudes

One of the important goals in the context of education for sustainable development is to form positive students' attitudes that help them understand and respond to sustainability challenges [24]. Sustainable development attitudes refer to the beliefs and feelings of individuals towards that concept [7], and previous studies have indicated that individuals' sustainability attitudes are positively related to their participation in sustainability activities [25], positive environmental behavior [26], and a more proactive approach towards environmental sustainability [27]. Sahin and Erkal [28] suggested that it is of great importance for universities to develop environmental values and environmental sustainability values, as individuals' attitudes will influence business sustainability practices because any change in the stakeholders' attitudes towards sustainability will affect the sustainability practices of their companies [29]. In this context, accountants, as responsible for providing and reviewing financial information, can play an important role in urging companies to adhere to positive sustainability behavior, thus the formation of positive sustainability attitudes is considered an important and fundamental matter in improving the sustainability of the business sector and society.

## 3 Entrepreneurship

Consistent with the current labor market constraints, universities should embed the courses they currently offer the knowledge, skills, and values required to support graduates' ability to engage in entrepreneurship [30]. Individuals should be supported with educational programs that lead to the development of entrepreneurial skills [31]. Entrepreneurship education can be considered as an

effective way to prepare graduates for a smooth transition from learning to work, where the concentration is not only on acquiring knowledge, but also on developing skills and competencies [32]. Entrepreneurship education should keep pace with business developments and provide courses that provide business graduates with the required skills to deal with changes in the business environment [33], along with the knowledge and skills appropriate to engage in entrepreneurship [34]. Badawi et al. [35] indicated that to provide students with the knowledge and skills to engage in entrepreneurial activities, there are calls to expand the business skills beyond the technical domain.

Accounting education is an important source of the skills and competence required to start a new business, as accounting represents an important - but not the only - source for those skills [36]. Also, Okoye and Ogodogun [37] showed that accounting is an essential component of sustainable entrepreneurship, therefore entrepreneurs should be encouraged to acquire basic accounting skills. Entrepreneurial activities face some obstacles [38], and Klinger and Schündeln [39] suggested that some of these obstacles can be overcome through education in business disciplines for potential entrepreneurs.

Some studies have addressed entrepreneurship and accounting education, Badawi et al. [35] explored the cognitive skills of graduates of business majors in relation to entrepreneurship, Reyad et al. [36], explored whether the entrepreneurship skills that are developed during accounting education produce the skills and intentions to engage in entrepreneurial activities, Okoye and Ogodogun [37] showed how accounting can be used to achieve sustainable entrepreneurship. The current study addresses entrepreneurship in accounting education from another perspective, which is to explore the extent to which the intended learning outcomes and the skills for entrepreneurship are achieved through the current learning outcomes of accounting programs and explore the attitudes of accounting students.

### 3.1 Entrepreneurship skills

In the context of the concept of education for entrepreneurship, there is a need to expand the accounting skills beyond the technical domain [40], where Entrepreneurial skills integrate a range of technical, managerial, and personal skills [41]. The inclusion of entrepreneurship skills prompts students to put theory into practice, and gain self-confidence and motivation to become initiators and innovators [42]. It can also link the characteristics of risk-taking propensity and need for achievement and developing positive attitudes towards entrepreneurship [43]. Jones and English [44] pointed out that graduates to participate in the global knowledge-based economy, they must develop the ability for analytical thinking when faced with the problem-solving tasks that impose critical analysis. Ugwunwoti and Chinyere [45] analyzed the entrepreneurship skills required for business students and showed that there are some managerial, accounting and marketing skills required to succeed in

entrepreneurship.

### 3.2 Entrepreneurship attitudes

To ensure the continued existence of entrepreneurs, there is a need to know how the early intentions of potential entrepreneurs arise and what are the factors that stimulate entrepreneurship [46]. In this context, the important question that policymakers and academics should focus on is why some individuals choose entrepreneurship activity and others do not [47]. Although individuals are likely to start their business between the ages of 24 and 44, it is important to focus on individuals under the age of 25 to understand the factors that affect their intentions to start their business in the future [47], where the future work environment will depend on the creativity and personality of young people [48]. Rae [49] showed that institutional education positively affects entrepreneurial intentions by providing a source of knowledge and entrepreneurial skills, where one of the most powerful tools for increasing entrepreneurial trends is spreading skills through entrepreneurship education [50]. There is a positive association between entrepreneurial skills and attitudes and intentions towards entrepreneurial activities [36].

