ENTREPRENEURIAL EDUCATION AND INDIVIDUAL ENTREPRENEURIAL ORIENTATION: AN EXPERTS' PERSPECTIVE. AN EMPIRICAL DELPHI STUDY

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Abstract

Individual entrepreneurial orientation (IEO) has been defined as the ability to psychologically understand the reasons why individuals choose to engage in entrepreneurial activities. However, for individuals to start these much-needed business ventures, they must be oriented to do so upon completion of their studies. Entrepreneurial education (EE) might directly influence whether students decide to pursue an entrepreneurial venture based on the knowledge and skills, which they feel they have accumulated through their studies. A Delphi study was performed to determine how the EE, being received by university students, in the context of Scotland and South Africa, may influence them to choose an entrepreneurial career. The data were obtained from 16 academic experts, eight from South African universities and eight from Scottish universities. The data were analysed using thematic content analysis. IEO has been studied using the five original dimensions, namely, innovativeness, risk-taking, proactiveness, autonomy, and competitive aggressiveness. However, the results reveal that only three of the five IEO dimensions are prevalent when aligning to a student's entrepreneurial behaviour. The results also reveal that EE should ensure that practical teachings receive more attention than theoretical teachings. This study may assist universities to better prepare their curriculums to include teachings that will improve the IEO of students.

Keywords: entrepreneurial orientation, individual entrepreneurial orientation, entrepreneurial education, entrepreneurship.

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1. Introduction

The importance of entrepreneurship has been realised in many parts of the world [1–3]. Shane and Venkataraman [4] define entrepreneurship as the creation of goods and services that is a result of an individual or organisation's exploiting an opportunity. The study explored the individual entrepreneurial orientation (IEO) of students and entrepreneurial education (EE) in the emerging economy of South Africa as well as the advanced economy of Scotland. South Africa experiences many social ills, which gives rise to economic and political uncertainty [5]. South Africa also suffers a high unemployment rate (28.48 %), along with poverty and insufficient economic performance, which has recently worsened due to the Covid19 pandemic. The gross domestic product (GDP) of South Africa fell by 16 % in 2020, which resulted in an annualized growth rate of –51 % [6]. Another measure, used to indicate the issues pertinent to South Africa, is the Gini coefficient, which is regarded as a measure of income inequality in a country. South Africa scores 0.63 on this measurement, indicating high wealth inequality and leading to the nation's being considered one of the most unequal in the world [7]. Although social ills are more prevalent in emerging economies, such as South Africa, it is important to

note that advanced economies, such as Scotland, also suffer social ills of their own, such as relatively high unemployment rates and poverty. It is therefore important for countries to establish sound policies that will boost economic performance, which may alleviate some of the social ills currently experienced [8].

Authors, such as Tanchangya, Yingjing, and Nazmul [9], Ogunlana [10], and Benzing, Hung, and Orban [11] have explored the various ways, in which these social ills can be alleviated. These studies note that many social ills, experienced by various countries, could be successfully combatted through entrepreneurship. This is due to its potential to reduce the unemployment rate, as many individuals will choose rather to pursue an entrepreneurial venture instead of actively seeking work in the labour market. As more individuals gain employment through their entrepreneurial ventures, the wealth and economic growth of the nation will steadily increase. In addition, these entrepreneurial ventures will also create employment opportunities for other individuals in the labour market. To improve the chances of these social ills' being combatted through entrepreneurship, it is particularly important to ensure that graduates are gaining the necessary knowledge and skills at the university level to orient them to choose an entrepreneurial career path upon graduation. Mutluturk and Mardikyan [12] have found that students who have been more exposed to EE are more inclined to pursue an entrepreneurial career.

This research aimed to determine the influence that EE has on the IEO of University students, through a Delphi study, employing subject-matter experts.

The literature review provides a discussion on the important concepts in the study. These concepts include entrepreneurial orientation (EO), IEO, and EE. These concepts will be discussed in depth to provide an overall understanding of the significant part they play in entrepreneurship within a country.

