An Investigation into the Relationship Between Reproductive Motivation and Pro-environmental Actions and Values in Generation Y

Julia Silva

MSc in Management

National College of Ireland

Submitted to the National College of Ireland, August 2020

Abstract

Title of thesis: An investigation into the relationship between reproductive motivation and pro-environmental actions and values in Generation Y

Author: Julia Silva

Although sustainability has been increasingly the focus of discussions, the journey towards a pro-environmental world is difficult and contains many barriers due to current economic systems that lead to unsustainable consumerism patterns. Generation Y, also known as millennials, has been more concerned about environmental issues and the future of the planet if compared with other generations. However, the same highly concerned individuals do not behave according to their beliefs, which is defined as the "value-action gap". As this generation has a significant contribution to the economy, understanding the millennials, what shapes their needs and desires are key factors for multinational corporations. The prime aim of this paper was to investigate whether reproductive motivation is an important aspect that drives Generation Y's environmental concern and attitude towards green purchasing behaviour. The researcher also examined the value-action gap by attempting to replicate the findings of previous research in order to analyse whether the individuals' behaviour is influenced by their environmental beliefs. To complete this project, the author conducted a quantitative research by opting for a questionnaire to collect data from 131 respondents. The sample was composed of millennials from several Western and Latin American countries. While the results indicate that reproductive motivation has no significant or positive influence on pro-environmental beliefs and behaviour among Generation Y consumers, it was possible to identify that environmental values have the ability to affect an individual's action towards more sustainable consumption patterns. The broader implications of this research highlight the fact that future studies and companies should focus on the reproductive motivation appeal as it could be a potential key point to convert Generation Y consumers towards pro-environmental buying choices.

Declaration

Submission of Thesis and Dissertation

National College of Ireland
Research Students Declaration Form
(Thesis/Author Declaration Form)

Name: Julia Silva

Student Number: 18125875

Degree for which thesis is submitted: MSc in Management

Title of Thesis: An investigation into the relationship between reproductive motivation and pro-environmental actions and values in Generation Y

Date: 16/08/2020

Material submitted for award

A. I declare that this work submitted has been composed by myself. ☐

B. I declare that all verbatim extracts contained in the thesis have been distinguished by quotation marks and the sources of information specifically acknowledged. ☐

C. I agree to my thesis being deposited in the NCI Library online open access repository NORMA. ☐

D. ***Either*** *I declare that no material contained in the thesis has been used in any other submission for an academic award.
Or *I declare that the following material contained in the thesis formed part of a submission for the award of

☐

Acknowledgements

Writing this dissertation was an incredible challenge. When I look back over my shoulder, I am extremely thankful to see that many important and special people have always supported me throughout the entire Master's process, and I know this was the most essential part of this journey.

I would like to deeply thank my academic supervisor, Dr. Ger Loughnane, for his meaningful assistance, continuous motivation, good advice and patience. This thesis would not have been possible without his help and guidance. Thank you very much!

A heartfelt thank you goes to my family in Brazil for their love, specially to my parents, brothers - Eduardo, Arthur and Lucas - and grandparents - Eliseu, Bernadete, Ruth and Odilon. I also would like to thank my closest friends, Bruno and Luiza, for their online encouragement. I miss you all!

A huge thank you to my second family in Ireland, Gisele and Denis, for their constant care, affection and inspiration. I am also extremely thankful for the best people I met in college, Valentina, Ahmed and Keila. Thank you for your true friendship that made these two years even more special and for the motivation during my many 'crisis' moments.

Finally, I would like to dedicate this thesis to my parents, Elisabete de Souza and Marcos André Pontes da Silva, the most important people of my life. Without their love, support, and encouragement I would not be where I am today. They are my lighthouse, and even when I am far from them, I am still very close because love does not recognise distance. They are and will always be my number one.

List of Figures

List of Tables

Table of Contents

Chapter I: Introduction

1.1 Background

Over the past years, the number of environmental problems, such as climate change and waste pollution, has increased and one of the main causes is related to unsustainable consumption patterns. Therefore, concern about the environment and consequently the harmful outcomes of human activity has also increased (Kim and Choi, 2005; Knight and Messer, 2012; Mainieri et al., 1997; Mostafa, 2007; White and Hunter, 2009; Zhou, 2013).

The way in which goods and services are chosen by individuals has an impact on the environment and social well-being (Gruber and Schlegelmilch, 2014). Therefore, consumers are becoming more aware about their purchasing decisions (Laroche et al, 2001) which are reflected in the gradual transformation of conventional lifestyle (Lai and Cheng, 2015). It is considered that environmental concern is shaping attitudes and preferences of individuals and this results in a willingness to act more sustainably (Sarigollu, 2009).

In summary, people are increasingly changing their buying behaviour towards sustainable and ethical alternatives in an attempt to mitigate social and ecological problems. Nevertheless, there is a considerable value-action gap related to pro-environmental consumption behaviour (Pickett-Baker and Ozaki, 2008). Over the decades, this well-known term (i.e. value-action gap) has been studied by many researchers aiming to explain the difference between higher levels of preference for sustainable products or services, versus lower levels of actual purchasing attitudes (Bedard and Tolmie, 2018).

Research has indicated that knowledge and concern about ecological problems are increasing but does not guarantee that it will be reflected in actual attitudes (Dunlap and Mertig, 1995; Dunlap, Van Liere, Merig and Jones, 2000; Kaplan, 2000; Ali, Khan and Ahmed, 2011). Although consumers are more conscious about the impact of human actions on ecosystems, there is still an inconsistent

relationship between the perception of what they should do and what they actually do.

Many researchers have tried to understand what the variables are, such as the demographic factors, motivators and barriers that influence the belief-behaviour levels (Tatić and Činjarević, 2010). However, there is no evidence in previous literature of an attempt to study whether reproductive motivation is a variable that affects the value-action relationship.

In this study, the author defined the 'reproductive motivation' aspect as the desire of having children. This element is measured by the total number of children an individual would like to have, which indicates the level of reproductive motivation. It starts from the premise that, in theory, people would think about their children and act accordingly to preserve their future (Thomas et al., 2018). For instance, is has been suggested that mothers are more willing to engage in sustainable practices (Pickett-Baker and Ozaki, 2008).

The discussion about this topic is important because, to gain a sustainable competitive advantage, companies need specific market knowledge to be innovative and target their products or services accordingly. Furthermore, Driessen (2005) suggests that it should be done by capturing not only the niche green (i.e. sustainable) market. Due to this fact, it is important to investigate further the characteristics and consumption patterns of the group of people who constitute the Generation Y because of their significant effect on multinational organisations.

Generation Y (those born between 1980 and 2000), also termed Millennials or Echo Boomers, is considered as the largest global generation that, because of its age range, provides a significant portion of economic activity in the world (Gapper, 2018). Due to its powerful market size, decision makers must understand what drives this segment when developing and implementing their business and marketing strategies because of the lucrative opportunities it generates.

Green purchasing behaviour is an effective solution for lessening impacts and preventing further environmental and social damage (Ho, Dickinson and Chan, 2010). Therefore, research that investigates whether reproductive motivation is a variable that influences Generation Y consumers towards more consistent green purchasing behaviour is valuable.

In summary, this research will provide an answer to *"Is reproductive motivation a factor that influences pro-environmental action and values among Generation Y consumers?"*. It will also investigate the value-action gap by attempting to replicate the findings of previous research in order to analyse if the millennials attitudes are influenced by their environmental values.

This study is important, as it will provide a better understanding of Generation Y. It enables companies to target and place products based on consumers particularities. Practical implications will be suggested because an accurate prediction of consumer attitudes is essential in a corporate context. To develop an effective marketing strategy, it is necessary to have a holistic view of which factors have the potential to influence consumer purchasing behaviour (Cherian and Jacob, 2012).

1.2 Structure of the study

This study is divided into seven chapters. A brief explanation of each chapter follows:

- Chapter I: Offers a background of the study and examines the importance of the subject.

- Chapter II: Includes the review of the literature and contains relevant previous research that discusses the main topics and key concepts addressed in this study to support the suggested hypotheses.

- Chapter III: Specifies the aims and objectives of the research. This leads to the research question and the hypotheses suggested by the author.

- Chapter IV: Presents an in-depth explanation about the methodology and procedures that were adopted to guide this study to answer the proposed research question. Additionally, the sample size and its characteristics, research instrument, and the data collection are included in this chapter.

- Chapter V: Demonstrates the data collected (primary data collection) and investigates the author's in the study.

- Chapter VI: Combines the author's findings and the previous studies that were reviewed to answer the research question. This chapter also addresses the research limitations and practical considerations.

- Chapter VII: Concludes the study and provides recommendations for future research based on the findings and limitations.

Chapter II: Literature Review

2.1 Introduction

This review of the literature is a summary of the most significant subjects and key theories for this paper that have been previously presented and discussed by other researchers.

In summary, several previous studies and journal articles have guided the author in the investigation of this research. To have an overview and better understanding of the subject, the review of the literature is structured and analysed under the following key themes:

- Environmental concern and attitude: the value-action gap
- Marketing and sustainable consumption
- Green purchasing behaviour and Generation Y
- Aspects that influence consumption behaviour
- Reproductive motivation and the legacy hypothesis

2.2 Rationale

2.2.1 Environmental concern and attitude: the value-action gap

Many authors suggest that environmental concerns have increased since 1970 (Kilbourne and Pickett, 2008). Therefore, researchers have been allocating more effort to study and to have an in-depth understanding about this topic (Bamberg, 2003). Although environmental concern has been growing significantly, individuals' attitudes do not follow the same course. Lu et al. (2013) suggests that the consumption of pro-environmental products has only been a trend only since the 1990s.

To have an in-depth discussion about the pro-environmental value-action gap, it is important to first clarify the key concepts that constitute this topic. For instance,

attitude can be defined as the “predisposition of the individual to evaluate some symbol or object or aspect of his world in a favourable or unfavourable manner” (Katz, 1960). Later, Cherry (2020) explained that attitude is the result of components, such as emotions and beliefs that have a potent influence over behaviour. In addition, Chaiklin (2011) suggests that individual behaviour and attitude are not always aligned. However, for the purpose of this study, the author considered the scenario in which behaviour and attitude are aligned.

Another important aspect that is linked with attitude is environmental concern. This element has different definitions that have been adjusted over the years. According to Crosby et al. (1981) this concept is explained as an intense and careful attitude that aims to protect the environment. A few years later, Gill et al. (1986) specified that it is a broad attitude that has an indirect impact on behavioural intent.