## 4 Methodologies

The current study is an exploratory research as it depends on measuring the perspectives of the individuals related to the topic of the research. Consequently, field study is the appropriate method to achieve the research objectives, where questionnaires are used as a tool to collect data to answer the research questions. Two questionnaires are used, first one to identify the extent to which the learning outcomes of the accounting programs and courses contribute to the achievement of learning outcomes related to sustainability and / or entrepreneurship and is directed to faculty members and Graduates of accounting programs. The second one to explore accounting students' attitudes towards sustainable development and entrepreneurship and is directed to students of accounting programs.

The first questionnaire aims to answer the question to what extent the learning outcomes of the accounting programs support the skills and learning outcomes of sustainability and entrepreneurship. This questionnaire includes three sections: the first section addresses the demographic information of the respondents, and the second section addresses the opinions of the respondents on the role of accounting programs in enhancing skills and learning outcomes for sustainability. This section includes 11 statements describing the intended sustainability' learning outcomes divided according to the three domains of learning outcomes, knowledge (7 statements), skills (3 statements) and values (1 statement) and the respondents are required to determine from their perspective the extent to which those outputs are achieved through the current accounting programs through a five-point scale ranging from fully achieved (5) to not achieved absolutely (1). The third section addresses the respondents' opinions about the

role of accounting programs in enhancing entrepreneurial skills, and it includes 27 statements describing the required skills for entrepreneurship divided into six main skills: risk taking, critical thinking, problem-solving, innovation, autonomy, and the need for achievement. The respondents are required to determine from their perspective the extent to which these skills can be achieved through current accounting programs using a five-point scale ranging from fully achieved (5) to not achieved at all (1). The second questionnaire aims to answer the question what the attitudes of accounting students towards sustainability and entrepreneurship are? This questionnaire includes three sections: the first section addresses the demographic information of the respondents, and the second section aims to determine the respondents' attitudes towards sustainability, as it includes 20 statements describing potential attitudes towards sustainability divided into its four sections, and the respondents are required to determine the extent of their agreement with those statements using a five-point scale ranges from completely agree (5) to completely disagree (1). The third section identifying the respondents' attitudes towards entrepreneurship, as it includes 6 statements describing possible attitudes towards entrepreneurship, and the respondents are required to determine the extent of their agreement with those statements using the previous five-point scale.

The two questionnaires were designed based on the previous studies. Regarding sustainability, Biasutti and Frate [7] developed a scale of attitudes towards sustainability consisting of 20 elements, and previous studies used that scale. Svanstrom, et al. [22] analyzed some examples of learning outcomes for sustainable development presented by some institutions and presented a model for learning outcomes based on the similarity between them. Concerning entrepreneurship, the questionnaire of Reyad et al. [36] can be used regarding entrepreneurship skills and attitudes.

## 5 Entrepreneurship

### 5.1 Descriptive statistics

Table no. (1) displays the results of the descriptive statistics for a sample of faculty members and graduates of accounting programs. The results show that none of the sample members received an education dedicated to sustainability or entrepreneurship, indicating the absence of these paths or lack of interest in them. The results also show that only two individuals (from the faculty members) have membership in one of the organizations concerned with sustainable development, while no one of the sample members has membership in organizations that are interested in entrepreneurship. In general, these results indicate a lack of attention of these concepts in the Saudi university education environment.