According to Covin and Slevin [13], entrepreneurship is considered to be a strategic posture rather than a single act, which indicates that it is vital that organisations entrench entrepreneurship at all levels to ensure success. The earliest works, conducted regarding EO, were those of Miller [14] and Khandwalla [15]. In 1983 Miller published a landmark study that saw the conceptualisation of EO through three variables: proactiveness, innovativeness, and risk-taking [14]. Miller's study also saw the development of the first definition of EO, namely, that "an entrepreneurial firm engages in product market innovation, undertakes somewhat risky ventures, and is first to come up with 'proactive' innovations, beating competitors to the punch" [14]. Khandwalla [15] addressed the notion that organisational performance should not be measured by Miller's three variables alone, but rather by how these variables interact in a hostile and heterogeneous environment. Covin and Slevin [16] adopted the definition, proposed by Miller, and went on to develop a conceptual model of entrepreneurship. Covin and Slevin also adapted a 7-point scale questionnaire that included items from Miller [14], Khandwalla [15], and Miller and Friesen [17]. In 1996, Lumpkin and Dess expanded on Covin and Slevin's model of EO, adding two variables: autonomy and competitive aggressiveness [18].

Through this expansion in the exploration of EO, it is thus now studied using the five dimensions. These five dimensions are (a) *autonomy*, the ability of an individual to make decisions independently or without any organisational restrictions [18]; (b) *innovativeness*, the ability to be creative and take part in experimentations in the organisation in terms of new products, services, and processes [14]; (c) *proactiveness*, the future-looking perspective that an organisation exhibits while encompassing innovative and new venture creations [18]; (d) *competitive aggressiveness*, considered the potential of the organisation to expand its market share and outwit the competitors in the industry [19]; and (e) *risk-taking*, the willingness of managers in the organisation to make risky and large resource commitments [17].

Covin and Slevin [16] considered EO a unidimensional construct, as it was believed, that only if an organisation exhibited all three EO dimensions, could it be considered entrepreneurial. Contrary to this, however, Lumpkin and Dess [18] found that EO should rather be studied as a multidimensional construct. An organisation may still be considered entrepreneurial if some EO dimensions are absent or are acting at different levels.

The conceptualisation of IEO has its roots in EO. This is due to the fact that entrepreneurial behaviours were identified in the individual entrepreneur as well as the organisation [20]. Consequently, EO has been observed not only as an organisational-level construct but also at the individual level [21]. The five dimensions of EO, utilised to understand the entrepreneurial behaviour of an organisation, are therefore extended to exploring the entrepreneurial behaviour of the individual through IEO.

To successfully measure IEO, the questions posed should be based on the original EO dimensions, but they should be more distinctly aimed at understanding the individual rather than the organisation. Various papers, including Bolton and Lane's [22] landmark study among university students, have explored IEO using the EO dimensions and found that proactiveness, innovativeness, and risk-taking are the dimensions most prominently displayed by entrepreneurial individuals [22–24]. However, the other two variables (autonomy and competitive aggressiveness) returned a much lower Cronbach's alpha, which indicated a low reliability score. Bolton and Lane [22] indicated that this could have been caused by the lack of maturity among the students and that the students would not yet have been exposed to competitive environments. The IEO instrument, developed by Bolton and Lane [22], has been used extensively to measure IEO in various settings, although mostly among students. The instrument has been adapted to include only the three variables of IEO, due to the reasons provided above, but further studies are needed to verify this to ensure that autonomy and competitive aggressiveness do not indeed feature among a student body.

EE has also been praised for its ability to alleviate societal ills that exist in emerging and advanced economies. It has been found, that by encouraging individuals to pursue entrepreneurial ventures, further employment and growth are a reality. A study by Souitaris, Zerbini, and Al-Laham [25] found that students who engaged in entrepreneurial programmes had an increased orientation towards pursuing an entrepreneurial career.