Prior studies suggest that environmental concern is directly related to environmental attitude (Kim and Choi, 2005). Dunlap and Jones (2002) and Chan and Lau (2004) explain that consciousness about environmental issues is reflected in an individual effort to solve or mitigate ecological problems. In other words, the knowledge about possible ecological problems would lead to pro-environmental attitudes because people would try to engage in sustainable practices to solve or minimise the issues.

Nevertheless, a large body of research points out a weak linkage between environmental concern and the actual willingness to purchase pro-environmental products (Winski, 1991; Mainieri et al., 1997; Bamberg, 2003; Mostafa, 2007). Kilbourne and Pickett (2008) state that environmental concern is an aspect that has been increasing over the years but difference between behaviour and beliefs is noticeable. Therefore, pro-environmental concern is not a significant driver in order to influencing the purchasing behaviour (Pickett-Baker and Ozaki, 2008) and companies generally refer to this discrepancy as the value-action gap (Darnton, 2004).

From a theoretical standpoint, personal variables (e.g. awareness, attitudes and motivation) and also situational variables (e.g. more attractive and convenient product options, economic circumstances and social rules) are aspects that perform an important role in the value-action gap (Mainieri et al., 1997). Therefore, a wide range of elements have an influence on pro-environmental attitude.

2.2.2 Marketing and sustainable consumption

Organisations play an important role in relation to ecological and social issues. Due to their extensive responsibility, Boztepe (2012) suggets that transformational changes must be adopted, such as implementing strategies that aim to protect the ecosystem and not only the profitability. In essence, the demand for strategies that avoid unacceptable short-term behaviour (e.g. environmental or social damage) which in turn, is essential to secure long-term economic performance (Porter and Kramer, 2006).

Marketing has the power to manage and influence the processes of consumption. Its main function is to provide benefits to consumers that also fulfil the needs of companies (Fuller, 1999). Marketing does not usually take into account the impacts and side effects of production because it influences unsustainable demand and consumption (Martin and Schouten, 2014).

Along with the demographic expansion, the immoderate consumption can be considered as the world's major threats (Wedewer, 2011). Marketing influences the maximum consumption as the economic structure aims to function at the maximum degree of efficiency by means of take-make-waste model (Martin and Schouten, 2014).

In summary, marketing principles can stimulate and lead to unsustainable levels of production consumption. However, it can be also used as a mechanism that attempts to support environmental and social issues in the reduction of the impacts of the production system. According to Martin and Schouten (2014), it

can and must be used as a part of solution. Moreover, robust marketing strategies have the power to change consumers' beliefs and attitudes Jisana (2014).

Green marketing is related to a more sustainable consumption because it seeks to place environmental issues and concerns to mitigate the impacts of production in order to achieve sustainable development. It can be defined as: "The marketing of products which are considered not to be harmful for the environment. Various terms like eco-friendly, recyclable, ozone-friendly are often associated with green marketing.'' Kaur (2014).

However, previous researchers have suggested broader definitions. "Green marketing consists of all activities designed to generate and facilitate any exchanges intended to satisfy human needs or wants, such that the satisfaction of these needs and wants occurs, with minimal detrimental impact on the natural environment.'' (Polonsky, 1994).

In summary, green marketing not only refers to the final product but also to a broader range of activities. Product alteration, adjustment to the manufacturing processes, sustainable packaging development and correct communication are aspects that must be incorporated in a green marketing strategy (Polonsky, 1994).

Indeed, green marketing is a dominant trend in competitive corporations (Lu, Bock and Joseph, 2013). Sustainable practices within the marketing context support a win-win situation, as they mitigate impacts on the ecosystem and, as Martin and Schouten (2014) suggest, they enhance organisations' competitive advantage overtime. Therefore, the implementation of a green marketing approach might influence Generation Y consumers and decrease the pro-environmental value-action gap.

2.2.3 Green purchasing behaviour and Generation Y

After further investigation about the green marketing concept, it is necessary to understand how this marketing approach is associated with pro-environmental purchasing behaviour and, more specifically, among Generation Y consumers.

Green purchasing behaviour has various but not controversial definitions. It can be interpreted as the act of buying goods that do not cause harm to or deterioration of the environment and any living organism during the entire product lifecycle (Elkington, 1994). According to Mostafa (2007) and Lee (2009), this behaviour refers to the consumption of goods that are recyclable, benevolent to ecosystems, and sensitive to environmental issues.

It has been found that a strong motivator that influences pro-environmental consumption habits is when individuals consider changing their buying behaviour because they feel that, as consumers, they also play a part to support and protect the environment (Webster, 1975). In other words, people are more likely to change their behaviour once they believe they play an important role and have responsibility towards environmental protection as well as governments, businesses and scientists (Boztepe, 2012).

Interestingly, some studies support an opposite idea based on the people's belief that their actions do not make a difference in solving the ecological problem. Ellen, Wiener and Cobb-Walgren (1991) suggest the perceived consumer effectiveness (PCE) and indicate that if an individual has low levels of PCE, it will lead to a low level of self-involvement in relation to ecological protection. The authors also argue that this is one of the main reasons that prevent people from getting involved in ecological actions.

Despite this paradox of literature, green consumers tend to be more aware and demanding in relation to other aspects and not only those involving sustainable products. In other words, pro-environmental buyers also want and require that organisations engage in sustainable practices, such as energy efficiency (Montague and Mukherjee, 2010).

Additionally, individuals are not likely to buy a product exclusively because of its eco-friendly aspect (Vermillion and Peart, 2010). According to Montague and Mukherjee (2010), at the same time green buyers desire sustainable products they do not want to sacrifice and decrease their lifestyle quality. In summary, studies indicate that convenience, cost, quality, easy access and performance (Ginsberg and Bloom, 2004), as well as safety and health (Vermillion and Peart, 2010) are fundamental attributes that affect the green purchasing behaviour.

Previous research has shown that Generation Y is the most environmentally conscious generation when compared to the other (Vermillion and Peart, 2010). This segment consists of individuals born between 1980 and 2000 (Lloyd et al., 2013). They are classified as diverse, interested in technology and highly educated (Hood, 2012).

For instance, the report by PayScale (2012) shows that a total of 76,1% Gen Y individuals have Bachelor's Degree or Master's Degree. Furthermore, the Council of Economic Advisers (2014), indicates that the millennials constitute the generation that has more university degrees if compared with others. Hence, Meyer (2015) supports the argument based on the notion that high levels of education increase the knowledge and awareness in relation to environmental issues.

As green consumers, they are more tolerant, open-minded and enthusiastic about new products and ideas (Boztepe, 2012). Consequently, they are increasingly concerned about the impact of the products on their health as well as the harmful environmental and social effects (Spehar, 2006).

This generation is remarkable due its purchasing behaviour and habits (Bucic, Harris and Arli, 2012), and its tendency towards the sustainability (Bedard and Tolmie, 2018). Moreover, The Nielsen Company (2015) stated that understanding the purchasing habits of this segment is extremely important, because it is currently, the most prominent global workforce generation.

2.2.4 Aspects that influence consumption behaviour

To develop a strong and convincing marketing and communication strategy, it is necessary to have a deep understanding of the main elements that shape people's wants and needs that is reflected in their purchasing habits (Kotler and Armstrong, 2012). Therefore, this subject has received a constant attention in the literature. Several authors have studied consumption behaviour and developed various theories that focus on different aspects, such as factors that influence attitude and stages that people go through in order to engage in a certain way.

It is known that there are many factors that have the capacity to drive consumption behaviour. Kotler and Armstrong (2012) and Jisana (2014) state that the key aspects that significantly shape the interests and demands of individuals influencing their buying choices are:

- Cultural: This element includes culture, subculture, and social class (hierarchical structure). The cultural factor varies according to distinct countries, regions, religions, and racial groups. The arrangement of social scale also plays an important role in purchasing patterns because it influences individual interest and lifestyle (Jisana, 2014).

- Social: This aspect is related to family, groups, roles, and social status in which an individual is included (Kotler and Armstrong, 2012). More specifically, the groups that have the most influential power are close relatives, friends and neighbours (Hemsley-Brown and Oplatka, 2016) because they influence through word of mouth engagement. This concept is a powerful persuasive force (Dean and Lang, 2008) that can be explained as informal communication between people regarding products, services, brands or organisations (Chan and Ngai, 2011). Additionally, social interaction has the power to influence and encourage the adoption of sustainable attitudes towards pro-environmental aspects (Darnton, 2004 and Jackson, 2005).

- Personal: According to Kotler and Armstrong (2008), this factor incorporates characteristics such as age, occupation, economic scenario, personality, lifestyle and self-concept. For instance, a specific stage of a life-cycle such as a recently married couple or parenthood make people prioritise different aspects, which shapes individual purchasing choices. Jisana (2014) suggests that personality guides the individual behaviour in different scenarios and, therefore, understanding this factor is fundamental in the analysis of specific habits.

- Psychological: Motivation, perception, learning, beliefs and attitudes are the psychological dimensions that affect consumption behaviour (Kotler and Armstrong, 2012). It is extremely important to analyse the motivational factor because it makes people act in a certain way.

  Abraham Maslow (1943) developed one of the most influential theories of human motivation, which explains that the human race is motivated by intrinsic needs. In other words, Maslow's Hierarchy of Needs theory (Figure 1) explains that human behaviour is driven by specific needs that are prioritised in a hierarchical structure where people are motivated to meet the lower level of their needs before start pursuing higher levels (Maslow, 1943).

  This model (Figure 1) indicates that an individual tries to fulfil the most important needs first and only then tries to satisfy the next level. However, it is important to acknowledge that human development is dynamic and the fulfilment of these needs does not necessarily follow a strict order (Hopper, 2020).

Figure 1 - Maslow's hierarchy of needs (Source: McLeod, 2013)

Another important premise that aims to explain the consumption behaviour is the theory of planned behaviour (Figure 2) introduced by Ajzen in 1991.