**Table (1): Description of the sample of staff and graduates**

		Part 1: Total		Part 2: Graduates		Part 3: Staff	
		No.	%	No.	%	No.	%
Age:	25-20	44	27.3	42	39.6	2	3.6
	35-25	63	39.1	45	42.5	18	32.7
	45-35	37	23	14	13.2	23	41.8
	More than 45	17	10.6	5	4.7	12	21.8
Educational qualification	Diploma	43	26.7	43	40.6	0	0
	BSC	65	40.3	63	59.4	2	3.6
	Master	12	7.5	0	0	12	21.8
	PHD	41	25.5	0	0	41	74.5
Gender	Male	113	70.2	77	72.6	36	65.5
	Female	48	29.8	29	27.4	19	34.5
Work experience	Less than 5 years	46	28.6	44	41.5	2	3.6
	5-10 years	66	41	48	45.3	18	32.7
	10-20 years	35	21.7	13	12.3	22	40
	More than 20 years	14	8.7	1	0.9	13	23.6
Sustainability education at the university	Yes	0	0	0	0	0	0
	No	161	100	106	100	55	100
Entrepreneurship education at the university	Yes	0	0	0	0	0	0
	No	161	100	106	100	55	100
Membership of sustainability' organizations	Yes	2	1.2	0	0	2	3.6
	No	159	98.8	106	100	53	96.4
Membership of entrepreneurship' organizations	Yes	0	0	0	0	0	0
	No	161	100	106	100	55	100

Table (2) presents the results of the descriptive statistics for a sample of students of accounting programs. Regarding the perspectives concerning sustainability and entrepreneurship, the results show that majority of the sample do not know about the term sustainable development (approximately 60%), while the majority have knowledge of the term entrepreneurship (approximately 60%), indicating that the term entrepreneurship may be more widespread in the university education environment, comparing to the term sustainable development. Consistent with that, the results show that a very small per-centage of students care about sustainability issues (16.8%), while almost half of the sample (47.5%) care about entrepreneurship issues. The results of the descriptive statistics of the two samples indicate, in general, weak culture of sustainability and entrepreneurship in the Saudi university education environment, even if it seems that entrepreneurship is attracting attention to some extent.

**Table (2): Description of the sample of students**

		No.	%
Age	17-19	93	46.0
	20-22	98	48.5
	More than 22	11	5.5
Gender	Male	170	84.2
	Female	32	15.8
Perspective concerning sustainability development	I know and pay attention to sustainability development	34	16.8
	I know and did not pay attention to sustainability development	46	22.8
	I did not know and did not pay attention to sustainability development	122	60.4
Perspective concerning entrepreneurship	I know and pay attention to entrepreneurship	96	47.5
	I know and did not pay attention to entrepreneurship	25	12.4
	I did not know and did not pay attention to entrepreneurship	81	40.1

**5.2 Accounting programs and sustainable development**

To explore the extent of the contribution of accounting education programs to the context of sustainable development, the following two tables present the responses regarding learning outcomes and attitudes of sustainable development. Table (3) displays the average of the responses to the question "to what extent the accounting programs achieve the intended learning outcomes for

sustainable development". The results show that the sample, in general, perceive that the learning outcomes of the current accounting programs do not support the sustainability' learning outcomes (the average 2,939635), and the faculty members have a positive view, to a weak degree, (average 3.117651) while the graduates have a negative view (average 2.655606) about the contribution of accounting education to achieving sustainability' learning outcomes. More specifically, among the three domains of learning outcomes, accounting programs support sustainability values (average 3,435294), while not supporting knowledge and skills related to sustainability (average 2.74129 and 2.642322).

In detail, according to the perspective of a sample as a whole, among the knowledge learning outcomes for sustainability, it appears that accounting programs support - to some extent - "enhancing knowledge about contemporary matters" (the average 3.348837), and to less extent, "understand the systems of thinking that enable them to influence the process of change " (average 3.045977), while do not support other outcomes. The results show that there is consistency- to large extent- between the views of faculty members and graduates. From the perspective of graduates, accounting programs only support "knowing about contemporary matters" (average 3.2121), while do not support other outcomes. From the perspective of the faculty members, accounting programs support "knowledge about contemporary matters" (average 3.433962), "knowledge of global trends that affect the quality of life" (average 3.320755), and, to less extent, "an understanding of thinking systems that enable them to influence the process change (average 3.092593).