The importance, however, lies in understanding the learning processes that currently exist to better understand the type of EE being received by students. A study by Fayolle and Gailly [26] revealed that three distinct learning processes currently exist with the aim of adequately educating students to become successful entrepreneurs. The first learning process has been classified as the *enterprising individual*, which attempts to enhance the entrepreneurial spirit of the student. To determine this entrepreneurial spirit, educators must understand the desirability and feasibility of an entrepreneurial venture to the student. Various factors could influence these feelings in a student, such as intention, orientation, and self-efficacy. To produce an enterprising individual, it is vital to mould someone who has a drive and passion to create value. Current entrepreneurial programmes utilise theory to better orient the student into understanding the various facets that are necessary to become a successful entrepreneur. The second learning process, identified by Fayolle and Gailly [26], is *learning to become an entrepreneur*. This is the process, used to allow students to partake in practical experiences of entrepreneurship, such as to operate in a real-life scenario. Through these experiences, students then understand the cognitive model of learning to manage problems in the organisation, instead of focusing only on managing the organisation. This learning process allows students to work through trial-and-error scenarios to focus their attention on being able to resolve an issue [27]. Two vital concepts, taught by the educators through this learning process, are effectuation and the ability of the students to understand the inevitability of failure. Through practical teachings, educators can showcase how students should ensure that they understand that the organisation is diverse, and without correct adaptation, failure could occur. In terms of effectuation, educators ensure that students understand that there is no one-size-fits-all approach, and each challenge, experienced in the organisation, needs to be dealt with uniquely. The third learning process is classified as *becoming an entrepreneurial academic*, which focuses on embracing the teachings of entrepreneurship [26]. This learning process is considered substantially different to the previous two processes, as this process is concerned with the theoretical nature of entrepreneurship and assisting doctoral students to better understand the research methods that exist in the creation of new entrepreneurial ventures [28].

Another important facet of this study is to better understand the connection between EE and IEO. A study by Van der Westhuizen [29] explored the notion of *Theory U*, which is a tool, used to develop a student's IEO over time in terms of a theoretical framework. The study discovered that through the use of the Theory U framework, a student's IEO could be enhanced. This is possible as students progress through various “evolutionary” stages in their education, which assists them in understanding interactions between themselves and others. Furthermore, authors have also revealed the importance of understanding the need for a more holistic and sustainable perspective on the education, received by students of entrepreneurship [30].

Research Aim. Few studies have explored the effect that entrepreneurial education has on the individual entrepreneurial orientation of university students, especially in the context of South Africa. The aim of the research is therefore to fill this gap in the literature by exploring the type of entrepreneurial education being received by students and how this may affect their entrepreneurial career choices.

2. Materials and Methods

This study adopted an exploratory research strategy and used an empirical research method, namely a Delphi study utilising academic experts in the field of entrepreneurship as participants. The Delphi technique is generally used to collect data from individuals in their area of expertise, through group communication, to achieve a consensus regarding a particular matter [31]. Literature regarding the Delphi study suggests that many iterations are often necessary; however, two iterations should be sufficient to reach a consensus [32]. Studies do not indicate an optimal number of participants to be used; however, Delbecq, Van de Ven, and Gustafson [33] indicate that 10 to 15 participants should be used. Twenty invitations for participation were sent to various academic experts in the field of entrepreneurship, with 16 confirming their availability to partake in the study. Experts from both South Africa and Scotland were included. The most prominent challenge with the Delphi technique is that many participants often drop out over the Delphi rounds [34]. In the present study, there was no drop-out from any of the academic experts, which resulted in both rounds of the Delphi study including all 16 academic experts (eight from South Africa and eight from Scotland). The academic experts that took part in the study culminated in a response rate of 80 %. Data for the Delphi study was collected in two iterations, online through Google Forms. Each participant was sent a link to complete each round. The data were analysed using thematic content analysis.

2. 1. Expert Panel Identification

The group of experts who took part in the Delphi study were specialists, considered to have in-depth knowledge and expertise in the field of entrepreneurship. All the experts are academics in the field of entrepreneurship at various South African and Scottish universities. The dynamic group of panel members was considered to have adequate knowledge and experience to provide an admissible understanding of the concepts of the study.

2. 2. Delphi Rounds

2. 2. 1. Round 1

During the first round of the Delphi, the questionnaire posed was made up of open-ended questions. According to Custer, Scarcella, and Stewart [35], the open-ended questionnaire serves as the cornerstone of seeking specific information from a particular content area. The type of questions that were posed to the experts was based on their understanding of the five IEO dimensions. The first five questions asked, “How do you believe that the [X] factor is critical in becoming a successful entrepreneur?” (where [X] represents innovativeness, proactiveness, risk-taking, competitive aggressiveness, or autonomy, in turn). A sixth question asked, “Do you believe there are any additional factors that an individual should possess in light of becoming a successful entrepreneur?”

