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SUSTAINABILITY ORIENTATION AND SUSTAINABLE ENTREPRENEURIAL INTENTIONS OF UNIVERSITY STUDENTS IN SOUTH AFRICA*

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Abstract. Sustainability behaviour can be predicted by intentions. The study investigated the relationship between sustainability orientation (SO) and sustainable entrepreneurial intentions (SEI) of university students in South Africa. The study adopted a quantitative research design that involved the use of survey. The self-administered questionnaire method was used to collect data from the survey participants using the cross-sectional approach. The participants in the survey were final year undergraduate students of the Department of Business Management of two South African universities. Three hundred and one students participated in the survey. Reliability was measured using the Cronbach's alpha. The data analysis methods for the study were descriptive statistics, correlation and regression analysis. The results indicated that SO is a predictor of SEI of university students. Limitations, areas for further study and recommendations to improve the SO of university students focus on passive and active teaching methods of sustainable entrepreneurship.

Keywords: sustainable entrepreneurship; sustainability orientation; sustainable entrepreneurial intentions; university, students; South Africa

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JEL Classifications: M10, M13

1. Introduction

The major focus of entrepreneurship is the discovery, evaluation and exploitation of the opportunities to create goods and services (Venkataraman, 1997; Shane & Venkataraman, 2000). The benefits of entrepreneurship are both financial and non-financial and can be examined from individual, business and national levels. The financial benefits of entrepreneurship include increase in cash flow, revenue and return on investment for individuals and businesses and improvement in employment and the gross domestic product of a country. Some of the non-financial benefits of entrepreneurship are independence, autonomy and improvement in the standard of living. Entrepreneurship helps to bring change and innovation and can lead to comparative advantage in international

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trade (Luke, Verrenynne & Kearins, 2007; van Praag & Versloot, 2008; Chirani, Farahbod & Pourvahedi, 2013; Dorobat & Topan, 2015). Despite the benefits associated with entrepreneurship in the past century, there are concerns that it has also brought about an increase in the level of income inequality and the degradation of the natural environment. Although traditional entrepreneurship has brought about many benefits, the world is faced with many social and environmental challenges. These include natural disasters, climate change, environmental pollution, crime and corruption. The net value of the benefits of entrepreneurship should include its social and environmental costs (Dean & McMullen, 2007. van Praag & Versloot, 2008; Zahra & Wright, 2016).

The environmental and societal challenges caused by entrepreneurship do not necessarily need to be solved through government intervention. Individuals and businesses have a prominent role to play in resolving these problems (Kurkertz & Wagner, 2010). Entrepreneurship can help to resolve the noted socio-environmental issues. The conclusion of environmental economics is that the degradation of the natural environment arose from market failure. Market imperfections such as externalities, inefficient firms, flawed pricing mechanisms and information asymmetries have contributed to environmental degradation. However, social and environmentally relevant market failures represent entrepreneurial opportunities. Entrepreneurial actors can achieve positive economic returns by exploiting social and environmentally relevant market failures through radical technologies and innovative business models. This has laid the foundation for sustainable entrepreneurship, a business model in which entrepreneurs can obtain economic rent while also improving social and environmental concerns. The traditional explanation of value creation as purely measured by economic profit has extended to include non-economic gains. Sustainable entrepreneurship allows entrepreneurs to obtain economic profits while also addressing environmental and social challenges (Dean & McMullen, 2007; Cohen & Winn, 2007; Sarango-Lalangui, Santos & Hormiga, 2018; Nhemachema & Murimbika, 2018).

Porter & Kramer (2011) argue for the concept of shared value as the guiding principle of business. Shared value focuses on the connection between economic and societal progress and has the power to unleash the next wave of business growth globally.