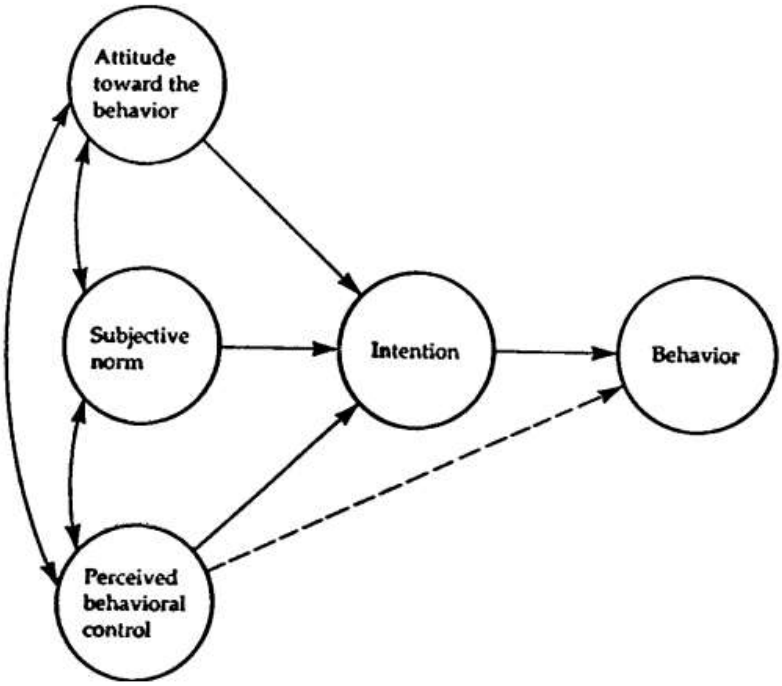

Figure 2 - Theory of planned behaviour (Ajzen, 1991)

This theory suggests that the behaviour of an individual is built from three factors:

- Attitudes: It is a person's beliefs of a certain behaviour that makes a positive or negative contribution to the life of the individual. In simple words, it basically suggests that people take into consideration whether their choices make sense or not.

- Subjective norm: Focus on the influence that comes from individual surroundings such as the social network, cultural norms, group beliefs etc. It can be translated as the judgment of individual choices, which in turn, influences the decisions.

- Perceived behaviour control: The individual perception about the difficulty level that is required to act in a specific form. In other words, it is the perception of how easy or difficult it is to perform some action. Therefore, beliefs about self-efficacy affects the person's choices.

Ajzen (1991) suggests that when there are positive and higher levels of attitudes, subjective norm and perceived behavioural control, they are good predictors for building an individual intention, and the desire to perform a certain action, which in turn is reflected in the actual behaviour.

To summarise, it can be noticed that the understanding of the points previously described and how they combine to induce behaviour, is fundamental to successfully target and place products and services in order to fit different needs and requirements. In order words, presenting not only functional, but also emotional attributes is essential to successfully promote goods and services.

2.2.5 Reproductive motivation and the legacy hypothesis

As discussed above, it is extremely important to understand what aspects can influence consumption patterns. Therefore, to guide this study, the reproductive motivation will be investigated. The author of this present study defined this aspect as the desire of having children and it is measured by how many children

people would like to have, that in turn indicates the level of reproductive motivation of an individual.

It proceeds from the assumption that people would think about their children and act accordingly to preserve their future (Thomas et al., 2018). Erikson (1963), suggests the idea of “belief in the species” is fundamental and it is liked to “the concern in establishing and guiding the next generation” (Erikson 1963, p. 267). In essence, people must believe and have a long-term perspective of human beings and planet in order to properly guide and raise future generations.

Therefore, the reproductive factor is associated with motivation, that in turn, can be explained as the state of mind that includes desires or needs that drives people to behave in a certain way. Ryan and Deci (2000) argue that there are two forces that shape motivation: extrinsic and intrinsic. According to the authors, the extrinsic motivation is when an individual performs an action in order to earn an external reward or refrain from punishment.

In contrast, intrinsic motivation when someone responds with a specific behaviour because of their self-interest, driven by internal rewards and inherent satisfaction. In other words, "intrinsic motivation occurs when we act without any obvious external rewards. We simply enjoy an activity or see it as an opportunity to explore, learn, and actualise our potentials." (Coon and Mitterer, 2010). However, it is necessary these forces may vary according to the context in which an individual is involved.

It is necessary to highlight that previous studies attempted to investigate the effects of parenthood on environmental concern and attitude, testing the legacy hypothesis with longitudinal data. According to Thomas et al. (2018), the legacy hypothesis assumes that procreation would increase the environmental concern since parents would consider the legacy left to their descendants. In essence, they would expect that the world is liveable with sustainable conditions so that their children will exist in a good and safe environment.

This assumption is also associated with other theories. For instance, there are theoretical arguments that attempt to prove that gender plays an important role regarding pro-environmental purchasing behaviour, such as the Parental Roles Hypothesis (Davidson and Freudenburg 1996) and the Parenthood Status Hypothesis (Blocker and Eckberg 1997).

The theory has indicated significant results that support the idea that mothers have greater consideration towards pro-environmental attitudes regarding their buying choices (Pickett-Baker and Ozaki, 2008) and the aspiration to protect the environment is prominent in individuals who focus on long-term situations (Bain et al., 2015; Milfont and Demarque, 2015; Milfont et al. 2012).

Although there is a large range of studies that support the positive correlation between ecological attitude and parenthood, it is necessary to recognise that there are complexities that affect this association (Thomas et al., 2018). For instance, the socio-economic spectrum is related to the family income, employment and educational levels and it has an impact on the consumption factor (Poortinga et al., 2004).

Thomas et al. (2008) argues that economic and health factors are more influential than the fact of having children or the desire to have children (e.g. parenthood or reproductive motivation). Thompson et al. (2011) complements this idea and suggests that individuals' preferences will be more sustainable if the product or service is perceived as a healthier alternative (e.g. organic and non-processed food).

Furthermore, many authors (e.g. Torgler et al., 2008 and McCright, 2010) have found no significant results regarding the study of parental variable and its influence in relation to preferences and the probability of buying green products or services. Interestingly, research conducted by Blocker and Eckberg (1997) shows that people who have children, are less inclined to be preoccupied about the ecological situation.

In summary, the best form to test the legacy hypothesis is through the longitudinal research method (Thomas et al., 2018). Nevertheless, it is necessary to observe that this study aims to investigate Generation Y. Due to this fact, the legacy hypnosis will not be tested and the collected data will not be longitudinal because a large part of Generation Y is still young and has not gone through the birth of a first child (i.e. parenthood stage).

Moving beyond the longitudinal and qualitative analysis, this dissertation focus on the understanding of the same intuitive appeal that analyses this association of concern about the future and environmental preservation from a different perspective and approach. This will be explained in more detail in the Chapter IV.

2.3 Conclusion of the literature

The focus of this chapter was to provide a relevant academic literature background in order to critically evaluate the resources and obtain sufficient knowledge about the main aspects that constitute this dissertation topic, which in turn was necessary to conduct a robust research.

It is essential to take into consideration that the main purpose of this study is to understand whether reproductive motivation is an aspect that drives Generation Y's environmental concern and attitude towards green purchasing behaviour. It also attempts to analyse the value-action gap to address whether pro-environmental behaviour is influenced by environmental beliefs.

Based on the information discussed in this chapter, it is possible to conclude that many studies have attempted to explain the difference between environmental concern and attitude levels, as also the marketing as an important tool to influence Generation Y sustainable consumption by taking into consideration the aspects that shape purchasing behaviour.

Additionally, it is fundamental to understand the legacy hypothesis that suggests the concept that after the first child, parents would be more concerned about the ecological conditions based on the notion that they would aim to protect it in order

to ensure that future generations would live in a safe and healthy environment. Along with this theoretical hypothesis, it was also possible to note that studies have suggested that mothers are more willing to act more sustainably.

While there has been much research on the topics described above, there is no evidence of research that has taken the reproductive motivation into consideration when analysing the pro-environmental beliefs and behaviour of Generation Y. Therefore, comprehending whether the reproductive motivation is an aspect that drives the Generation Y values and action, is essential since it enables companies to target and place products based on consumers particularities. It is important to have a better understanding about the elements that could possibly motivate and shape the values and actions of this generation within the sustainability context.

Chapter III: Research Question

3.1 Research aim

The overall aim of this research is to investigate the importance of reproductive motivation (i.e. the number of children an individual would like to have) in Generation Y's environmental concern and attitude towards green purchasing behaviour. In other words, whether the reproductive variable affects pro-environmental beliefs and the green purchasing intention among Generation Y consumers.

3.2 Research question

This research will respond to the following question:

Is reproductive motivation a factor that influences pro-environmental action and values among Generation Y consumers?

3.2.1 Null hypotheses (H_0)

a) Reproductive motivation has no significant or positive influence on pro-environmental behaviour among Generation Y consumers.
b) Reproductive motivation has no significant or positive influence on pro-environmental beliefs among Generation Y consumers.

3.2.2 Alternate hypotheses (H_a)

a) Reproductive motivation has a significant and positive influence on pro-environmental purchasing behaviour among Generation Y consumers.
b) Reproductive motivation has a significant and positive influence on pro-environmental beliefs among Generation Y consumers.

3.3 Research objectives

To address and answer the aim of this study, the researcher will focus on the objectives described below:

- Firstly, it will examine whether reproductive motivation affects pro-environmental behaviour.

- Secondly, it will investigate whether reproductive motivation influences pro-environmental beliefs.

- Thirdly, it will attempt to replicate the findings of previous research (i.e. Pickett-Baker and Ozaki, 2008) on pro-environmental behaviour and beliefs to analyse the value-action gap.

To the knowledge of the author of this dissertation, this is the first study on environmental awareness and consumer attitudes towards pro-environmental purchasing behaviour to be conducted within the context of the Generation Y group, considering reproductive motivation as an independent variable and the main factor of study.

To summarise, this chapter defined the aim of this study and precisely indicated the research question, including the null and alternative hypotheses and also the research objectives that will guide the investigation of the subject. The next chapter will specify and justify the method chosen to perform the data collection.

Chapter IV: Research Methodology

4.1 Introduction

This chapter has the purpose to delineate the procedures taken into consideration to achieve the aim and objectives of this dissertation.

According to Blaikie (2000), the design and strategy are the most essential components of research. Thus, the “Research Onion” (Figure 3) proposed by Saunders, Lewis and Thornhill (2007) was used as a reference point to guide the development of this study and construction of this chapter.