The experts were then required to share their views on the current EE being taught to students at university level. The following questions were posed: (a) “How do you believe that entrepre-

neurial education/module should be taught in comparison to how it is currently being taught?"; (b) "Discuss how students can benefit from the entrepreneurial education being received in becoming successful entrepreneurs?"; (c) "How might the entrepreneurial education being received by a student at the university level influence whether he/she pursues an entrepreneurial career?"; (d) "Is there anything in particular that you believe the entrepreneurial curriculum/module should better possess?" and (e) "What traits do you envision an entrepreneurial lecturer to have that may positively affect the way, in which entrepreneurship is taught?"

2. 2. 2. Round 2

The second round of the Delphi study concentrated the answers from the first round into various themes. The experts were then required to rank the items (using a 5-point Likert scale) to successfully establish a first-level preference. At this stage of a Delphi study, it is also required that the researcher considers the level of agreement in terms of the concepts. Furthermore, the number of Delphi iterations should be based on whether consensus was reached and if the researcher can effectively make conclusions based on the information provided.

3. Results

The Delphi study aimed at exploring experts' views on the impact that EE has on the IEO of university students. The Delphi study was specifically geared towards investigating concepts of IEO and EE.

Table 1 indicates the five dimensions of EO, as proposed by Lumpkin and Dess [18]. As is shown by the results in the table, all the experts agreed that these five dimensions (autonomy, competitive aggressiveness, innovativeness, proactiveness, and risk-taking) underpin the construct of EO, with autonomy and competitive aggressiveness featuring less strongly. Each of the EO dimensions was fragmented into between six and eight variables for each dimension, based on open-ended questions, answered by the academic experts. This was done to better understand the importance of each dimension, based on what the experts felt was most relatable. According to literature (e.g., Bolton and Lane [22]), autonomy and competitive aggressiveness do not feature when measuring the IEO of university students. The present Delphi study supports this finding, as it indicates (based on the averages) that the experts placed less importance on the autonomy and competitive aggressiveness dimensions than the others. The dimensions of innovativeness, proactiveness and risk-taking were noted more frequently by the academic experts and therefore indicate that the experts placed higher importance on these. To understand each dimension in more detail, each variable was explored to understand the influence on the particular EO dimension. Upon assessment of the findings, it was determined, that the variable that influences the autonomy dimension most significantly is the ability of the entrepreneur to be independent, self-reliant, and determined. A study by Manda-Taylor, Masiye, and Mfutso-Bengo [36] indicates that a common term, used to clearly explain autonomy, is "self-determination." Along with this, these authors further revealed that autonomy empowers an individual to make independent decisions. With regard to the competitive aggressiveness dimension, the variable, featured most strongly, was the entrepreneur's desire to win. A study by Aigboje [37] revealed that the aggressiveness an organisation possesses ensures that it maintains its winning position over its competition. The most significant variable for the innovativeness dimension, according to full agreement by the experts, was the fact that innovation leads to a competitive advantage. In agreement with this, de Conto, Antunes-Junior, and Vaccaro [38] found that innovation, by means of competitive and growth strategies, has been a mechanism of survival and generates competitive advantages. Opportunity recognition featured most strongly as a variable, arising from the proactiveness dimension. A research study by Samsodien [39] assessed an individual's opportunity recognition and development abilities and found that positive attributes were retrieved in terms of the impact of proactiveness on opportunity recognition. Finally, in the risk-taking dimension, the variable of risk, being measured and controlled, was found to feature most strongly. A study by Bran and Vaid-

is [40] has revealed that although flaws exist in how risk is managed in an organisation, the importance lies in ensuring that risk is accurately measured and controlled in an organisation. **Table 1** indicates the expert's views on the factors and variables as alluded to by Lumpkin and Dess [18].