Regarding skills, the results show that accounting education programs do not support any learning outcomes, excepting that from the perspective of faculty members, accounting education support, to less extent, "providing students with the ability to use evaluation criteria consistent with sustainability in their work (average 3.111111). Concerning values, from the point of view of the faculty members, accounting programs greatly contribute to the students' awareness of ethical standards (average 3.75), while graduates have a neutral view of that value (average 2.9394).

These results indicate that the cognitive learning outcomes of accounting education programs should pay more attention to the concept of sustainable development to expand students' awareness of the impact of that concept on their professional and personal lives, and this can be achieved through topics such as environmental accounting and environmental auditing. Also, providing students with the ability to use professional tools that consider sustainability, and this can be achieved through subjects such as ecological feasibility studies. In addition, teaching strategies can also be developed by including some training activities aimed to training students to act in a way consistent with sustainability in their work, and this can be strengthened through the field training course by including the students' evaluating criteria how they act in a manner

consistent with sustainability. On the other hand, it can be argued that some of the targeted learning outcomes for sustainability may not be compatible with the accounting major, which requires more research to identify accounting learning outcomes consistent with the sustainability, and to develop accounting courses in a way that contributes to strengthening sustainability practices at the professional and community level.

**Table (3): Responses concerning to what extent the accounting programs achieve the intended learning outcomes for sustainable development**

	Graduates		Staff		Total	
	Mean	S. D.	Mean	S. D.	Mean	S. D.
<b>Knowledge:</b>						
Understand the moral responsibility towards present and future generations	3.0000	1.17260	2.821429	0.716231	2.88764	0.910023
To know about contemporary matters	3.2121	1.05349	3.433962	1.135264	3.348837	1.103656
Understanding social responsibility as a professional and as a citizen	2.6667	.98953	2.703704	0.983441	2.689655	0.980156
Understanding the impact of human activities on the planet	1.6061	.89928	2.462963	0.817566	2.137931	0.942195
Knowledge of global trends affecting the quality of life for current and future generations	2.1515	.87039	3.320755	0.700922	2.872093	0.955437
Understand the systems of thinking that enable them to influence the process of change	2.9697	1.10354	3.092593	1.169882	3.045977	1.140257
Explain how sustainability relates to their lives and values, and how their actions affect sustainability	1.9091	1.04174	2.388889	0.979346	2.206897	1.024558
	2.502165		2.889185		2.74129	
<b>Skills:</b>						
To apply evaluation criteria or available tools related to sustainability in their field of work.	2.8182	1.15798	3.111111	1.058063	3	1.099683
To implement the required actions to enhance sustainability in their work and personal lives	2.5758	1.29977	2.339286	0.977507	2.426966	1.10667
The ability to use sustainably knowledge to change their daily habits and consumption process	2.1818	1.10268	2.690909	0.879241	2.5	0.994236
	2.525253		2.713769		2.642322	
<b>Values:</b>						
Recognize and apply ethical professional standards to serve the goals of sustainability	2.9394	1.24848	3.75	1.064121	3.435294	1.199673
	2.655606		3.117651		2.939635	

To illustrate the students' attitudes towards sustainable development, Table (4) presents the mean of students' opinions. The results show that, in general, accounting students have positive attitudes towards sustainable development (the average 3.26). In de-tail, the results show that accounting students have positive attitudes towards the social dimension (average 3.564444), followed by the economic dimension (average 3.364444), then the educational dimension (average of 3.328889), while the accounting students do not have positive attitudes towards the environmental dimension of sustainable development (Average 2.782222). The environmental dimension is considered one of the most important aspects of sustainable development - if not the most important - and it is related to the cultural, social, and educational context in the student's life. Consequently, the weakness of positive attitudes among students reflects the need to pay more attention to

environmental practices at the cultural and social level.