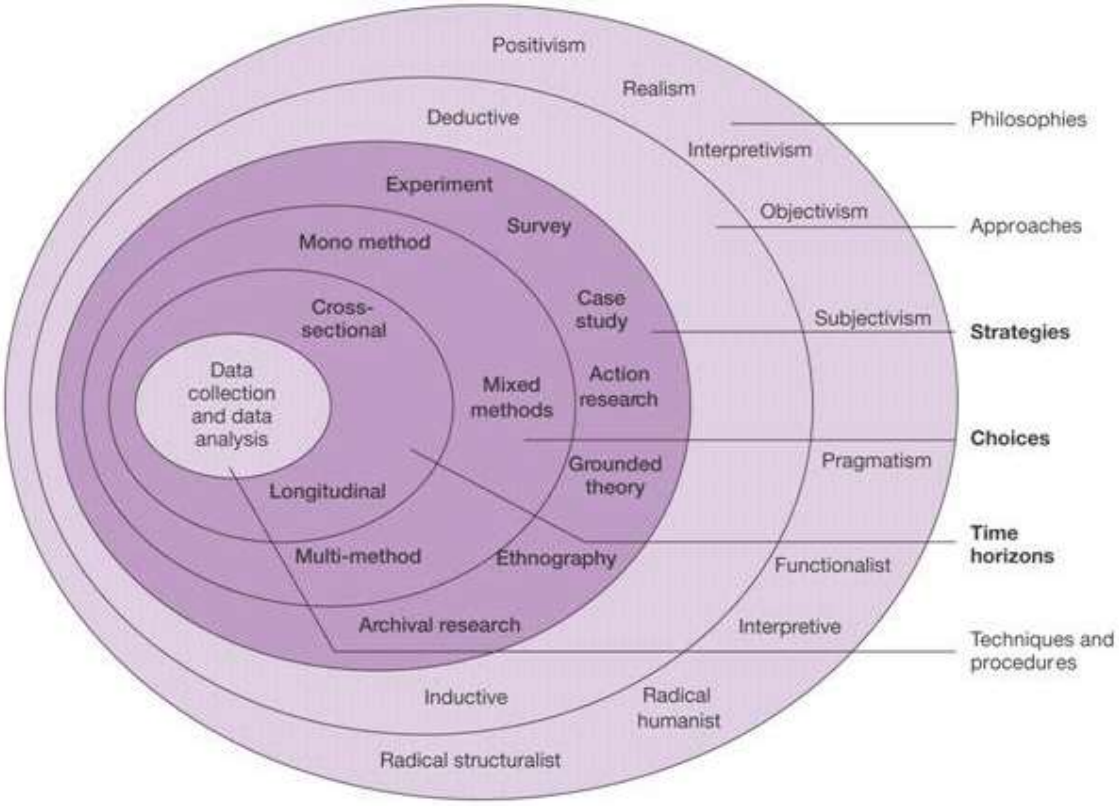

Figure 3 - Research onion (Saunders et al., 2007)

The model illustrates the stages that the researchers must go through when formulating and conducting research (Saunders et al., 2015). The authors suggest that it starts from the outer layer and proceeds to the core of the

Research Onion. Therefore, the start point of this model should be the definition of the research philosophies, followed by approaches, strategies, choices, time horizon and finally the techniques and procedures.

This chapter explains and justifies the methodological approach of this study. In summary, this section covers components such as:

- Type of data that was collected and how it is related to the research problem.
- Description of the methods of data collection, which includes the sampling criteria, the tools and the procedures used to gather the data.
- Explanation of the methods of data analysis, which indicates how the data was processed and analysed.
- Evaluation and justification of the author's methodological choices.

4.2 Research philosophy

The philosophy of research is an assumption that is the basis of research, that, which shapes all the other elements of the research. Saunders et al., (2009) suggests that research philosophies are assumptions and beliefs that guide the progress of knowledge. In other words, the beliefs shape the author's understanding about the research question, that influences choices related to the methodology and how the results are interpreted (Crotty 1998). The reflexive process acknowledges the philosophical condition and how it influences the research (Alvesson and Sköldberg 2000).

The four dominants philosophical approaches that a researcher can choose are Positivism, Pragmatism, Realism and Interpretivism, which are briefly defined below:

- Positivism: This philosophy "focus on strictly scientific empiricist method designed to yield pure data and facts uninfluenced by human interpretation or bias." (Saunders et al., 2015, p. 136). This approach commonly leads to a quantitative study since it has the intention to gain knowledge through

rational validation (Mackenzie and Knipe, 2006). Existing theories will provide a basis for the researcher to develop hypothesis that will need to be tested without bias. In other words, this aspect requires the researcher to remain neutral when analysing the data in order to do not influence the findings (Crotty 1998).

- Pragmatism: The pragmatism assumes that the concepts need to support actions with practical outcomes in order to be relevant (Kelemen and Rumens 2008). Pragmatists are able to let their values drive the study (Saunders et al., 2009) and occasionally, they use multiple methods (i.e. quantitative and qualitative) to conduct the collection of data. To summarize, this can be considered as a practical philosophy which focus on problem-solving and pragmatic findings.

- Realism: The realism approach focus on explaining an event taking into consideration the context. Humans use their senses and own perception to evaluate social phenomena and the researcher can acquire knowledge through mixed methods to support the data collection (Robson, 2011).

- Interpretivism: This philosophical approach emphasis that circumstances are subjective (Bryman and Bell, 2015) since humans create meanings for events (Saunders et al., 2015) and due to this fact, it requires the interpretation of the researcher when analysing the answers. According to Lin (1998), this philosophy involves a qualitative investigation since the researcher may adopt unstructured or semi structured form in order to collect the data.

After defining the philosophy that will guide the research, the author also needs to establish the approach to theory development. Saunders et al. (2009) suggest that there are three types of reasoning the authors can adopt: deductive, inductive and abductive.

According to Ketokivi and Mantere (2010), deductive reasoning when the finding is considered as true only when the set of premisses are also true. The conclusion

is based on logical arguments and due to this fact, it is commonly associated with the positivist research philosophy (Saunders et al., 2015).

In contrast, the intuitive approach requires the observer's values and interpretation to generate a conclusion. It means that the observations will be supported by the researcher's perception (Ketokivi and Mantere, 2010). Thus, this reasoning is usually taken into consideration by interpretivists.

The abductive reasoning is when the researcher collects data to explore an event, identifying patterns in order to develop a new theory or modify an existing one. Subsequently, the researcher will collect additional data to test the hypothesis.

The table below summarizes the three different types of reasoning:

	Deduction	Induction	Abduction
Logic	In a deductive inference, when the premises are true, the conclusion must also be true	In an inductive inference, known premises are used to generate untested conclusions	In an abductive inference, known premises are used to generate testable conclusions
Generalisability	Generalising from the general to the specific	Generalising from the specific to the general	Generalising from the interactions between the specific and the general
Use of data	Data collection is used to evaluate propositions or hypotheses related to an existing theory	Data collection is used to explore a phenomenon, identify themes and patterns and create a conceptual framework	Data collection is used to explore a phenomenon, identify themes and patterns, locate these in a conceptual framework and test this through subsequent data collection and so forth
Theory	Theory falsification or verification	Theory generation and building	Theory generation or modification; incorporating existing theory where appropriate, to build new theory or modify existing theory

Table 1 - Deduction, induction and abduction: from reason to research (Saunders et al., 2009)

4.3 Research method

In academia, there are three types of research: quantitative, qualitative and mixed-methods. They work to help advance the knowledge about phenomena and each type has its strength and weaknesses. Therefore, it is essential to understand their characteristics in order to choose the most appropriate one.

This study focused on the quantitative approach. It allows the researcher to test hypothesis, which requires a larger sample size that will respond to a close-ended questions. In other words, it is the method used to confirm or deny theories or hypnosis (Newman and Ridenour, 1988). The data collected is translated into numbers that, in turn, are illustrated in graphs and the results are tested through statistical analysis. Moreover, the collection of quantitative data can be through surveys (e.g. online, phone, in person), conduction of experiments or observation of subjects.

4.4 Justification

As this research aims to test hypothesis as also predict specific behaviour, the philosophy adopted to guide the author's decisions when structuring and conducting the study, was the **positivism philosophy** associated with a **deductive approach** that leads to a **quantitative research**.

In strict sense, this approach focuses on the idea that the knowledge is logical and factual. In other words, it does not take into consideration the interpretation of facts since it observes phenomena from an objective perspective. Thus, the study focuses on the measurement and statistics in which the words will be analysed.

The researcher aims to obtain understanding about the dissertation topic with predetermined procedures and descriptions and apply this knowledge to a highly structured questionnaire with closed-ended questions. The questionnaire was breakdown into different sections that address the **value**, **action** and **reproductive motivation** aspects.

An interesting point that was also taken into consideration when choosing the approach to guide this study, was the fact that sustainable behaviours can be classified as sensitive topic to a certain extent. In other words, respondents may feel embarrassed when answering to the interviewer if their attitude is not sustainable. Therefore, the actual behaviour might not be exposed, affecting the results.

However, it is essential to highlight that a limitation of the chosen approach is related to the complexity to define the main subjects of this research regarding behaviour and beliefs towards environmentally sustainable products. Due to this fact, the author aims to measure these aspects through scales. According to Cooper (2000), a graduated range of values enable the understanding and classification of impacts and quality of products.

To summarize, the approach adopted was considered the most suitable to answer the current research question because it will enable the author to analyse cause and effect, test hypothesis in order to develop a broader theory from it and bring a new understanding for the field.

It is important to acknowledge that the limitation of this approach is outweighed by its strengths. Additionally, what also influenced the author's choice, was the fact that the use a similar approach has been frequently in studies that focus on the same subject that aims to measure the pro-environmental value-action gap (e.g. Pickett-Baker and Ozaki, 2008).

4.5 Research strategy

The research strategy is an important part of the Research Onion since it indicates how the researcher will, in fact, conduct the data collection. In other words, every research must have a strategic plan in order to achieve the research goal.

Saunders et al. (2007) suggest many types of research strategies, such as: experiment, survey, archival research, case study, ethnography, action research, and grounded theory. It is essential to note that the research strategy varies according to the research methodology and overall research approach.

Taking into consideration the approach adopted to this current study (i.e. exploratory in nature, deductive reasoning, and quantitative method), the research strategy chosen by the author was the **survey**. It will enable the author to construct the questionnaire based on the theories that will be tested by the data collected. The answers will be quantifiable, and it will allow the use of statistical modellings to analyse the data empirically.

4.6 Research design

The research design is one of the most essential layers of the Research Onion since it has the fundamental role to define the framework that is necessary to execute the research project (Yin, 2014). In other words, it is the plan that includes the methodology used to gather data, specify the sampling criteria and finally, delineates how the researcher will analyse the data collected (Flick, 2011).

This study was based on **quantitative research design**. Therefore, given the importance of this topic, the main elements that constitute the research design will be presented and explained within the context of this study in the following sections.

4.6.1 Sample population

The target of this current research are consumers, both female and male, aged between 20 and 40 (in 2020). The reason individuals need to be among this age range is due to the fact that this paper aims to investigate the Generation Y. According to the definition provided by Lloyd et al. (2013), it consists of people born between 1980 and 2000.

