



Generation Y university students' intentions to become ecopreneurs: A gender comparison

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ABSTRACT

Recently, the worsening state of the natural environment has caused researchers and practitioners to rethink the way in which this issue should be solved. It has been argued that the solution should not simply be one of regulation but rather of innovation. As such entrepreneurship, or more specifically ecopreneurship, has been identified as a possible avenue to bring about pro-environmental transformation within the business sector. To date however, research within the field of ecopreneurship is still lacking, especially within a developing country context, such as South Africa. In addition, most of the ecopreneurship data available do not report on gender differences. The purpose of this study was therefore to determine Generation Y students' intentions towards becoming ecopreneurs within the context of South Africa, more specifically the Gauteng province, and to determine if any differences exist between male and female students. The study made use of primary data obtained through self-administered questionnaires that were distributed to 600 students across three (3) universities in South Africa. The variables used to determine student's intentions to become ecopreneurs included environmental concern, environmental behaviour, perceived environmental knowledge, attitude towards ecopreneurship, perceived behavioural control, subjective norm and intention towards ecopreneurship. A combination of the judgement and convenience sampling techniques were used to identify the study sample. The statistical analysis used to analyse the collected data included, descriptive and reliability analysis and an independent sample t-test. The study found that students generally displayed positive intentions towards becoming ecopreneurs and that no significant difference was noted between male and female students regarding most of the previously mentioned variables. Female students did, however, record higher statistical means for environmental concern than male students.

Key phrases

Ecopreneurship; entrepreneurship; environment; Generation Y and South Africa

JEL Classification: L26

1. INTRODUCTION

In its infancy stage, ecopreneurship has identified ecopreneurs or green entrepreneurs as the cornerstone of developing and sustaining greener business sectors, economies and societies. (Costea-Dunarintu 2016:340; Kirkwood, Dwyer & Walton 2017:130; McEwan 2013:281). As more scientific evidence is discovered linking the deteriorating condition of the natural environment due to anthropogenic activities (Ripple, Wolf, Newsome, Galetti, Alamgir, Crist, Mahmoud & Laurance 2017:1026; Wolfgramm 2016:15; World Economic Forum (WEF) 2019:6) increased pressure has been placed on the business sector to become more sustainable and environmentally responsible in business practices (Nikolaou, Tsagarakis & Tasopoulou 2018:195; Oláh, Aburumman, Popp, Khan, Haddad & Kitukutha 2020:1). The main cause of environmental degradation can be attributed to the heavily industrialised business sector which is considered the predominant source of air and water pollution (Cohen & Winn 2007:29). Although efforts have been made over the years to encourage the business sector to be more environmentally sustainable, earth's natural environment continues to deteriorate at an accelerating rate (Khondker 2015:35; WEF 2019:6; World Wildlife Fund (WWF) 2018:30). The onus now falls onto a new generation of innovators to introduce improved innovative methods of living and to conduct sustainable business practices which will benefit the natural environment rather than harm it (Rodríguez-García, Guijarro-García & Carrilero-Castillo 2019).

The Generation Y cohort is statistically one of the largest, most influential and most educated generations to date (Fry 2020; Kruger & Saayman 2015:366). In South Africa the Generation Y cohort alone make up approximately 36% of the country's entire population (Statistics South Africa 2018:10). This cohort is characterised as highly cognisant and better educated regarding environmental problems; more so than preceding generational cohorts (Williams 2017). Furthermore, previous studies have indicated that members of the Generation Y cohort display positive entrepreneurial intentions (Iwu, Ezeudji, Eresia-Eke & Tengeh 2016:177; Malebane & Swanepoel 2015:89; Marire 2015:59). Generation Y university students are thus ideal candidates for the purpose of this study. In past studies, males generally reported higher entrepreneurial intentions than females (Langowitz & Minniti