Sustainability orientation (SO) refers to businesses that focus on sustainability. Kuckertz & Wagner (2010) ascribe SO to entrepreneurs as individuals rather than to businesses. At the individual level, SO is the situation where the owner/manager of a business has a proactive orientation towards societal and environmental issues (Diehl, Greenvoss & Klee, 2015). Roxas & Coetzer (2012) describe SO as a business orientation that focuses a company's philosophy on doing business in a socially and environmentally sustainable way. Tran & Von Korfflesch (2016) point out entrepreneurial behaviour can be predicted by intentions. The Theory of Planned Behaviour (TPB) (Ajzen, 1991) argues that intentions can be used to predict actual behaviour. TPB has been found to predict actual entrepreneurial behaviours (Hockerts, 2017). Sustainable entrepreneurial intention (SEI) refers to an individual's willingness to become a sustainability-oriented entrepreneur. SEI focuses on the intent to start a business that considers social and environmental issues (Kurkertz & Wagner, 2010; Sung & Park, 2018). The issue regarding the drivers of entrepreneurial intentions in sustainable entrepreneurship is pertinent (Vuorio, Puumalainen & Fellnhofner, 2018). While the entrepreneurial intentions of traditional entrepreneur has been well researched, there is limited academic evidence on intention formation in the field of sustainable entrepreneurship (Nhemachema & Murimbika, 2018; Vuorio et al. 2018) and from a developing country perspective (Hockerts & Wüstenhagen, 2010; Belz & Binder, 2015). The aim of this study is to examine the effect of individuals' sustainability orientation (SO) on the sustainable entrepreneurial intention (SEI) of university students. Today's young adults are more socially aware and environmentally and entrepreneurially conscious. University students are the future generation of a society and have a passion for looking at different career options including sustainable entrepreneurship. Graduates make up a large proportion of all entrepreneurially active individuals (Kurkertz & Wagner, 2010; Ip, Wu & Liu, 2017). This study will make a contribution to the literature on SO and SEI. First, this study focuses on SO from the perspective of a developing country where empirical studies were relatively few. Second, the findings of empirical research on the effect of SO on SEI are inconclusive. Some

studies find a significant positive relationship, whilst other studies find an insignificant relationship (Kamal & Jameela; 2017; Sung and Park, 2018). The findings of this study can help universities and governments in their strategic and operational decision-making processes and policies to improve sustainability orientation. The paper is organised as follows: The literature on sustainability, sustainable entrepreneurship, SO and SEI is reviewed in the next section. This is followed by the explanation of the research methodology and the results. Finally, the conclusion and recommendations are presented.

2. Literature review

2.1 Sustainability

The concept of sustainability is a large and pervasive issue that currently defies a universal definition. Sustainability is a transdisciplinary field and there are many different views on what it is and how it can be achieved (Djordjevic & Cotton, 2011; Little, 2014). The idea of sustainability stems from the concept of sustainable development which became common language at the World's first Earth Summit in Rio in 1992. The Brundtland Report for the World Commission on Environment and Development (1992) defines sustainability as “*development that meets the present without compromising the ability of future generation to meet their own needs*”. The World Commission on Environment and Development defines sustainability as “*a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations*”. Sustainability is the way an organisation creates value for its owners and society by maximising the positive and minimising the negative effects of social, environmental and economic issues (Accenture, 2011). The idea of sustainability having three dimensions can be linked to the Triple Bottom Line (TBL) concept by Elkington (1994). TBL incorporates three dimensions of performance namely financial, social and environmental and captures the essence of sustainability by measuring the full impact of an organization's activities including its profitability and its environmental and social capital (Slaper & Hall, 2011).

2.2 Sustainable entrepreneurship

The initial research on sustainable entrepreneurship (SE) focused on the relationship between entrepreneurial activity and environmental problems and solutions. Gradually the term became broader and closer to the TBL and that businesses need to be aware of the impact of their activity from an environmental and a social perspective (Sarango-Lalangui et al. 2018). Researchers often use sustainable entrepreneurship as synonymous to environmental entrepreneurship and ecopreneurship (Binder & Belz, 2015). Other researchers hold SE as the link between economic, environmental and social value creation (Kuckertz & Wagner, 2010; Patzelt & Shepard, 2011). There is no universal consensus on the exact meaning of the construct SE (Tarnanidis & Papathanasiou, 2015). According to Tilley & Young (2009), SE is future-orientated and takes into consideration economic prosperity, social justice and environmental protection. The common theme in the literature on SE includes these three dimensions and thus SE can be defined as the “*enduring entrepreneurial process that crafts organizational goals consistent with the taxonomy of central core values. Organizational goals refer to the creation, evaluation, and exploitation of opportunities that promote internal and external sustainable development gains inside the triple-bottom line of economic, social, environmental tributes*” (Tarnanidis & Papathanasiou, 2015 p 15).