Moreover, consumers above 18 years old are considered fully responsible in relation to their purchasing decisions, which, can take environmental problems into account during the buying decision process (Rahbar and Wahid, 2011).

An important detail that must be highlighted is the fact that the sample is multinational. In other words, the sample is composed of individuals from different countries and continents. As this study does not aim to investigate the findings with a perspective focused on location, this demographic factor was not collected. Nevertheless, it must be acknowledged since the possible impact of this aspect will be discussed in later sections of this paper.

4.6.2 Sampling techniques

According to Bryman and Bell (2015), the researchers have two options when defining the sampling technique: probability sampling and non-probability sampling. For the purpose of this study a **convenience (non-probability) sampling technique** will be used. Individuals were reached and recruited by the researcher's posts via internet (e.g. Facebook groups, Instagram followers, WhatsApp messages and email) and they will respond to the questionnaire on a voluntary basis.

4.6.3 Sample size

This research collected the sample of 143 individuals who were requested to answer the survey on a voluntary basis and a total of 131 responses were analysed.

The sample size was defined based on the fact that the researcher also aims to reproduce the findings of the previous research that was conducted by Pickett-Baker and Ozaki in 2008. This previous study obtained a sample of 52 respondents. Therefore, in order to verify if the sample size would affect the results, the author of this study opted to increase the number to ensure the reliability and validity of the results.

4.6.4 Data collection procedures

To accomplish the aims of this project and to answer the research question, the tools and procedures for the data collection need to be appropriate for a quantitative approach. Therefore, the author opted to collect the data through an **online structured questionnaire** with **close-ended questions**.

To summarise, this research instrument is a type of quantitative technique of data collection that consists of numerous questions. In simple words, it is used to gather data from the sample that generates quantifiable data, allowing the researcher to study the data empirically with no bias.

There are many advantages in using the online questionnaire as a research instrument, such as: economical in terms of cost, time and effort and also the speed. For instance, Carbonaro and Bainbridge (2000) also suggest that web surveys allow the easy access to all participants, that, in turn, is an essential aspect of data collection.

Moreover, online data collection has a superior response rate when compared with other instruments (Matz, 1999 and Ilieva et al, 2002). However, the web survey also has weaknesses, which include the factor of fake respondents factor. In other words, this mechanism enables people to answer more than once or not to answer sincerely (Lefever et al., 2006).

Despite the areas of concerns, it is essential to take into account that the current study does not intend to focus only on people's behaviour from a specific country and culture because this aspect also has the potential to influence the results. Therefore, the online questionnaire was chosen because it also enables the research to access and collect data from a larger geographically distributed sample.

4.6.4.1 Pilot study

With the purpose of understanding if the questionnaire had to be refined and the procedures adjusted, a pilot experiment was performed with 8 respondents.

The pilot version allowed the researcher to check if the questionnaire is the most appropriate method to measure the dependent variable (i.e. the green purchasing behaviour) and also to check if the independent variable (i.e. reproductive motivation) is being manipulated correctly.

Moreover, it was used to verify if there were any errors and also misconception regarding the presented questions. The respondents were asked about their perceptions, if they understood exactly what was asked and if there was anything that could have been done differently to improve the experience when responding to the questionnaire.

Therefore, this pilot experiment was a valuable procedure because it provided an overview of what should be fine-tuned and optimised the researcher's time. In other words, the researcher wasted no time because all the necessary adjustments were made before presenting the questionnaire to the public.

4.6.4.2 Research instrument (questionnaire)

This is a positivist research, and, therefore, free of values or ideologies. In other words, the research relies on statistics (scientific evidence) to reach a full understanding about the research problem (Ryan, 2006). In addition, as indicated previously, the adopted research method is quantitative and the questionnaire was used a research instrument in order to collect the data from the participants.

The questionnaire consists of four parts, in which the first three parts are the measurement scales and the last part collects the demographic data.

It is important to outline that the author of this paper formulated the questionnaire based on previous and recognised studies. The main research that guided the

author's choices was the one conducted by Pickett-Baker and Ozaki (2008). The researchers also examined the relationship between pro-environmental beliefs and behaviour.

In other words, the study has a similar approach of attempting to understand the consumer beliefs and the purchasing decision. Both questionnaires are reliable and valid, as they are acknowledged in the literature.

The first section of the questionnaire (Table 2) contains RSW Green Gauge questions that aim to investigate past environmental behaviour developed by Ottman (1998). However, it is necessary to clarify that this first part was adapted from Pickett-Baker and Ozaki (2008).

Subsequently, the second section (Table 3) was inspired by the study conducted by Ahn et al. (2012) that analysed the link between personal norms and pro-environmental behaviour and its effects on the awareness of consequences and perceived seriousness related to the ecological effects. Therefore, the part two incorporates questions regarding the seriousness of environmental problems (questions: 1, 2 and 3), awareness of consequences (questions 4, 5 and 6) and personal norm (question 7).

The third section (Table 4) includes the revised New Ecological Paradigm (NEP) scale, established by Dunplan et al. (2000). According to the authors, it has the purpose to measure people's transition from a dominant social paradigm (DSP) to a New Ecological Paradigm. In other words, it aims to measure individual pro-environmental orientation, which is linked to personal values.

Finally, the fourth section is composed of the demographical questions which have the objective to characterise the sample of respondents. As reported by Vogt & Johnson, (2011), the demographic aspects allow researchers to perform a statistical analysis related to a precise population. This part is extremely essential to the study because it also contains specific questions that measure reproductive motivation.

It must be noted that the order of sections was carefully considered and structured to prevent previous questions from influencing later questions. For instance, “how many children would you like to have” could unconsciously manipulate the answers related to pro-environmental beliefs and beliefs.

In addition, because it is a questionnaire with long sentences, the demographic section was the last section to decrease the probability of an individual dropping out before the end of the survey. Another important factor is the choice of opting for allocating the section related to ecological actions before ecological values, due to the fact that it could also influence the results.

Each section of the questionnaire is detailed below:

	RSW Green Gauge past environmental behaviour questions (How often do you do any of the following?)
1	I avoid buying aerosol products.
2	I read labels to see if contents are environmentally safe.
3	I buy products made or packaged in recycled materials.
4	I avoid buying products from companies who are not environmentally responsible.
5	I recycle bottles, cans or glass.
6	I recycle newspapers.
7	I compost garden waste.
8	I take my own bags to the market.
9	I try to cut down on car use.
10	I contribute money to environmental causes.
11	I am a volunteer for an environmental group.
12	I write to politicians about environmental problems.

Table 2 - Questionnaire (section 1)

Seriousness of environmental problems, Awareness of consequences and Personal norm (Listed below are statements about environmental problems and buying behaviour. To what extent do you agree with them?)	
1	I think environmental problems are serious.
2	I think that environmental problems need to be addressed urgently.
3	I think environmental problems are worsening.
4	Environment-friendly buying behaviour helps the environment.
5	Environment-friendly buying behaviour helps preserve clean air.
6	Participating in environment-friendly buying behaviour will help future generations.
7	I feel I must do something to help future generations.

Table 3 - Questionnaire (section 2)

Revised New Ecological Paradigm (NEP) Scale (Listed below are statements about the relationship between humans and the environment. To what extent do you agree with them?)	
1	We are approaching the limit of the number of people the Earth can support.
2	Humans have the right to modify the natural environment to suit their needs.
3	When humans interfere with nature it often produces disastrous consequences.
4	Human ingenuity will ensure that we do NOT make the earth unlivable.
5	Humans are severely abusing the environment.
6	The earth has plenty of natural resources if we just learn how to develop them.
7	Plants and animals have as much right as humans to exist.
8	The balance of nature is strong enough to cope with the impacts of modern industrial nations.
9	Despite our special abilities humans are still subject to the laws of nature.
10	The so-called "ecological crisis" facing humankind has been greatly exaggerated.
11	The earth is like a spaceship with very limited room and resources.
12	Humans were meant to rule over the rest of nature.
13	The balance of nature is very delicate and easily upset.
14	Humans will eventually learn enough about how nature works to be able to control it.
15	If things continue on its present course, we will soon experience a major ecological catastrophe.

Table 4 - Questionnaire (section 3)

	Demographic Aspects
1	What gender do you identify as?
2	How old are you?
3	Where do you live?
4	What is the highest degree or level of education you have completed?
5	Do you have children?
6	If yes: Would you like to have more?
7	If no: Would you like to have children?
8	How many children in total?

Table 5 - Questionnaire (section 4)

4.6.5 Data analysis

This section introduces a brief explanation of the basic concepts of the quantitative data analysis and the guidelines that supported the researcher when investigating the collected data from the sample. This is a fundamental part of this paper because it also describes how the data was handled in this study, that in turn, enabled the author to derive the research findings.

According to Russell (2014), quantitative data analysis can be considered as the procedures that use statistical techniques in order to present, analyse and interpret numerical data. Essentially, the use of statistics allows the identification of partners in the data set and the assessment of possible types of relationship between different variables.

It is important to consider that there are two main types of data research analysis: primary and secondary. Russell (2014) explains that primary research is when the researcher conducts the collection of data from people, and the advantage is that the researcher gathers information that suits their needs and also controls the quality. On the contrary, secondary research is when the data is previously collected by another entity and not the researcher. It is a good preparation for primary research since it provides a broader understanding about specific social

phenomena. In this study, the author analysed the data from primary and secondary sources.

Once the researcher obtained the collected data from the sample, it was necessary to use a tool to conduct the data analysis. In this case, the author opted to use the IBM SPSS Statistics software.

The program facilitated the performance of the statistical analysis that enabled the researcher to visualise the frequency distribution of the different variables and the correlation between them with the descriptive and inferential statistics.

Before performing the analysis, the author verified the dataset in order to identify and exclude outliers taking into consideration the “outlier labelling rule” (Hoaglin and Iglewicz,1987). In other words, the extreme (highest and lowest) numbers were removed since they do not represent the real tendency and central value, that in turn, can skew the average value and lead to a misinterpretation of the data.

It is essential to state that two important factors were considered when conducting the data collection and analysis in order to enhance the quality of the study: reliability and validity. According to Heale and Twycross (2015), reliability is when the research instrument provides consistent results, whereas validity is when the study is measuring the variables accurately.

This study collected responses from 143 participants. However, because people from different age groups and outliers were removed, 131 results were included in the analysis. This topic will be discussed in more detail in the next chapter.

The guideline for data analysis followed by the researcher of this study, is described in the table 6 (adapted from Schulz, 2012).