2007:341; Tran & Tran 2018:10; Veciana, Aponte & Urbano 2005:180). Concerning environmental awareness and behaviour, females are often reported to display higher means than their male counterparts (Vicente-Molina, Fernández-Sainz & Izagirre-Olaizola 2018:89; Wallhagen, Eriksson & Sörqvist 2018:11). Some suggest that this eco gender gap is due to what researchers call the 'green-feminine stereotype', which is the cognitive association of eco-friendly behaviour with femininity (Brough, Wilkie, Ma, Isaac & Gal 2016:567; Obermiller & Isaac 2018:45). According to this, men who associate eco-friendly behaviour with femininity and who wish to maintain a more masculine image will likely avoid eco-friendly behaviour. Today however, an increasing amount of Generation Y members are challenging traditional gender norms and stereotypes (Green & McClelland 2019:6). Although ecopreneurship has been identified as a possible avenue to address environmental issues and the Generation Y cohort has been identified as future leaders and entrepreneurs, to date little is known about Generation Y's intentions of becoming ecopreneurs. The objective of this study was therefore to determine Generation Y students' intentions towards becoming ecopreneurs within the context of South Africa and to identify if any differences exist between male and female students. The findings of this study will thus fill a gap in literature regarding Generation Y student's ecopreneurial intention and if there is a difference in intentions between male and female students.

2. LITERATURE REVIEW

The past four (4) decades have seen environmental issues critically increase and become one of the key problems facing the world today (Jaeger 2018:395; Kirman 2018:18; WWF 2018:4). According to the WEF's annual global risk report (WEF 2019:6), three (3) of the top five (5) global risks facing humanity currently are environmentally driven issues. According to the latest land-ocean temperature index, which measures the annual average temperature globally, 18 of the 19 warmest years have all occurred since 2001 (National Aeronautics and Space Administration/Goddard Institute for Space Studies 2019). Stewart and Johnson (2018:441), the WEF (2019:15) and Khondker (2015:35) warn that the environmental issues currently faced, if left unchecked could usher in an era of unprecedented destruction resulting in a severely negative impact on societies and economies on a global scale. Globally, the environmentalist movement appears to have reached an all-time high (Harvey 2019). In South Africa, a healthy environment is regarded as vitally important, in fact, according to Section 24 of the Constitution (1996), it is viewed as a basic human right. As such, South African legislation is rife with laws relating to the natural environment (Republic of South Africa (RSA) 2019).

Legislation such as the King IV report for corporate governance or the more recently passed Carbon Tax Act (No. 15 of 2019), to name a few, pose implications on South African businesses and failure to comply with requirements could result in legal action against the business (RSA 2019). In addition to the legal implications, businesses are increasingly pressured by consumers and stakeholders to become more sustainable and environmentally friendly (Oláh, Kitukutha, Haddad, Pakurár, Máté & Popp 2019:1; Yenipazarli 2019:767). In more recent times, incorporating environmental innovation into business strategies can even be leveraged as a means of gaining competitive advantage in the market (Doran & Ryan 2016:115). By nature, entrepreneurs are opportunity seekers and problem solvers, therefore, entrepreneurs play a significant role in curbing environmental issues through innovation (Koubaa 2017:84; McEwan 2013:281).

According to the Schumpeterian theory, entrepreneurs are individuals who bring about change through the development and introduction of new products, services, production methods, technologies and sources of material, the creation of new organisations or the identification of new markets (Sambo 2018:18; Schumpeter 2012:3). This is often referred to as the process of “creative destruction” because these new products, services and processes which entrepreneurs innovate replace the existing ones, often making them obsolete (Schumpeter 1942:78; Schurenberg 2012:53; Tülüce & Yurtkur 2015:721).

The term “ecopreneurship” is a combination of the words “ecological” and “entrepreneurship” (Panackal, Singh & Sharma 2016:1321; Rodríguez-García *et al.* 2019). It is often used interchangeably with environmental entrepreneurship, sustainability entrepreneurship and green entrepreneurship (Rodríguez-García *et al.* 2019; Thompson, Kiefer & York 2011:217). Ecopreneurship, however, although closely connected to, is distinct from environmental entrepreneurship and sustainable entrepreneurship. According to Lenczuk (2017:7), ‘type hierarchy’, ecopreneurship and social entrepreneurship are subfields of sustainable entrepreneurship. Although ecopreneurship mainly only focusses on ecological aspects and social entrepreneurship on social aspects, the two (2) subfields can also overlap creating a third subfield, environmental entrepreneurship, which focusses on a mix of both ecological and social aspects (Lenczuk 2017:7). Existing literature reveals that ecopreneurship can be defined both in a broader and more narrow way and no consensus has been reached on a single all-inclusive definition for ecopreneurship (Santini 2017). According to McEwan (2013:267), this is because all ecopreneurs at any given time fall within a certain position along a continuum of ecological orientation. The two opposite ends of this ecological orientation continuum comprise pure ecopreneurs, who continually seek and implement practices that are beneficial to the environment at the one end and profit orientated