Table 1
Individual Entrepreneurial Orientation

No.	Factors ^a	Variables ^b	No. of experts c (N=6)	% of experts d
1	Autonomy	– Pertains to the ability of the entrepreneur to be independent, self-reliant, and determined	16	100
		– The ability to have confidence in one's own abilities, but utilise available resources	12	80
		– The autonomous entrepreneur should communicate end goals/strategies to employees to ensure understanding	13	85
2	Competitive Aggressiveness	– Can be regarded as the entrepreneur's "desire to win"	14	90
		– The level of competitiveness depends on the entrepreneur's conceptualisation of success	12	75
		– Can lead to danger if this competitiveness becomes the entrepreneur's core drive	13	80
		– It leads to a competitive advantage	16	100
3	Innovativeness	– Is a driver of the value in an organisation	15	95
		– Allows competing in a limited target market	13	80
		– Is a key that unlocks opportunities	13	80
		– Allows the adaptation of market changes	13	80
		– Allows opportunity recognition	16	100
4	Proactiveness	– Creates a first-mover advantage	14	90
		– Shapes the future of the organisation	13	85
		– Allows the entrepreneur to anticipate potential pitfalls	14	80
		– Allows the entrepreneur to "tap into new markets"	13	80
		– Risk should be measured and controlled	15	95
5	Risk-taking	– Should consider the perceived benefits	14	90
		– Depends on the agility of the entrepreneur	11	70
		– Is considered to be a "foundational dimension" of an entrepreneur	12	75
		– Emotional intelligence	16	100
6	Additional factors that may lead to a successful entrepreneur	– Possessing leadership qualities	16	100
		– Strategic mindset	16	100
		– Resilience	16	100
		– The ability to create a lasting vision	13	80
		– Strong industry experience	13	80

Note: ^a – footnotes are not used in scientific articles. Theoretical concepts provided by literature; ^b – Answers as received by the participants in the open-ended questions; ^c – Number of experts who took part in the Delphi study; ^d – Percentage of experts who reached a consensus regarding the given variable

Furthermore, in **Table 2**, the present Delphi study also asked that the experts indicate their level of agreement on whether certain factors would contribute to the success of an entrepreneur. In line with this, research by Kollmann, Christofor, and Kuckertz [20] found that various psychologi-

cal and non-psychological factors would influence an individual's orientation towards pursuing an entrepreneurial career. These psychological factors include the human motivation that the individual may possess, the willingness to exploit opportunities, and the ability of an individual to evaluate various opportunities. Furthermore, Blesa and Ripollés [41] indicated that the personal networks of an individual, along with the information, obtained from these networks, would positively affect the EO of the individual.

Table 2
Entrepreneurial Education

No.	Factors ^a	Variables ^b	No. of experts ^c (N = 16)	% of experts ^d
1	The manner, in which an entrepreneurial module is taught	– It should focus more on the objective of the module instead of a “one-size-fits-all approach”	12	75
		– The module should be more problem-recognition oriented	16	100
		– The module should involve real-life entrepreneurs that can share their actual experiences	15	95
		– It should include cultural variables	12	75
2	Ways, in which students can benefit from EE in becoming successful entrepreneurs	– Creates awareness on what to be on the look-out for	15	95
		– Providing the confidence to establish their own businesses	15	95
		– The student will be more inclined to become an entrepreneur should the education received be closely related to the ‘real-life experience’	14	90
		– Much of the beginning stages can be completed at university e.g. the idea generation	14	90
		– Helps students to develop creative and critical thinking skills	16	100
		– The students feel as though they have the necessary knowledge, skills and confidence	14	90
3	Factors that would motivate students to pursue an entrepreneurial career based on EE received	– Educators effectively communicate the opportunities and challenges of pursuing a venture	14	90
		– It can influence the attitude of the student to pursue an entrepreneurial career	14	90
		– Universities can provide incubation units	16	100
		– The student may learn the technical and soft skills required to be an entrepreneur	14	90
		– Better prepare the students for the failures that can occur	16	100
4	Factors that should be included in an entrepreneurial curriculum/module	– Practical examples with cultural perspectives	14	90
		– More interaction with experienced entrepreneurs	15	95
		– Focus on the use of technology in the start-up process e. g. the influence of AI	14	90
		– Better prepare the students to understand the socio-economic realities of their specific country i.e. ensure a more context-driven approach	14	90
		– Developing entrepreneurial competencies	15	95