Guideline for data analysis	
1	Transfer the information collected from the questionnaire into the SPSS
2	Code the questionnaire (i.e. allocate a value for each possible response)
3	Define a strategy for data analysis and the most appropriate statistical test taking into account the research question
4	Univariate analysis to compile and describe responses (e.g. Frequency distribution and measures of central tendency)
5	Bivariate analysis to present the relationship between two variables (e.g. Scatter plot)
6	Perform the statistical test to test the hypothesis of this dissertation (e.g. Linear regression)

Table 6 - Guideline for data analysis

The first three sections of this research contained 36 statements with a 5-point Likert scale response to measure the level of agreement or frequency. For instance, the first section (Table 2) examined the frequency whereas the second and third sections (Table 3 and 4) considered the level of agreement.

The following table indicates the value that were allocated for each response alternative:

5-point Likert scale		
Value	**Frequency**	**Agreement**
1	Never	Strongly Disagree
2	Rarely	Disagree
3	Sometimes	Undecided
4	Frequently	Agree
5	Always	Strongly Agree

Table 7 - Data coding (5-point Likert scale)

It is important to state that the values must be attributed carefully to ensure that every response is being weighted correctly. That said, the researcher first needed to understand the meaning of the statements and, subsequently, attribute the values.

One of the difficulties faced by the author when coding the data, was the interpretation of statements 4, 6 and 14 of section 3 (Table 4). The researcher's personal interpretation was required in order to attribute the values since the meaning of those statements is not clear. Which means that in different studies that used the same measurement scale, each of those statements might have contrasting values. However, it is also necessary to highlight that section 3 has 15 statements, and due to this fact, the results would not be substantially affected by specific interpretations. For instance, the question 6 of section 3 (Table 4) could be coded taking into account that "Strongly Agree" is equal to 1 or 5, as it is not clear whether the statement has a positive or negative connotation.

In order to test the hypothesis of this dissertation, the researcher opted to analyse the dataset using the Linear Regression model as the goal was based on the identification of a possible relationship between the reproductive motivation and pro-environmental action as also value.

The independent variable (x-axis) is the reproductive motivation, measured by the total number of children an individual aims to have whereas the dependent variable (y-axis) is the pro-environmental action rate, measured by the mean of responses from section 1 (Table 2). The author will also analyse the relationship between reproductive motivation (x-axis) and pro-environmental value rate (y-axis), measured by the mean of responses from section 3 (table 4).

To summarize, the analysis of scatter diagram, linear regression and frequency distribution of different variables enabled the researcher to further investigate the subject of this dissertation and the next chapter will cover the findings in more detail.

4.6.6 Time horizon

This layer of the Research Onion refers to the time horizon for research. Saunders et al. (2007) suggest that there are two main time horizons: cross-sectional and longitudinal. According to the authors, the cross-sectional horizon consists of research that can be completed within a short period of time while the longitudinal time horizon requires a longer time frame in order to be concluded as it has the aim to collect data more than once time over a longer period of time.

The time horizon of this study is the cross-sectional horizon due to the fact that it aims to collect the data at one point in time and it is aligned with the overall research approach. Additionally, it is important to take into account that the researcher was required to complete this study within 7 months.

In summary, the time period of this research includes all the stages that the present author needed to go through in order to conclude the study, starting from initial information gathering, the assortment of the literature, the selection of methodology and ending with the data collection, analysis and reporting.

The author used a Gantt chart to organise and plan the research project, which contains the tasks needed to be accomplished within the time period specified below:

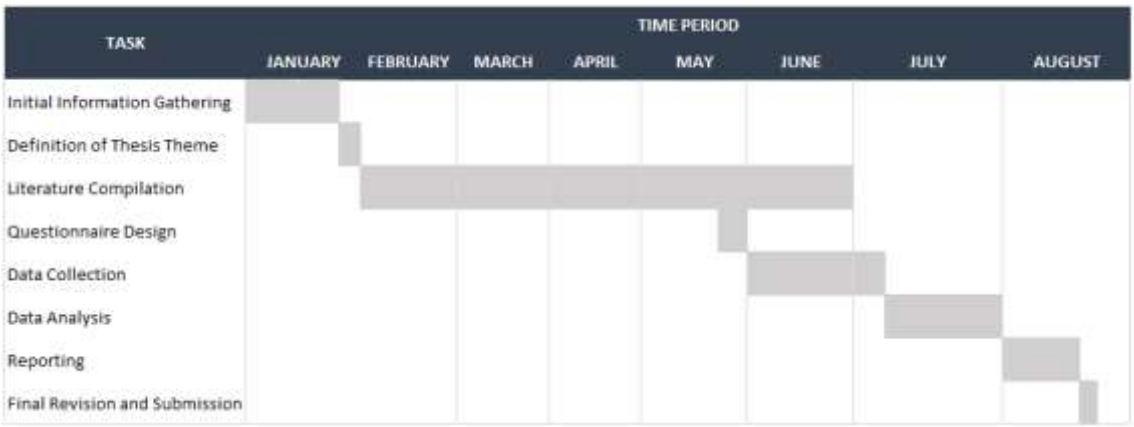

Figure 4 - Time frame for research study

4.7 Ethical considerations

This section has the purpose to outline the guidelines that the researcher considered when conducting the study in order to avoid ethical issues. It is important to analyse the ethical considerations that were taken into account not only when collecting the data but also after the research was concluded.

To summarise, the main objective of the ethical considerations for this study, was to reduce any possible harm or negative effects involving the respondents. Below are the elements that constituted the author's ethical guidelines:

- Respect for anonymity, confidentiality and privacy. The first part of the research contained a disclosure with a note that explained how the data provided by each respondent would be handled and for how long the data would be stored.

- Protection from harm. This study does not require the involvement of vulnerable groups of people and it does not aim to investigate highly sensitive themes. Thefore, situations that the research is unable to address will probably not exist. Although there is no expectation of adverse reactions as a consequence of this study, the contact information of the researcher was also provided to offer support if required.

- Benefit to respondents. The researcher stated in the first section of the questionnaire that the individuals would have the opportunity to receive the feedback from this study in relation to the findings of this research.

- Informed consent. Before answering the questions, the participants had to agree with the essential information about the research. Connelly (2014) suggests that this is a fundamental aspect when collecting data.

The researcher followed the guidelines described above and these considerations were included to the first part of the questionnaire (Figure 5).

Consequently, the respondents were aware of the overall aim of the research and the guidelines taken into consideration related to data collection, privacy and other elements.

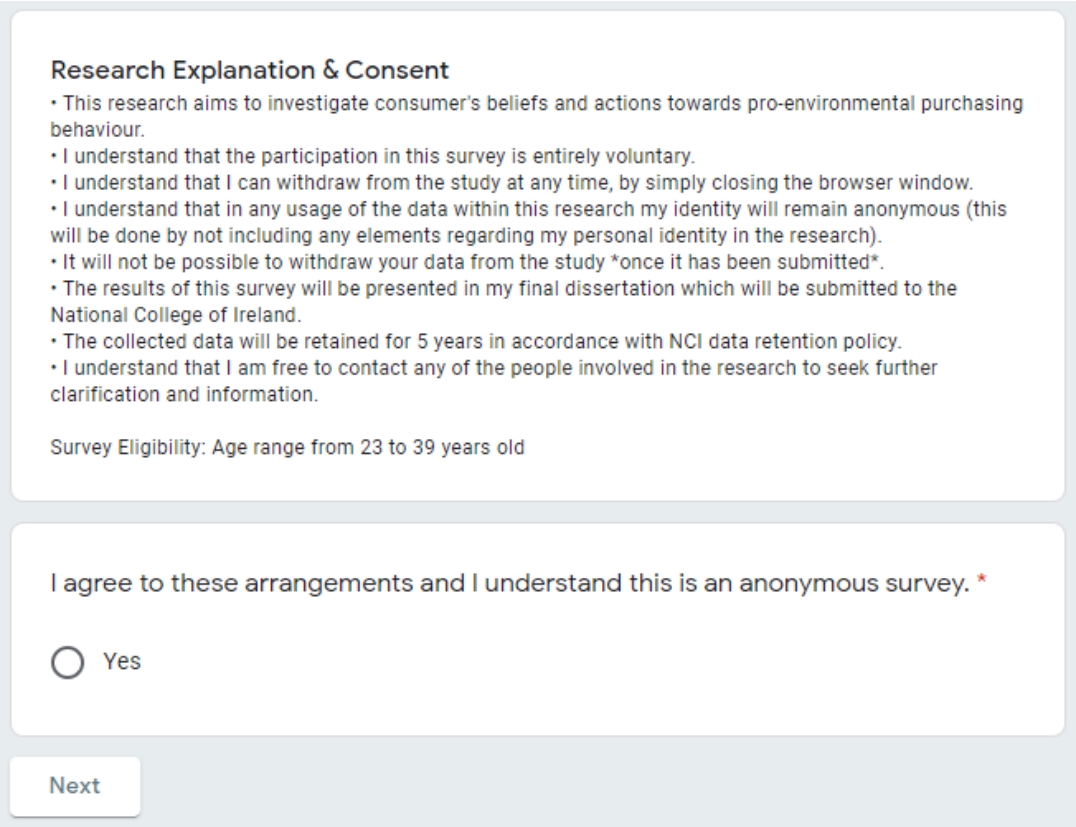

Figure 5 - Research explanation and consent

4.8 Limitations

This section provides a broad overview and clarifies the constraints of the research that have the potential to influence the final results. In other words, this section addresses the actual scenario and the holistic view of this research by considering its potential limitations.

The first limitation involves the **sample profile**. It is important to acknowledge that the sample includes people from different countries, cultures, languages and economic classes. The context of where the respondents live might affect the consistency of the results. For instance, the concept of sustainability and sustainable practices may differ according to each region. Chapter VII will provide

an in-depth discussion about this factor (Section: 7.2 Recommendations for Future Research).

the **method chosen** by the author has the potential to be considered as a boundary, as the questionnaire consists of closed-ended questions. Therefore, it might not access a complete and detailed reality of the facts. According to Ryan (2006), a highly structured questionnaire may provide superficial and shallow information. However, it is necessary to endorse that despite this limitation, the chosen method was considered as the most appropriate to guide this study, as previously discussed in this paper (Section: 4.3 Justification).

Finally, **pre-determined (standard) questions** were selected to measure the endorsement of a pro-environmental world view and eco-friendly behaviour. The New Ecological Paradigm scale (Dunlap et al., 2000) and RSW Green Gauge past environmental behaviour questions (Ottman, 1998). This set of questions has been widely accepted by many researchers as valuable tools for examining and measuring the subject. However, they may no longer be valid or essentially relevant, as the global scenario has changed considerably since they were developed.