entrepreneurs, who do not consider environmentally friendly practices at the other (Schick, Marxen & Freimann 2002:59). Authors including Steyaert (2004:6) and Isaak (2002:82) also emphasise that whilst achieving a pure form of ecopreneurship is unattainable, ecopreneurs still set out on a continuous process of 'becoming', meaning they constantly move along the ecological orientation continuum and therefore cannot be labelled as a single type. For the purposes of this study, ecopreneurship is broadly defined according to McEwan's (2013:267) definition: "any entrepreneurial action that contributes to preserving the natural environment".

The rapid growth of the general population combined with the rise of industrialism and economic expansion over the last few decades, are often considered to be closely connected to the deteriorating state of the environment (Roser, Ritchie & Ortiz-Ospina 2019; Wolfgramm 2016:15). Increasing pressure has subsequently been placed on the business sector by both activists and society to reduce the negative impact the industry imposes on the environment (Cohen & Winn 2007:29; McEwan 2013:265; Nikolaou *et al.* 2018:195). As a result, various corporate environmental programmes, sustainability initiatives and corporate greening strategies have begun to emerge in business models (Cohen & Winn 2007:30; York & Venkataraman 2010:449). However, authors Dixon and Clifford (2007:326) note that corporate social responsibility (CSR) and corporate greening strategies are slow incremental processes, whereas the process of creative destruction makes more significant strides towards reaching true sustainability. A green or eco business thus seeks to minimise the use of input resources by implementing environmentally friendly products, services and processes, while still encouraging productivity (Panackal *et al.* 2016:1325).

The emergence of ecopreneurship, according to Cohen and Winn (2007: 29), is a result of market failures such as information irregularities, defective pricing mechanisms, inefficiency in organisations and externalities. Dean and McMullen (2007:50) similarly state that market failures both contribute towards the deterioration of the environment but simultaneously create opportunities for entrepreneurs to capitalise on solving environmental issues. Schaltegger (2002:46) explains that in line with the Schumpeterian theory, ecopreneurs assist environmental issues by "destroying" old conventional products, methods, practices and market structures and replaces them with innovative, environmentally friendly alternatives. In South Africa, entrepreneurship has already been recognised as an avenue through which prominent socio-economic issues such as high unemployment rates, poverty and income inequality, can be addressed (Anjum, Sharifi, Nazar & Farrukh 2018:429; Herrington, Kew & Mwanga 2017:5; Mannan 2018:27; Meyer & Meyer 2019). Similarly, ecopreneurship can be beneficial to a country by promoting economic growth and being a key driver in making the business sector more environmentally sustainable (York &

Venkataraman 2010:449). Although measures have been developed to determine entrepreneurial intent, no known measure has been developed to determine ecopreneurial intent because these studies are still sparse, particularly in developing countries such as South Africa (Abina, Oyeniran & Onikosi-Alliyu 2015:108). In an attempt to determine Generation Y male and female students' intentions to become ecopreneurs, several variables were thus reviewed based on the available literature, revealing that a combination of entrepreneurial intent and environmentally related aspects could be employed to achieve the study's main objective.

In a previous study, De Jager (2009:56) found environmental concern had a definite effect towards consumer intentions when purchasing environmentally friendly products. Similarly, Bhuian and Sharma (2017:352) conclude that environmental concern is one of the greatest predictors of pro-environmental behaviour intention. It is thus beneficial for this study to include the factor of environmental concern to determine ecopreneurial intention as it is considered one of the main drivers of ecopreneurs (Schuyler 1998:3). Similarly, authors such as Li, Li, Jin and Wang (2019:13), Panackal *et al.* (2016:1322), Latif, Omar, Bidin and Awang (2013:873), Fielding, McDonald and Louis (2008:319) as well as Mostafa (2007:449) agree that there is a positive correlation between environmental knowledge and pro-environmental behaviour. In other words, the higher the levels of environmental knowledge a person possesses, the more likely they are to engage or behave in a pro-environmental manner. Lee (2008:577) suggests that variables such as current green purchasing behaviour and the perceived effectiveness of environmental behaviour can have an impact on pro-environmental behaviour intention. In prior studies, Pan, Chou, Morrison, Huang and Lin (2018) uncovered that pro-environmental intentions amongst university students in South Africa were moderately high, whilst Thondhlana and Hlatshwayo (2018:6) report that the findings pertaining to pro-environmental behaviour amongst university students were highly diverse in nature and a great number of students did not always act in a pro-environmental manner.