**Table (4): Responses concerning students' attitudes toward sustainability development**

Sustainability Dimensions	Mean	S. D.
<b>Environment:</b>		
Human intervention in the environment often results in catastrophic effects	3.3556	1.04785
The quality of human life is directly related with the protection of the environment	2.7333	1.11600
Biodiversity must be protected even at the expense of industrial agricultural production	3.1333	1.05744
Building development is less important than protecting the environment	2.1111	1.02740
Environmental protection is more important than industrial growth	2.5778	1.23378
	2.782222	
<b>Economic:</b>		
Governmental economic policies should increase sustainable production even at the expense of increased expenditures	2.8444	1.10691
Individuals must sacrifice to reduce economic differences between humans	3.5778	1.23378
Governmental economic policies should increase fair trade	3.3778	0.86047
Governmental economic policies should act if the country is losing its natural resources	3.1778	1.26651
Reducing poverty and hunger in the world is more important than increasing economic welfare in industrialized countries	3.8444	0.92823
	3.364444	
<b>Society:</b>		
Society should provide equal opportunities for females and males	2.9111	1.01852
Intercultural communication is considered stimulating and enriching	3.0000	1.06600
Every country can do a lot to preserve world peace	3.5333	0.75679
The community should provide free basic health care service	4.1333	0.75679
Society must take responsibility for the well-being of individuals and families	4.2444	0.71209
	3.564444	
<b>Education:</b>		
Faculty members should use student-centered teaching methods	3.2222	.73512
Faculty members should develop future-oriented thinking in addition to historical knowledge	3.7556	.98062
Faculty members should make interdisciplinary composition between subjects	3.1778	.96032
Faculty members should establish a connection between domestic and international matters	3.4889	.92004
Faculty members should develop more critical thinking than lecturing	3	0.810324
	3.328889	
	3.26	

### 5.3 Accounting programs and entrepreneurship

To explore the role of accounting education programs to support the tendency towards entrepreneurship, the following two tables present the respondents' responses concerning entrepreneurial skills and attitudes. Table (5) displays the responses regarding the question to what extent the accounting programs achieve the intended learning outcomes and the skills for entrepreneurship. The results show that from the point of view of the sample, in general, the accounting education programs contribute to a weak degree in enhancing entrepreneurship skills (the average 3.157406). There is a difference - to some extent - between the opinions of faculty members and graduates, where faculty members believe that the learning outcomes of accounting programs contribute- to some extent- to achieving entrepreneurship skills (average 3.379228), while graduates oppose that perspective (average 2.837848). More specifically, from the point of view of the sample as a whole, accounting education contributes to enhancing skills: need for achievement (average 3.459034), critical thinking (average 3.29221), innovation (average 3.228188), risk taking (average 3.131327), and problem solving (average 3.121556), while not contributing to autonomy (average 2.712122).

In detail, faculty members tend to think that accounting education support the bulk of entrepreneurial skills, while graduates differ with them regarding most skills. According to the perspective of faculty members, the skills of need for achievement and critical thinking can be greatly enhanced through accounting education programs (average of 3.685432 and 3.63289 respectively). Graduates agree that

first skill can be achieved to some extent through accounting programs (average 3.121212), but they differ concerning second skill (average 2.787879). Also, faculty members see that accounting programs enhance the skill of innovation(average 3.466581), while graduates do not agree with this (average 2.860606). The two groups also differ concerning risk taking and problem-solving skills, as faculty members see that they can be strengthened to some extent (average 3.336465 and 3.294917), while graduates differ with them in that (average 2.899814 and 2.854545). The two groups agree that accounting education does not support the skill of autonomy (average 2.859082 for faculty members and average 2.50303 for graduates).

The results refer to some insights that need to be drawn to in the context of accounting education programs. There is a need to pay attention to train students to studying and assessing risks and this can be achieved through courses such as financial analysis and financial management. Also, in the context of entrepreneurial skills, some accounting courses provide students with knowledge and skills that enhance their tendency of entrepreneurial activities, including management accounting and feasibility studies. It is also possible to re-design accounting courses and design teaching strategies to direct the student to rely on the analysis of a set of data to reach a specific solution or conclusion, and to encourage students to critically ask to develop the student's analytical thinking. In addition to inclusion of accounting courses more practical cases that based on real events. Concerning autonomy, it can develop teaching strategies that support that skill among students, such as dividing students into work groups and allowing mutual evaluation of their work.