Chapter V: Findings and Analysis

This chapter provides a description and analysis of the research results. More specifically, it presents an analysis of the collected data, indicates the research limitations, and briefly mentions the correlation between the results and main elements of the literature.

It is important to note that the research question is: “Is reproductive motivation a factor that influences the consumption of green products or services among Generation Y consumers?”. Due to this fact, the investigation focused mainly on answering the research problem. However, the author also investigated other relevant correlations and frequencies in order to provide a robust analysis.

To have a better overview, this section is structured by the key points that guided the data examination as described below:

- Demographic characteristics of the respondents
- Reproductive motivation overview
- Pro-environmental action overview
- Hypothesis testing: reproductive motivation and pro-environmental action and values
- Reproducing previous study: the value-action gap

5.1 Demographic characteristics of the respondents

A total of 143 participants responded and completed the questionnaire. However, only 131 responses were included in the analysis as it was necessary to remove the outliers and the data from people allocated to different age groups, as the research aimed to analyse only Generation Y (individuals aged between 20 and 40).

Variable	Sub-division	Frequency	Percent (%)
Gender	Female	69	52,7
	Male	62	47,3
Age (years)	21-24	45	34,4
	25-28	34	25,9
	29-32	15	11,5
	33-36	23	17,5
	37-40	14	10,7
Location	Rural	2	1,5
	Suburban	13	9,9
	Urban	116	88,5
Education	High/Secondary School	24	18,3
	Bachelor's Degree	78	59,5
	Master's Degree	25	19,1
	Ph.D.	1	0,8
	Others	3	2,3
	Total	131	100

Table 8 - Demographic description of respondents

Table 8 summarises the demographic characteristics of the sample. One of the most important aspects of this research was related to obtaining a balanced gender sample (Figure 6), as it is a crucial factor in enhancing the study's relevance by avoiding gender bias.

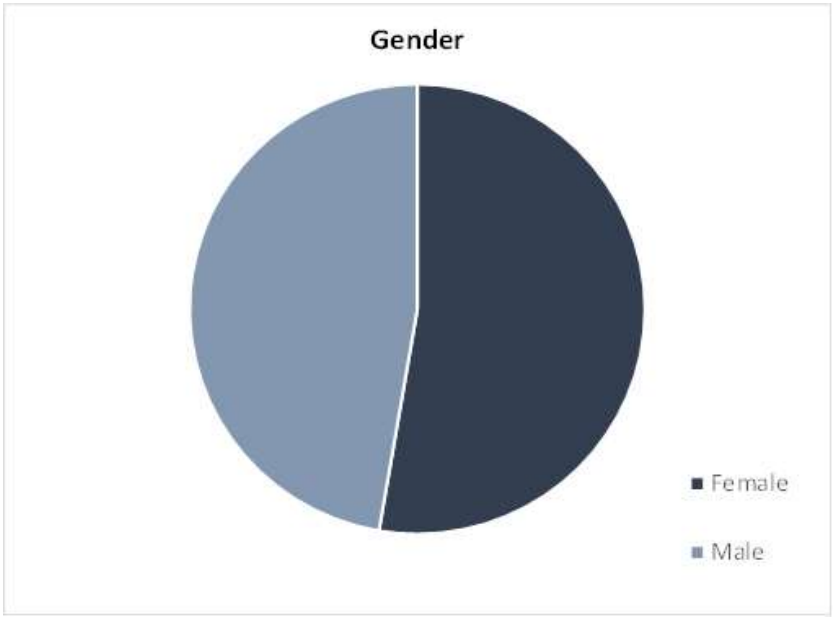

Figure 6 - Gender

The respondents were asked for their specific age. However, to analyse the responses, the ages were allocated into groups as demonstrated below:

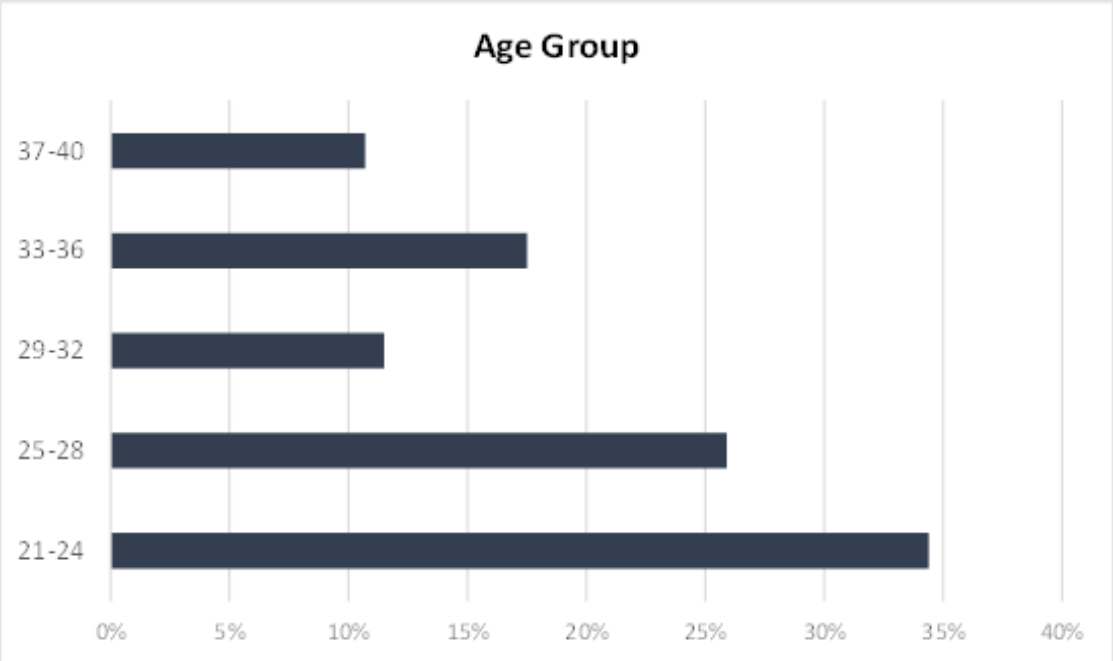

Figure 7 - Age groups

When investigating the age groups, the difference between the youngest and the oldest groups was evident. Although all the participants are labelled as Millennials (i.e. Generation Y), the youngest groups constitute the largest part of the sample. This may be considered as a limitation because the discrepancy between the age groups might reflect on the results and its potential over-generalisation.

It is important to highlight that 79% is the value of the respondents have high levels of education (i.e. bachelor's degree, master's degree or Ph.D.), as illustrated in Figure 8. Previous studies suggest that education levels influence individual ecological behaviour because those with high levels of education have more knowledge about environmental issues, which consequently increase the concern about social well-being (Meyer, 2015).

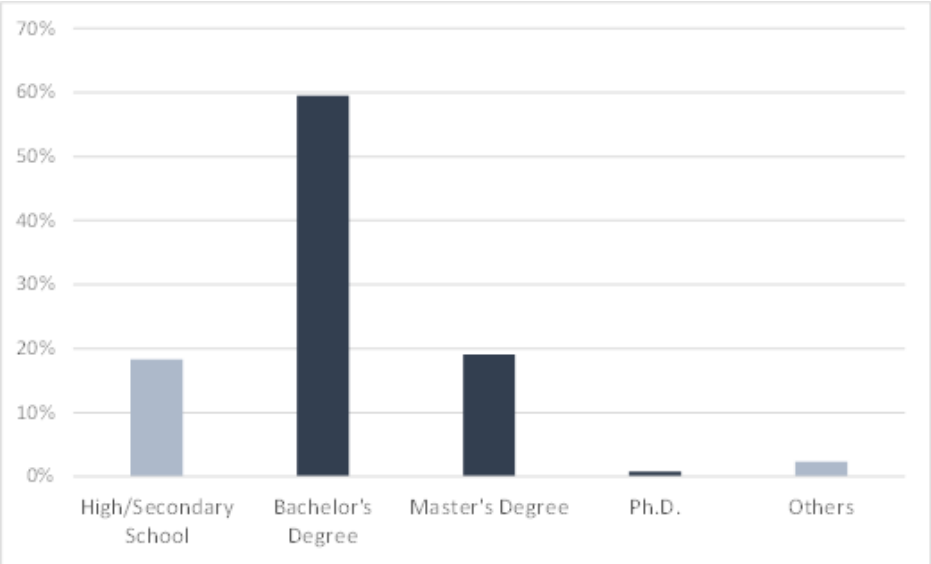

Figure 8 - Education

5.2 Reproductive motivation overview

The study also collected data to access the reproductive motivation elements (Table 9). It is crucial to note that the 'total number of children' was the aspect used to measure the reproductive motivation of an individual. However, the author also gathered information related to whether the respondent has children or not, as also whether the person would like to have children in the future. This data was analysed in order to provide a better understanding regarding the sample profile.

Reproductive Motivation Aspects			
	Sub-division	Frequency	Percent (%)
Do you have children?	No	116	88,5
	Yes	15	11,5
Do you want to have children?	No	33	25,2
	Yes	98	74,8
Total number of children	0	29	22,1
	1	16	12,2
	2	57	43,5
	3	29	22,1
	Total	131	100

Table 9 - Reproductive motivation aspects

The table 9 shows that the main part of respondents do not have children, but at the same time there is a desire to have them in the future. Furthermore, in order to individually analyse the reproductive motivation main variable (i.e. total number of children), the author decided to classify the responses. Therefore, responses for the total number of children an individual already has or would like to have, were split into two groups: low and high reproductive motivation.

As illustrated in the Figure 9, the “low reproductive motivation” group (i.e. the total number of children is 0 or 1) constitutes 34%. The “high reproductive motivation” group (i.e. the total number of children is 2 or 3) composes 66% of all the responses. It is observed that there is a moderate discrepancy between both groups, and this factor can be also considered as a limitation. However, this potential limitation was minimised because the main analysis for this topic (i.e. linear regression) considered the exact number of children and not the reproductive motivating groups.