According to the theory of planned behaviour (TPB), variables including personal attitude, subjective norm and perceived behavioural control are determinants of intention, which in turn is believed to be the greatest predictor of future behaviour (Fielding *et al.* 2008:319; Li *et al.* 2019:4). The TPB is not only a good stand-alone model for measuring intentions, but also permits the inclusion of other independent factors into its theoretical framework (Hamilton 2015:58). This study thus combines factors from the TPB with environmental concern, environmental knowledge and current pro-environmental aspects to measure ecopreneurial intent amongst Generation Y university students in South Africa.

Existing literature unearths great disagreement amongst academics regarding the time frame within which members of the Generation Y cohort were born. This is because some academics divide generational cohorts according to factors relating to historical events, either globally or locally (Lundin 2019), whilst others such as Markert (2004:21) divide generational cohorts into 20-year increments. For the purposes of this study, Generation Y members are, in accordance with Bevan-Dye (2016:4) and Markert (2004:21), defined as those born between the years 1986 and 2005. As the main focus of the study is university students, Generation Y participants are likely to fall between the ages of 19 and 33.

There are numerous reasons why Generation Y students are a source of great interest to this study. Within the global context, they are the first generation to have grown up with technology and the internet being readily available and accessible, allowing them to constantly interact with others and the world around them (Bevan-Dye 2016:13; Severo, Guimarães, Brito & Dellarmelin 2017:93) they are said to be the largest generation to date (Kruger & Saayman 2015:366; Lundin 2019:1) as well as one of the most globally aware, racially diverse generations in history (Lower 2008:80; Nowak, Thach & Olsen 2006:317), and they are highly involved in environmental activism and global strike movements against climate change (Parker 2019; United Nations 2019).

Within the South African context, the Generation Y cohort is the largest generation in the country (Statistics South Africa 2018:10); they find themselves in a position of great influence as the most educated and technologically inclined generation to date (Eisner 2005:4; Fry 2020:1; Nowak *et al.* 2006:316). Prior studies have found that Generation Y students display high levels of environmental concern, as well as significant levels of entrepreneurial intention within the South African context (Iwu *et al.* 2016:177; Malebane & Swanepoel 2015:89; Marire 2015:59). One study in particular, reported that university students had positive intentions towards ecopreneurship (Abina *et al.* 2015:107). Taking all of this into consideration, Generation Y students were thus ideal candidates for this study.

Since becoming a democratic society, South Africa has come a long way as it pertains to constitutionalising gender and racial equality (United Nations Development Plan 2020). That being said, the country still has a long way to go in practically achieving gender equality, especially with regards to entrepreneurship (Meyer 2018:104). A review of literature reveals that gender differences often exist in entrepreneurial intention and activity (Farrington, Louw & Venter 2012:42). Though some studies report that gender has no substantial impact on entrepreneurial intent (Soetanto, Pribadi & Widyadana 2010:24; Watson 2002:91), others found that males generally have higher intentions to start a business than females

(Langowitz & Minniti 2007:341; Tran & Tran 2018:10; Veciana *et al.* 2005:180). Gender differences also exist when measuring environmental aspects; however, in this regard females are more likely to display higher levels of environmental awareness and behaviour (Vicente-Molina *et al.* 2018:89; Wallhagen *et al.* 2018:11). In their executive summary of the *Future of Jobs Report*, the WEF convey that several of the key transformational drivers affecting industries as of late, have the innate capability to minimise gender differences and gaps that are still prevalent within industries (WEF 2016). It will thus be interesting to note whether or not a gender difference exists regarding ecopreneurial intentions.