Note: ^a – Theoretical concepts, provided by literature; ^b – Answers as received by the participants in the open-ended questions; ^c – Number of experts who took part in the Delphi study; ^d – Percentage of experts who reached a consensus regarding the given variable

Table 2 represents the EE concept and how it was broken down into various themes (the “Factors” column). Upon investigation of each of these factors, it was found, that again, the experts noted more substantial variables. With regard to the manner, in which an entrepreneurial module is taught, experts expressed that an entrepreneurial module should ensure that it is focused on problem recognition. A study by Kim, Choi, Sung, and Park [42] explored the relationship between individual problem-solving abilities and opportunity through innovative

behaviour and found that various learning strategies need to be developed to better design courses around problem recognition. Furthermore, Ratten and Usmanij [43] indicate that importance should also be placed on extra-curricular activities in conjunction with EE. They suggest that external environments should be utilised to better engage with the students. These external environments include site visits and excursions. The Delphi study asked experts to state their agreement with ways, in which students can benefit from EE in becoming successful entrepreneurs. The variable that featured most strongly was the ability of the EE to assist in a student's creative and critical thinking skills. Research has revealed that creative thinking is cherished in EE as a fundamental skill. Creative thinking may be described as the readiness, experienced by an individual as a new way of doing things [44]. However, the knowledge and skills, developed by the students while being educated, also play a profound role in creating successful entrepreneurs. Sousa and Almeida [45] indicate that educational institutions are key players in introducing students to the necessary knowledge and skills at a very early stage. Moreover, EE should also take the business experience of the students into account. This is a vital aspect to consider when designing a curriculum to ensure that students at all levels (from those having no experience at all to those who may be running their businesses) are advantaged by the teachings being received [46]. Next, experts were requested to share their opinions on the factors that would motivate students to pursue an entrepreneurial career based on the EE they received. The variable that featured most strongly was that universities should provide incubation units to motivate students in pursuing an entrepreneurial career after their studies. Hassan [47] has found that universities should ensure an effective incubation system, as this has been seen to successfully enhance and promote entrepreneurship for students. Finally, the experts were asked to identify factors that they felt should be included in an entrepreneurial module or curriculum. The most prominent variable is that entrepreneurial curricula should better prepare students for the failures that may occur during their entrepreneurial endeavours. The importance lies in ensuring that students understand that failure is often inevitable – in South Africa, for example, 50 % of start-up businesses fail within the first 24 months [48].

Limitations and Recommendations. The academic experts, included in the Delphi study, were from various South African and Scottish Universities. However, future research could consider other settings to further the generalisability.

Future studies could consider exploring the perspectives of the students to complement the views of academic experts. By doing so, this may improve the understanding of how the entrepreneurial education students have received has impacted their orientation to begin their businesses. It is our recommendation that tertiary institutions should design their programmes in a way that would enhance the skills and knowledge, necessary for students to adequately pursue an entrepreneurial career. This research revealed that entrepreneurial curricula and modules should be better set up to enhance entrepreneurial understanding through practical teachings, rather than being purely theoretical in nature.

4. Conclusion

The level of entrepreneurship is an important aspect of any country. This can be attributed to the socio-economic benefits that entrepreneurship may bring about. Such benefits include increased economic growth, alleviation of poverty, and provision of job opportunities, among others [49]. However, the challenge lies in ensuring that students are oriented to pursue an entrepreneurial career upon graduation. One way to confirm that an individual is oriented towards pursuing an entrepreneurial career is to provide the necessary EE. Therefore, this study aimed to better understand the impact that EE has on the IEO of university students. The findings reveal that three of the five EO dimensions (namely, innovativeness, proactiveness, and risk-taking) are more noticeable among a student body, which is in line with a study, conducted by Bolton and Lane [22]. Although studies have analysed IEO in a student body using the three dimensions, authors, such as Ferreira, Jalali, Bento, Marques, and Ferreira [50], have noted the importance of still exploring the IEO of a student body using all five IEO dimensions, as the findings of Bolton and Lane [22]

need to be further verified. With regard to EE, it has been noted as a pillar to enhancing the level of entrepreneurship within a country.

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