**Table (5): Responses concerning to what extent the accounting programs achieve the entrepreneurship skills**

Risk taking	Graduates		Staff		Total	
	Mean	S. D.	Mean	S. D.	Mean	S. D.
Accounting teachers are interested in encouraging students to learn about risk acceptance	3.326531	1.048566	4.0303	0.63663	3.609756	0.965531
Accounting teachers motivate students to take on challenges	3.0909	1.01130	3.56	0.836904	3.373494	0.933272
Accounting teachers teach students how to calculate risk in real situations	2.9394	1.05887	2.555556	1.00314	2.701149	1.035587
Accounting teachers teach students to research about new challenges	2.2424	1.27550	3.2	1.025598	2.840909	1.21188
	2.899814		3.336465		3.131327	
<b>Critical thinking</b>						
The accounting courses are directed to analyze the evidence before arriving at a conclusion in any situation	2.5152	0.90558	3.634615	1.010316	3.2	1.110555
Accounting teachers encourage	3.2727	1.12563	4.244444	0.74332	3.833333	1.037187
students to have critical discussion within work teams						
Accounting teachers often help with analytical thinking	2.5152	1.34910	3.34	2.80386	3.012048	2.360725
Critical thinking activities are well covered by accounting courses	2.8485	1.14895	3.3125	0.719227	3.123457	0.940515
	2.787879		3.63289		3.29221	
<b>Problem solving</b>						
The contents of accounting courses include how to define problems that students may face at work	2.5152	1.22783	2.933333	0.750757	2.75641	0.995912
Accounting teachers train students to think logically to solve problems	2.8485	1.41689	3.702128	1.040796	3.35	1.273886
Accounting courses include methods of assigning and composite tasks to achieve the goal	2.8485	1.20211	2.644444	0.883062	2.730769	1.027834
Accounting software is provided for students in their classes	2.2424	0.90244	3.214286	0.731481	2.853933	0.923808
Accounting software helps students to solve organizations' problems	3.8182	0.95048	3.980392	0.582759	3.916667	0.747821
	2.854545		3.294917		3.121556	
<b>Innovation</b>						
Accounting students are aware of new ideas and modern technology	3.1515	1.20211	3.041667	0.898186	3.08642	1.027102
Accounting teachers help students come up with new ideas for performing the classroom tasks	2.8788	1.45253	3.576923	0.956836	3.305882	1.215216
Students create new ideas to improve their performance in the classroom	3.1515	1.56367	2.37037	0.977025	2.666667	1.281956
Accounting teachers work to develop students' accounting skills	2.5455	1.17502	4.698113	0.46347	3.872093	1.326619
Accounting teachers teach students how to generate innovative questions	2.5758	1.17341	3.645833	0.862692	3.209877	1.126011
	2.860606		3.466581		3.228188	
<b>Autonomy</b>						
Accounting courses encourage students to be more independent	2.0909	1.23399	3.177778	2.894265	2.717949	2.3899
Accounting teachers encourage students to be self-initiated to be pioneers	2.6061	1.22320	2.66	0.960655	2.638554	1.065859



Accounting teachers direct students towards self-disciplined behavior	2.9394	1.36792	3.72549	0.801958	3.416667	1.12162
Students can do a self-assessment through accounting courses	2.3030	1.28659	2.25	0.926198	2.270588	1.07336
Accounting curricula allow students a great deal of freedom in generating new ideas in business choices	2.5758	1.43680	2.482143	0.972178	2.516854	1.159078
	2.50303		2.859082		2.712122	
<b>Need for achievement</b>						
The accounting training period helps students learn about real-life situations and how to face obstacles	3.8788	0.73983	4.363307	0.567731	4.158318	0.685344
Feasibility studies motivate students to get acquainted with a bigger picture of business today	2.7879	1.29319	2.875	0.672404	2.839506	0.967688
Management accounting helps students learn how to make decisions	3.0000	1.17260	3.311111	1.124565	3.179487	1.148048
Accounting teachers encourage students to work on tasks under their responsibility	2.8182	1.55029	4.192308	0.79307	3.658824	1.323352
	3.121212		3.685432		3.459034	
	2.837848		3.379228		3.157406	

Regarding the students' attitudes towards entrepreneurship, Table (6) displays the average of students' opinions. The results show that the students have positive attitudes (average 3.277783). In detail, the results refer to the negative attitudes towards the idea of risk taking (average 2.6444), as well as the students' negative view of social habits that do not represent a factor encouraging them to engage in entrepreneurial activities (2.8889).