3. METHODOLOGY

3.1 Sampling procedure

The target population for the study included male and female students, between the ages of 18 and 33, enrolled in a higher education institution (HEI) in South Africa. The sample frame comprised of 26 registered public South African HEIs, which was further narrowed down to include only three (3) HEI's. Of the three (3), one (1) was a traditional university, the second a comprehensive university and the third a technical university. A combination of two (2) non-probability sampling techniques were utilised to select population units for the sample, namely convenience and judgement sampling. The convenience method entailed intercepting and selecting sample units that are opportunistically accessible in high-traffic areas, which in terms of this study, means drawing a sample from students conveniently accessible in proximity to university campuses (Burns & Bush 2014:243). The judgement sampling technique was also employed by only drawing a sample of Generation Y students. Primary data was collected via self-administered structured questionnaires, which was distributed to a total of 600 students across the three university campuses. The questionnaire included a cover letter that explained the purpose of the study and assured anonymity of participants. Participation in this study was done purely on a voluntary basis and students could opt out of the study at any point with no consequences.

3.2 Data collection instrument

Following the cover letter, the questionnaire comprised of three (3) distinct sections. Section A aimed to collect demographic information from participants with regards to their field of study, level of study, gender, home language and current age. Section B comprised of items from four (4) previously validated scales to measure participants' environmental concern (four (4) items); environmental behaviour (four (4) items); perceived effectiveness of pro-environmental behaviour (four (4) items) adapted from Lee (2008); as well as perceived

environmental knowledge (four (4) items) adapted from Mostafa (2007). Section C included items from another four previously validated scales to measure participants' attitude towards ecopreneurship (five (5) items); perceived behavioural control (six (6) items); intention towards ecopreneurship (six (6) items) adapted from Liñán and Chen (2009); and subjective norm (three (3) items) adapted from Fielding *et al.* (2008). A 5-point Likert scale, ranging from strongly disagree (1) to strongly agree (6), was utilised to measure participants' responses to the items in Sections A and B. See the questionnaire attached at the end of the article.

4. RESULTS AND DISCUSSION

Of the 600 questionnaires distributed and returned, 520 were deemed viable for the final data analysis (87% response rate) after discarding those not meeting the requirements of the study (not passing the screening question, not within the Generation Y age range or with incomplete responses). The captured data was then analysed using SPSS (Statistical Package for Social Sciences) version 26.0. The sample of participants consisted of university students ranging between the ages of 18 and 33 years, the majority of which were under the age of 25 years (93%). In terms of gender, the sample consisted of females (51%) and males (46%). The majority of participants were obtaining an undergraduate degree (91%) at their university and the majority of the sample was enrolled for a degree in economics and management sciences (44%) or computer sciences (17%). Most participants indicated that they primarily speak English (21%), Afrikaans (20%) or Sesotho (11%).

4.1 Data reliability

Table 1 shows the eight constructs (environmental concern, environmental knowledge, environmental behaviour, perceived effectiveness of environmental behaviour, attitude towards ecopreneurship, subjective norm, perceived behavioural control and intention towards ecopreneurship). These constructs were identified through exploratory factor analysis where the factor loadings of items were all above the recommended 0.50 cut-off mark, except for item B4 from the environmental concern construct (Strydom 2020:69). Upon further investigation it was determined that the item could be deleted without changing the intended purpose of the construct. The environmental concern construct, now only constituted items B1-B3 and item B4 was not included in further data analysis. To measure the internal-consistency reliability of the measurement instrument, the Cronbach Alpha statistic was utilised. Cronbach Alpha values range from 0 to 1 (Malhotra 2010:319). A Cronbach Alpha value between 0 and 0.6 is indicative of low internal consistency between the items of a construct, whilst a value of between 0.6 and 0.7 is acceptable, a value

between 0.7 and 0.8 is indicative of good internal consistency and a value between 0.8 and 1 is excellent (Pallant 2010:183). Table 1 depicts the results of the standardised Cronbach Alpha value analysis.