Shane & Venkataraman (2000, p. 218) define entrepreneurship as “*the scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited.*” Thus SE can be defined the “*scholarly examination of how opportunities to bring into existence future goods and services are recognized, developed, and exploited by whom, and with what economic, social and ecological consequences*” (Binder & Belz, 2015, p1). Sustainable entrepreneurship differs from social entrepreneurship which tends to focus on social missions. Sustainable entrepreneurship creates products and services that create the economic value of traditional entrepreneurship and also focus on addressing social and environmental issues (Schaefer, Corner & Kearins, 2015; Binder & Belz, 2015). Traditional entrepreneurship focuses mainly on profit

(single bottom-line). Social entrepreneurship is concerned with economic and social goals (double bottom-line). Sustainable entrepreneurship centers on economic, social and environmental goals (triple bottom-line) (Thompson, Kiefer & York, 2011; Belz & Binder, 2015).

2.3 Sustainability orientation and sustainable entrepreneurial intention

Sustainability orientation (SO) refers to businesses that focus on sustainability. Kuckertz and Wagner (2010) relate SO to entrepreneurs as individuals rather than to businesses. At the individual level, SO is the business where the owner/manager has a proactive orientation towards societal and environmental issues (Diehl et al. 2015). SO is a business orientation that focuses a company's philosophy of doing business in a socially and environmentally sustainable way (Roxas & Coetzer, 2012). SO comprises of items that examine the underlying attitudes and personal traits on social responsibility and environmental protection (Sung & Park, 2018; Nordin, Iksan, Nusaibah & Salehudin 2018). Sustainable entrepreneurial intention (SEI) refers to an individual's willingness to become a sustainability-oriented entrepreneur. SEI is the intent to start a business that considers social and environmental issues (Kurkertz & Wagner, 2010; Sung & Park, 2018). The intention to start a venture is supported the TPB by Ajzen (1991). The TPB extends the Theory of Reasoned Action (Fishbein & Ajzen, 1980). The TPB postulates that the intention of an individual determines his or her actual behaviour. The fundamental assumption of the TPB is that human behaviour is planned and preceded by intention towards that behaviour. The TPB is a strong predictive model for explaining human behaviour (Armitage & Conner 2013; Yuzhanin & Fisher, 2016).

Claudy, Peterson & Pagell (2016) find that at the firm level, SO is a strategic resource that leads to competitive advantage and superior financial performance. The literature is inconclusive about the relationship between SO and SEI. Kuckertz & Wagner (2010) examine the relationship between SO and the entrepreneurial intention of engineering and business university student. The results indicate that engineering students with a stronger SO have higher levels of entrepreneurial intention. However, this effect disappears for business students. Salma. Kamal & Jameela (2017) find no association between SO and entrepreneurial intentions. Nordin et al. (2018) find a significant positive correlation between entrepreneurial thinking and SO. Sung and Park (2018) also in a study of university students reveal that there is a significant positive relationship between SO and opportunity recognition and SEI. The argument of this study is that individuals with SO will be better able aware and recognise sustainability opportunities and this can lead to the SEI. Consequently, it is hypothesised that there is a significant positive relationship between individuals' sustainability orientation and their sustainable entrepreneurial intention.

3. Research methodology

The study adopted the quantitative research design that involved the use of survey. Self-administered questionnaire method was used to collect data. The cross-sectional approach was used for data collection. Cross-sectional surveys are relational because they can scientifically investigate associations between two or more research constructs. The participants in the survey were final year undergraduate students of the Department of Business Management of two universities located in the Limpopo and Gauteng provinces of South Africa. The participants were conveniently sampled. Questionnaires were distributed after lecture with the help of the lecturers. The questionnaire was pretested with thirty students and this led to minor amendment to improve face and content validity. . For ethical consideration, the participants were informed about the aim of the study, participation was voluntary, and confidentiality and anonymity were assured. Reliability was measured using the Cronbach's alpha. The data analysis methods for the study were descriptive statistics, correlation and regression analysis. The variables in the study were measured as follows:

SO: Survey questions to measure SO were adapted from previous studies (Kurkertz & Wagner 2010; Sung & Park, 2018). The exploratory research on SO was by Kurkertz & Wagner (2010). The items used to measure SO

by Kurkertz & Wagner (2010) had a Cronbach’s alpha of 0.64 and the authors add that for a new construct, an alpha value of 0.6 is deemed sufficient as suggested by Peterson (1994). Sung & Park (2018) had a Cronbach’s alpha of 0.89. SO was measured at the individual level using the five-point Likert scale with “1 strongly disagree” and “5 strongly agree”. The six questions used to measure SO were (1) firms should take an internationally leading role in the field of environmental protection. (2) corporate social responsibility should be part of the foundations of a firm (3) environmental problems are one of the biggest challenges facing our society (4) firms and entrepreneurs should take on a larger social responsibility (5) in the future, financial institutions will put great emphasis on firms’ environmental performance (6) firms with an environmental orientation will have advantages in recruiting and retaining qualified employees. The average score of the six items was used to calculate the SO index.

SEI: Items to measure SEI were adapted from previous studies (Sung & Park, 2018) with Cronbach’s alpha of 0.92 and Nordin et al. (2018) with Cronbach’s alpha of 0.74 SEI was measured at the individual level using the five-point Likert scale with “1 strongly disagree” and “5 strongly agree”. The four questions used to measure SEI were: (1) Becoming a sustainable entrepreneur is my professional goal (2) I am willing to do anything to become a sustainable entrepreneur (3) I feel enthusiastic to become a sustainable entrepreneur (4) becoming a sustainable entrepreneur is an interesting but challenging task.

4. Results and discussion

Three hundred and twenty questionnaires were distributed and three hundred and one questionnaires were returned and found usable. The response rate was 94%. The gender composition of the respondents was 54% female and 47% male. All the respondents were between 20 and 30 years. Independent samples T-test did not indicate any significant gender difference in the results.

4.1 SO of university students

Table 1. Descriptive statistics of SO

Measure	Mean	Standard deviation
Firms should take an internationally leading role in the field of environmental protection.	4.05	1.04
Corporate social responsibility should be part of the foundations of a firm	4.40	1.01
Environmental problems are one of the biggest challenges facing our society	4.55	1.01
In my opinion, firms and entrepreneurs should take on a larger social responsibility	4.10	0.97
In the future, financial institutions will put great emphasis on firms’ environmental performance	3.90	1.03
Firms with an environmental orientation will have advantages in recruiting and retaining qualified employees.	4.05	0.00
SO index	4.18	1.04
Cronbach’s alpha	0.84	

Source: data analysis

Table 1 depicts the SO index of the survey participants. The Cronbach’s alpha is 0.84 which indicates the reliability of the measuring scale of SO. Nunnally (1978) points out that a Cronbach’s alpha of 0.7 is viewed as the minimum acceptable level of reliability. The scale mean of SO is 4.18 which shows a high level of SO. On a five point Likert scale, a mean value below three is considered as low, three to four medium and above four high (Alarape, 2013; Neneh and van Zyl, 2017). The items with the highest means are environmental problems are one of the biggest challenges facing our society (4.55) and corporate social responsibility should be part of the foundations of a firm (4.40). This suggests that university students are concerned with both environmental and social issues. Today’s young adults are more socially aware and environmentally conscious. University students

are the future generation of a society and have a passion for looking at different career options including social and sustainable entrepreneurship. (Kurkertz & Wagner, 2010; Ip et al. 2017). The high level of SO of university students is consistent with the findings of Sung & Park (2018).

4.2 SEI of university students

Table 2. Descriptive statistics of SEI

Measure	Mean	Standard deviation
Becoming a sustainable entrepreneur is my professional goal	3.32	0.98
I am willing to do anything to become a sustainable entrepreneur	3.40	1.03
I feel enthusiastic to become a sustainable entrepreneur	3.42	1.01
Becoming a sustainable entrepreneur is an interesting but challenging task.	3.50	1.06
SEI index	3.41	1.01
Cronbach’s alpha	0.76	

Source: data analysis

Table 2 depicts the SEI of the survey participants. The Cronbach’s alpha is 0.76 which indicates the reliability of the measuring scale of SEI. The scale mean of SEI is 3.41 which shows a moderate level of the intention of study participants to become a sustainability-oriented entrepreneurs. The findings are consistent with Nordin et al. (2018) and Sung and Park (2018) about the SEI of university students.