**Table (6): responses concerning students' attitudes toward entrepreneurship**

	Mean	S. D.
I can take the risks of starting my own business	2.6444	.98062
Starting a business is the best way to benefit from an accounting education	3.2000	1.17937
After graduation, it is better to start a new business than employment in an existing one	3.6667	.97701
Identifying situations of simulating leadership during accounting education encourages entry into new real projects	3.9778	.54309
Hosting models for entrepreneurs in the university motivate the start of new businesses	3.2889	.84267
Social trends motivate me to go towards entrepreneurship	2.8889	1.09175
	3.277783	

In general, the results show that although accounting education programs can play a fundamental role in the context of sustainability and entrepreneurship, they fail to a large degree in promoting the values of sustainability and entrepreneurship for their students. Comparing the two concepts, the results generally indicate a slightly more interest in the concept of entrepreneurship versus the concept of sustainable development. At the level of

learning outcomes and required skills, the sample has a non-supportive or neutral view towards enhancing learning outcomes related to sustainable development (average 2,939635), while its weakly supports learning outcomes related to entrepreneurship (average 3.157406). according to the perspective of faculty members, accounting programs weakly enhance the learning outcomes for sustainable development and entrepreneurship, however the second is better than the first (an average of 3.379228 for entrepreneurship, compared to an average of 3.117651 for sustainability). In contrast, graduates think that accounting programs do not support learning outcomes for sustainable development and entrepreneurship. However, they think that accounting programs are better addressing entrepreneurial issues (average 2.837848) than the sustainability issues (average 2.655606). At the level of students' attitudes, the results show positive attitudes towards two concepts, but those attitudes are slightly stronger towards entrepreneurship (average 3.277783) versus sustainability (average 3.26).

## 6 Conclusions

This study aimed mainly at exploring the role that accounting education can play in promoting the values of entrepreneurship and sustainability, and the results indicated that accounting education does not play a role or plays a very weak role in promoting these values. The results refer to some insights that help to develop accounting education programs in the context of supporting sustainability and entrepreneurship, including: 1)Increasing attention to cognitive concepts related to sustainability to expand students' awareness of the impact of these concepts on their professional and personal lives, and this can be achieved through topics like environmental accounting and environmental auditing. 2)Paying attention to studying and evaluating risks and this can be achieved through courses such as financial analysis and financial management. 3)Providing students with the ability to use professional tools that consider sustainability, and this can be achieved through topics such as ecological feasibility studies. 4)Developing teaching strategies to include some training activities that aim to train students on positive sustainability behaviors during performance of their work, and this can be strengthened through the field training by including students' evaluating standards how they act in a manner consistent with sustainability. 5)Developing teaching strategies to motive student to depending on data analysis to reach a specific solution or conclusion and encouraging students to critically ask to develop the student's analytical thinking. 6)Paying attention to some accounting courses that can help in providing students with knowledge and skills that enhance their tendency of entrepreneurial activities, including management accounting and feasibility studies, in addition to including accounting courses practical cases that depending on actual problems. On the other hand, it can be argued that some of the intended learning outcomes for sustainability and entrepreneurship

may not be compatible with the accounting major, which requires more research to determine targeted learning outcomes consistent with the accounting and developing accounting courses in a way that contributes to enhancing sustainability practices and entrepreneurship at the professional and community level.

In addition, the results shed light on some points that require attention to strengthening community support for the concepts of sustainability and entrepreneurship, such as weak students' attitudes towards the environmental dimension of sustainable development, which requires greater attention to promoting a culture of environmental concern. Also, the students' perceptions that social trends do not encourage engaging in entrepreneurial activities, which requires change in the society's culture towards the concept and practices of entrepreneurship.

### Conflict of interest

The authors declare that there is no conflict regarding the publication of this paper.

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