Table 1: Reliability results

Items	Construct Name	Number of items	Cronbach Alpha
B1-B3	Environmental concern	3	0.740
B5-B8	Environmental knowledge	4	0.756
B9-B12	Environmental behaviour	4	0.847
B13-*RB16	Perceived effectiveness of environmental behaviour	4	0.532
C1-C5	Attitude towards ecopreneurship	5	0.869
C6-C8	Subjective Norm	3	0.763
C9-C14	Perceived behavioural control	6	0.907
C15-C20	Intention towards ecopreneurship	6	0.939
R = reverse scored			

Source: Author's compilation from analysis

The lowest Cronbach Alpha value (0.532) was recorded for the perceived effectiveness of environmental behaviour construct (B13-RB16). This is much lower than the value (0.710) recorded for this construct by Lee (2008:579). It should be noted that items RB15 and RB16 were reverse scored as the original questions were asked in the negative form. The item-to-total correlation value of construct B13-RB16 was 0.304, which is too low to consider including this construct in the main study results. Upon inspection, it was also determined that the deletion of certain items in the construct failed to improve the overall internal-consistency reliability of the construct. The construct was subsequently excluded from further data analysis in this study. All other constructs yielded satisfactory Cronbach Alpha values. The highest of the values, belongs to the intention towards ecopreneurship construct (0.939), which is comparable to the intention towards entrepreneurship construct from which it was adapted (0.943) (Liñán & Chen 2009:604). Compared to their original sources, all the constructs in this study had lower Cronbach Alpha values, besides the environmental behaviour and the perceived behavioural control constructs. The environmental behaviour construct in Lee's (2008:579) study, had a value of 0.7, whereas for this study it was 0.847

and the perceived behavioural control construct in the study by Liñán and Chen (2009:604) had a value of 0.885, whereas this study reported a value of 0.907.

4.2 Descriptive analysis

After asserting the internal-consistency reliability of the scales, descriptive statistics were computed. The anticipated mean value threshold was set at 3.00 owing to the use of a six-point Likert scale. All mean values lower than 3.00 (Mean=3.00), thus indicated negative attitudes towards constructs, and values higher than 3.00 (Mean=3.00) indicated positive attitudes towards constructs. The higher the mean value, the higher the participants' level of agreement with the construct and vice versa. Table 2 summarises the results of the descriptive analysis.

Table 2: Descriptive statistics construct summary

Items	Construct name	Number of items	Mean statistic	Standard deviation	Skewness	Kurtosis
B1-B3	Environmental concern	4	4.36	0.96	-0.63	0.44
B5-B8	Environmental knowledge	4	4.03	0.95	-0.29	-0.14
B9-B12	Environmental behaviour	4	3.53	1.17	-0.24	-0.45
C1-C5	Attitude towards ecopreneurship	5	3.95	1.12	-0.38	-0.29
C6-C8	Subjective Norm	3	3.97	1.06	-0.38	0.12
C9-C14	Perceived behavioural control	6	3.34	1.16	-0.03	-0.47
C15-C20	Intention towards ecopreneurship	6	3.30	1.32	-0.05	-0.88

Source: Author's compilation from analysis

From Table 2 it is noted that the skewness and kurtosis values of all constructs fell between the recommended range of -2 and +2 and therefore did not warrant any cause for concern (Berndt & Petzer 2011). All constructs yielded mean values higher than 3.00, indicating that participants have a positive attitude towards all constructs; however, the extent to which participants agreed differed. The highest means were recorded for the environmental concern (Mean=4.36) and environmental knowledge constructs (Mean=4.03), whilst the two lowest mean values were captured for perceived behavioural control (Mean=3.34) and

intention towards ecopreneurship (Mean=3.30). As all of the recorded means are positive, it is thus apparent that Generation Y students' concern for and knowledge regarding the environment is high relative to the other constructs and their perceived behavioural control and intention towards ecopreneurship is relatively low when compared to the other constructs and are only slightly higher than the threshold value (Mean=3.00). Generation Y students are thus concerned with the environment, display high levels of environmental knowledge and display pro-environmental behaviour, although their pro-environmental behaviour appears to be the lowest of the three.

Generation Y students also appear to have a positive attitude towards ecopreneurship, consider ecopreneurship as a subjective norm, and display perceived behavioural control and a positive intention towards becoming ecopreneurs. Generation Y students are, however, less positive about their perceived behavioural control and intention towards ecopreneurship than they are about the other constructs mentioned. These findings support those of Ntanos, Kyriakopoulos, Chalikias, Arabatzis and Skordoulis (2018:14) as well as Williams (2017), who found Generation Y students have high levels of environmental concern and knowledge. Thondhlana and Hlatshwayo (2018:6) also, found that a great number of South African university students do not necessarily act in a pro-environmental manner. In terms of standard deviation, the highest value was recorded for the intention towards ecopreneurship construct, indicating that responses were spread out from the mean. Inversely, the lowest value was recorded for the environmental knowledge construct meaning that responses were closer to and less spread out from the mean.