4.3 Correlation and regression results

The assumptions of correlation and regression include normality, homoscedasticity and absence of multicollinearity. Normality was assessed by examining the normal P-P plot. The data forms a straight line along the diagonal, thus normality can be assumed. To assess homoscedasticity, the researcher created a scatterplot of standardised residuals verses and standardized predicted values. The plot shows random scatter, thus assumption is met. Multicollinearity was assessed by calculated variance inflation factors (VIFs). VIF value is 4 which indicates that multicollinearity can be assumed.

Table 3. Regression results of SO and SEI

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std.Error	Beta		
Constant	103.048	3.099		1.309	.001
SEI	1.071	.0599	.611	11.114	.001

N=301, R= 0.681, R square .7649, Adjusted R square =.693, Sig.< 0.05

Source: data analysis

The relationship between SO and SEI was analysed using Pearson correlation and regression analysis. The results of the correlation. The results (R =0.71, Sig.< 0.05) indicate a significant positive correlation between SO and SEI. The results of the regression analysis are depicted in table 3 (R square=0.693; Beta=0.611, Sig < 0.05) indicate a significant positive relationship between SO and SEI. The findings are consistent with previous empirical studies on SO and SEI of university students. Nordin et al. (2018) find a significant positive correlation between entrepreneurial thinking and SO. Sung & Park (2018) find a significant positive relationship between SO and SEI of university students. However, the findings of this study are inconsistent with the results of Kuckertz & Wagner (2010) which indicate that engineering students with a stronger SO have higher levels of entrepreneurial intention. However, this effect disappears for business students. In addition, Salma. Kamal & Jameela (2017) find no association between SO and entrepreneurial intentions. The Theory of Planned Behaviour (TPB) (Ajzen, 1991)

argues that intentions can be used to predict actual behaviour. The results suggest that university students will have a proactive orientation towards societal and environmental issues when they become business leaders.

5. Conclusion

SO refers to businesses that focus on sustainability. At the individual level, SO is the situation where the owner/manager of a business has a proactive orientation towards societal and environmental issues. SEI focuses on the intent to start a business that considers social and environmental issues. The aim of this study is to examine the effect of SO on SEI of university students. The intention to start a venture is supported the TPB by Ajzen (1991). The TPB postulates that the intention of an individual determines his or her actual behaviour. The fundamental assumption of the TPB is that human behaviour is planned and preceded by intention towards that behaviour. The TPB is a strong predictive model for explaining human behaviour. Today's young adults are more socially aware and environmentally and entrepreneurially conscious. The results indicate a significant positive relationship between SO and SEI. The findings are consistent with Nordin et al. (2018) and Sung and Park (2018). From an empirical perspective, the findings contribute to the literature on sustainable entrepreneurship, SO and SEI. The findings revealed that SO positively impacts on SEI of university students. To improve the SO of university students, the curriculum should include sustainable entrepreneurship at both undergraduate and graduate levels for all university students. The teaching of sustainability entrepreneurship must be passively and actively managed. Sustainable entrepreneurship experts in universities, institutes and business should be invited to provide both the theoretical and practical knowledge to students. Competition on entrepreneurship in universities should focus on sustainable entrepreneurship. Students should go for practical experiences in sustainable organisations. Universities should create endowed chairs on sustainability to improve the teaching and research on sustainable entrepreneurship. In addition, university management should develop a sustainability plan and be involved in sustainability actions. Sustainability policy statements of university should be communicated to all stakeholders including students. The performance of universities should reflect the sustainability balanced score card. Organisations that support small businesses in South Africa such as the Small Business Development Agency (SEDA) should include sustainable entrepreneurship in their strategic and operational plans. This can assist these organisations in designing training programmes on sustainable entrepreneurship for university students and small businesses.

The study has some limitations. First, the study used convenience sampling method and only 301 students from two universities participated in the study. Therefore, care should be exercised in generalising the findings of the study. Second, the study used the cross-sectional approach and cannot be used to analyse behaviour over a period to time. This limits the ability of the study to determine cause and effect. Because of the cross-sectional nature, the timing of the survey is not guaranteed to be representative. Other studies can explore the effect of SO on the entrepreneurial orientation of university students. A cross-country (developing and developed countries) study of SO and SEI of university students will help to generalise the findings of this study. In addition, a longitudinal study that will provide causal inferences into the relationship between SO and SEI can be explored.

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<https://orcid.org/register>

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