4.3 Independent samples t-test

The t-test is a widely used statistical test that researchers employ when comparing the means of two groups (Kim 2015:540). Gender has long been a prevalent factor influencing entrepreneurial intention (Farrington *et al.* 2012; Meyer 2018). To determine if any differences would emerge between Generation Y male and female students' intentions to become ecopreneurs, an independent sample-t-test was conducted. The results thereof are summarised in Table 3.

Table 3: Independent samples t-test

	Male		Female				
Constructs	Mean N=241	Std. Dev.	Mean N=263	Std. Dev.	t-value	p-value	Cohen's D
Environmental concern	4.240	1.053	4.469	0.861	-2.648	0.008*	0.238**
	Male	Female					Male
Constructs	Mean N=241	Std. Dev.	Mean N=263	Std. Dev.	t-value	Constructs	Mean N=241
Environmental knowledge	4.000	0.978	4.037	0.919	-0.439	0.171	***
Environmental behaviour	3.438	1.181	3.591	1.138	-1.488	0.610	***
Attitude towards ecopreneurship	3.832	1.170	4.048	1.067	-2.157	0.107	***
Subjective norm	3.941	1.088	3.989	1.038	-0.500	0.480	***
Perceived behavioural control	3.364	1.177	3.270	1.134	0.909	0.651	***
Intention towards ecopreneurship	3.217	1.334	3.353	1.304	-1.158	0.586	***
* Significance level 0.05							
** Small effect, practically non-significant							
*** Cohen's D-statistic not calculated as the variable was not statistically significant							

Source: Author's compilation from analysis

As can be seen in Table 3, for the construct of environmental concern, the recorded mean for females (Mean=4.469) was higher than that for males (Mean=4.240), with a p-value=0.008<0.05.

This, in agreement with Vicente-Molina *et al.* (2018:89) and Wallhagen *et al.* (2018:11), indicates that there is a statistical difference between male and female students' level of environmental concern. The Cohen's D-statistic was calculated to determine the degree to which the difference is practically significant or not (Brace, Kemp & Snelgar 2012:11). As the value of 0.238 is less than 0.50, it implies that the effect size of the difference is practically

non-significant (Pallant 2010:210). Female Generation Y students therefore only display slightly higher concern for the environment than their male counterparts.

For each of the other constructs, including environmental knowledge, environmental behaviour, attitude towards ecopreneurship, subjective norm, perceived behavioural control and intention towards ecopreneurship, there were no statistically significant differences ($p < 0.05$) between male and female students. These findings are in accordance with studies by Soetanto *et al.* (2010:24) as well as Watson (2002:91), which indicate that no differences were found between the two genders. Recent studies have indicated that males are still perceived to display higher levels of intention towards becoming entrepreneurs (Meyer 2018:4; Tran & Tran 2018:10). However, that is not necessarily the case for ecopreneurship, at least not amongst Generation Y students in South Africa.

This could partly be because most members from the Generation Y cohort (both male and female) generally perceive themselves to be more environmentally concerned than previous generations (Williams 2017; Coughlin 2017). Generation Y individuals were brought up in an environmentally conscious society, are one of the most educated generations to date and perceive themselves to be knowledgeable over environmental matters (Fry 2020; Huh & Chang 2017:127; Synodinos 2019:525). This could, to some extent, explain why the gender gap in terms of ecopreneurial intention amongst Generation Y students is smaller than that of traditional entrepreneurial intent as both genders within this cohort have a similar environmental education background. Another reason could be the increasing shift towards non-traditional gender expression as well as the move away from traditional gender roles and stereotypes amongst young people (Green & McClelland 2019:6).

5. CONCLUSION

The main objective of this study was to determine Generation Y students' intentions towards becoming ecopreneurs within the context of South Africa and if any differences exist between male and female students. According to the results from this study's sample, Generation Y university students in South Africa display positive intentions towards becoming ecopreneurs, albeit their intentions are seemingly much lower than their perceived environmental concern. Furthermore, the male and female students from this study sample displayed relatively similar perceptions on their intention towards becoming ecopreneurs. Female students recorded a higher mean value than their male counterparts for environmental concern; however, the difference was small and practically non-significant. Regarding all other constructs namely environmental knowledge, environmental behaviour, attitude towards ecopreneurship, subjective norm, perceived behavioural control and

intention towards ecopreneurship, no statistical differences between the two genders were noted. Though perceived gender differences might still exist with regards to wider entrepreneurial intention, there are relatively no gender differences regarding ecopreneurial intention amongst Generation Y students in South Africa in accordance to the results of this study. Coinciding results were also found in studies such as that of Ntanos *et al.* (2018), Thondhlana and Hlatshwayo (2018), Vicente-Molina *et al.* (2018), Wallhagen *et al.* (2018), Williams (2017), Soetanto *et al.* (2010) as well as Watson (2002).

As is the case with most studies, this study is not without its limitations. Although attempts were made to ensure representativeness of the sample through a variety of demographic questions, sampling bias can still occur to some extent when generalising convenience sampling results to the population. The results of this study specifically contribute to the literature within a South African context; however, the results could also be used for cross-cultural or international type studies. Taking into account the literature reviewed as well as the study results, it is recommended that more should be done to emphasise the importance of ecopreneurship as a solution to environmental issues and to add more ecopreneurial literature into entrepreneurship education curricula. Given that this study found no gender differences between male and female students' ecopreneurial intentions, business incubators, as well as entrepreneurship programmes in South African universities should place equal focus on identifying and supporting male and female ecopreneurs.

Possible future research on this topic could include broadening the sample to include more universities, conducting a qualitative study to gain more insight on what contributes to a lower gender difference gap and conducting a cross-country comparison. Further research could also be done on the intentions of existing businesses to reduce business activities that are possible harmful to the environment and to become eco-friendlier as well as exploring the possible barriers faced by and incentives available to ecopreneurs in South Africa.

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APPENDIX A: QUESTIONNAIRE

Section B: Environmental Concern & Behaviour	
B1	I am worried about the worsening quality of the environment.
B2	The state of the environment is one of my main concerns.
B3	I am emotionally involved in environmental protection issues.
B4	I often think about how the environmental quality can be improved.
B5	I know more about recycling than the average person.
B6	I know how to select products and packages that reduce the amount of waste ending up in rubbish dumps.
B7	I understand the environmental phrases and symbols on product packages.
B8	I know a lot about environmental issues.
B9	When I want to buy a product, I look at the ingredients label to see if it contains things that are environmentally-damaging.
B10	I prefer environmentally-friendly products over normal products when their product qualities are similar.
B11	I choose to buy products that are environmentally-friendly.
B12	I buy green products even if they are more expensive than the non-green ones.
B13	I think if I carry out some environmentally-friendly behaviours in my everyday life, I would contribute a lot to our environment.
B14	I think my participation in environmental protection would influence my family and friends to participate too.
B15	The quality of the environment will stay the same even if I engage in some environmentally-friendly behaviours.
B16	Even if I recycle and reuse things, the quality of the environment will remain as it currently is.
Section C: Intention towards ecopreneurship	
C1	Being an ecopreneur implies more advantages than disadvantages to me.
C2	A career as an ecopreneur is attractive for me.
C3	If I had the opportunity and resources, I'd like to start a green business.
C4	Being an ecopreneur would entail great satisfaction for me.
C5	Among various options, I would rather be an ecopreneur.
C6	People who are important to me behave in an environmentally friendly way.
C7	People who are important to me would approve of me behaving in an environmentally friendly way.
C8	People who are important to me encourage me to behave in an environmentally friendly way.
C9	To start a green business and keep it working would be easy for me.
C10	I am prepared to start a viable green business.
C11	I can control the creation process of a new green business.
C12	I know the necessary practical details to start a green business.
C13	I know how to develop an eco-entrepreneurial project.
C14	If I tried to start a green business, I would have a high probability of succeeding.
C15	I am ready to do anything to be an ecopreneur.
C16	My professional goal is to become an ecopreneur.
C17	I will make every effort to start and run my own green business.
C18	I am determined to create a green business in the future.
C19	I have very serious thoughts of starting a green business.
C20	I have the firm intention to start a green business someday.