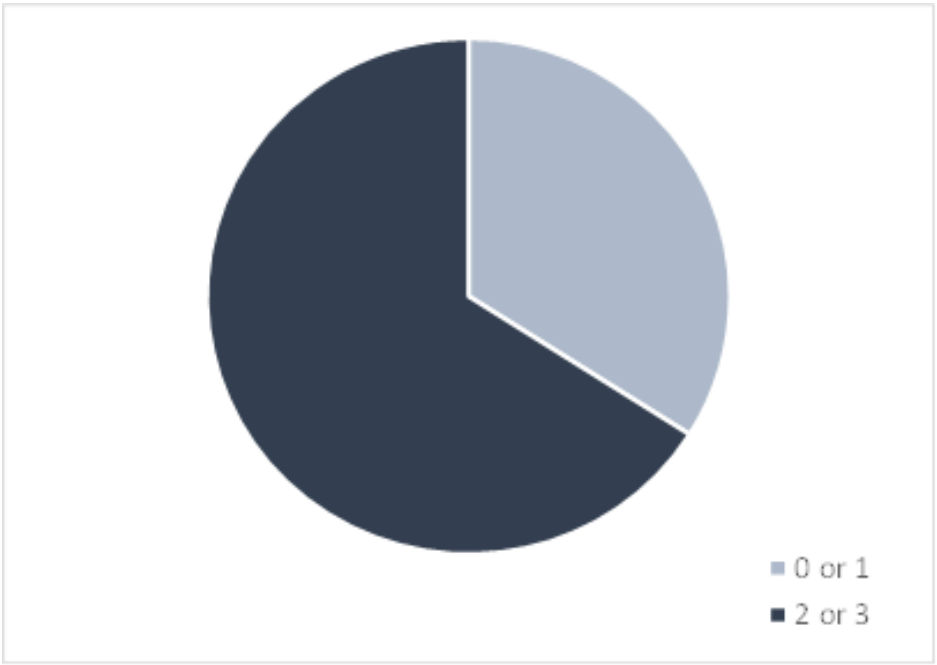

Figure 9 - Reproductive motivation groups

5.3 Pro-environmental action overview

As can be seen in Table 10, the pro-environmental action that people most engage is taking reusable bags to the supermarket which results in reduction of disposable plastic bags. Interestingly, this factor leads to an increase of organic food consumption (Karmarkar and Bollinger, 2015), which can be also considered as a good and eco-friendly behaviour.

Subsequently, people also recycle bottles, cans, glass and newspaper. It illustrates the fact that individuals tend to separate the waste and dispose it into the appropriate bins. Nonetheless, it does not indicate that the overall consumption of goods and waste amount is reduced.

Besides that, a good aspect noticed is that individuals are reducing car use. This factor shows that Millennials are more likely to commute by riding bikes, using public transport or by foot.

Statistics		
Statement	**Mean**	**N**
I take my own bags to the market.	4,39	131
I recycle bottles, cans or glass.	4,19	131
I recycle newspapers.	3,79	131
I try to cut down on car use.	3,53	131
I avoid buying aerosol products.	2,83	131
I avoid buying products from companies who are not environmentally responsible.	2,82	131
I compost garden waste.	2,56	131
I read labels to see if contents are environmentally safe.	2,51	131
I buy products made or package in recycled materials.	3,22	131
I contribute money to environmental causes.	1,86	131
I am a volunteer for an environmental group.	1,43	131
I write to politicians about environmental problems.	1,27	131

Table 10 - Statistics (action statements)

Writing to politicians about environmental issues, volunteering for environmental groups and contributing money to environmental causes are extremely important factors, but few people are willing to do this. This might be due to the fact that it requires more effort in order to perform these actions.

5.4 Hypothesis testing

5.4.1 Reproductive motivation and pro-environmental action

In order to test one of the main hypothesis of this study, a linear regression of number of children on action was performed to diagnose a potential correlation between the variables and examine its statistical significance. It enabled the researcher to identify whether the probability of the proposed relationship was real or not real.

For the purpose of this research, it is important to consider that the ‘action’ variable is also referred as pro-environmental action or environmental behaviour. In addition, the reproductive motivation is related to the total number of children an individual already has or would like to have. Therefore, these words and expressions have the same connotation and definition.

Before starting to analyse the results, the researcher verified the dataset in order determine if it was a satisfactory collection of data in terms of the assumptions for the linear regression. For instance, the variables were measured at the continuous level (i.e. Likert scale), and this is the first assumption that the data set should meet in order to perform a linear regression (Laerd statistics, 2018).

The normal probability-probability plot (Figure 10) shows a small deviation, however, the values do follow the line, and this factor is also considered as a good aspect to determine the dataset quality.

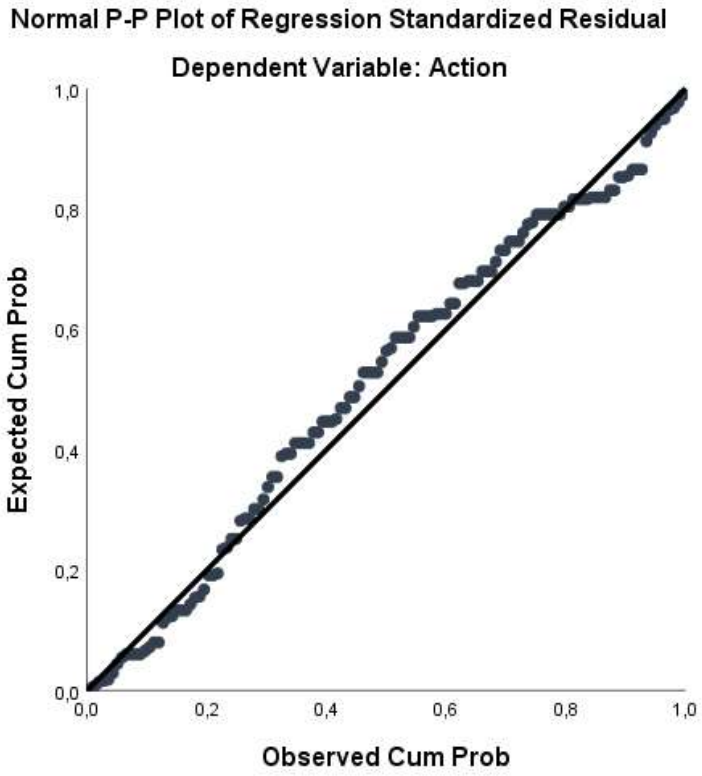

Figure 10 - Normal P-P of regression standardized residual (action)

Moreover, as can be observed in Table 11, the extreme cases are close to 3 and -3 but they do not exceed these values. This endorses the diagram's analysis because it presents acceptable values for the standard residual and Cook's distance.

Residuals Statistics[a]					
	Minumim	Maximum	Mean	Std. Deviation	N
Std. Residual	-2,738	2,287	0,000	0,996	131
Cook's Distance	0,000	0,068	0,007	0,010	131

a. Dependent Variable: Action

Table 11 - Residual statistics (action)

Upon further review of the assumptions and dataset for linear regression, it was concluded that the output was reliable and valid. Subsequently, it was possible to evaluate the ANOVA (analysis of variance) report, in order to test the null hypothesis.

The main element displayed in Table 15 is the significance ("Sig."). To have a significant result, the significance value, also known as the p-value, must be less than 0.05. Therefore, it can be concluded that the result of this regression is not significant (p = 0.583; Table 12).

ANOVA[a]					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	0,096	1	0,096	0,303	0,583[b]
Residual	41,000	129	0,318		
Total	41,097	130			

a. Dependent Variable: Action

b. Predictors: (Constant), Total number of children

Table 12 - ANOVA (total number of children and action)

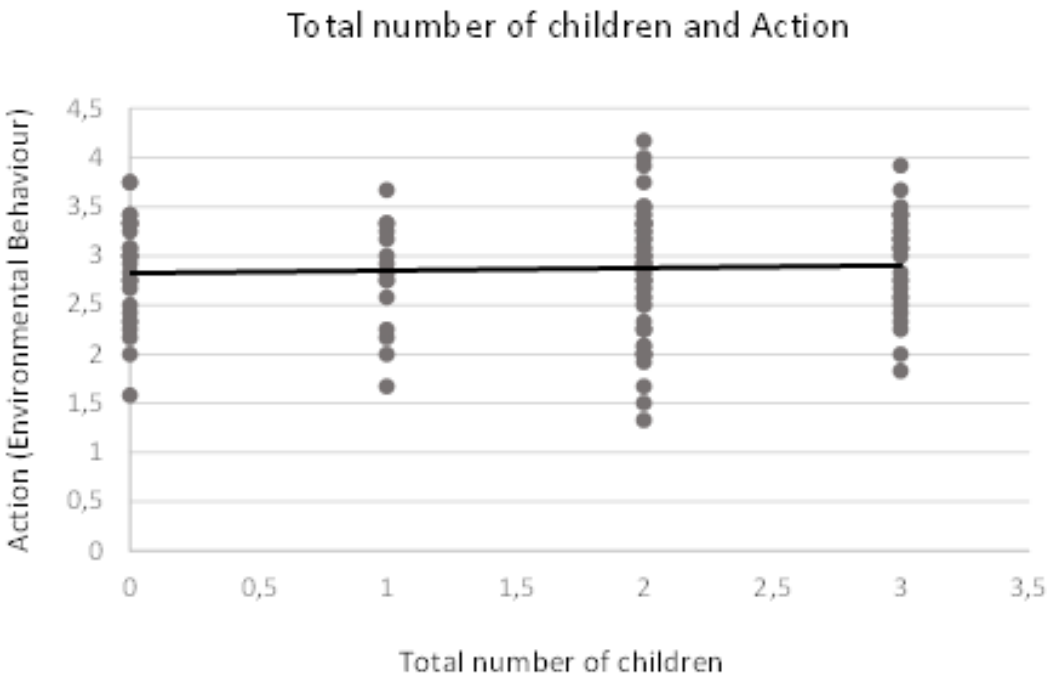

Figure 11 - Scatter plot (total number of children and action)

The analysis of scatter diagram also reinforced the assumption described above. As Figure 11 illustrates, there is no evident association between the variables since it is not possible to identify any pattern or correlation between the total number of children and action.

Hence, due to the fact that the p-value is greater than 0.05, it is necessary to state that the **results have failed to reject the first null hypothesis**. It leads to the conclusion that the reproductive motivation has no significant or positive influence on pro-environmental behaviour among Generation Y consumers.

5.4.2 Reproductive motivation and pro-environmental values

The other hypothesis of this dissertation is related to the positive correlation between the reproductive and environmental beliefs and, to examine its statistical significance, a linear regression of number of children on value was performed. It allowed the researcher to verify whether the probability of the relationship between the variables was real or not real.

For the purpose of this study, the 'value' variable is also referred as pro-environmental values or environmental beliefs. Therefore, it is essential to note that these words and expressions have the same connotation and definition.

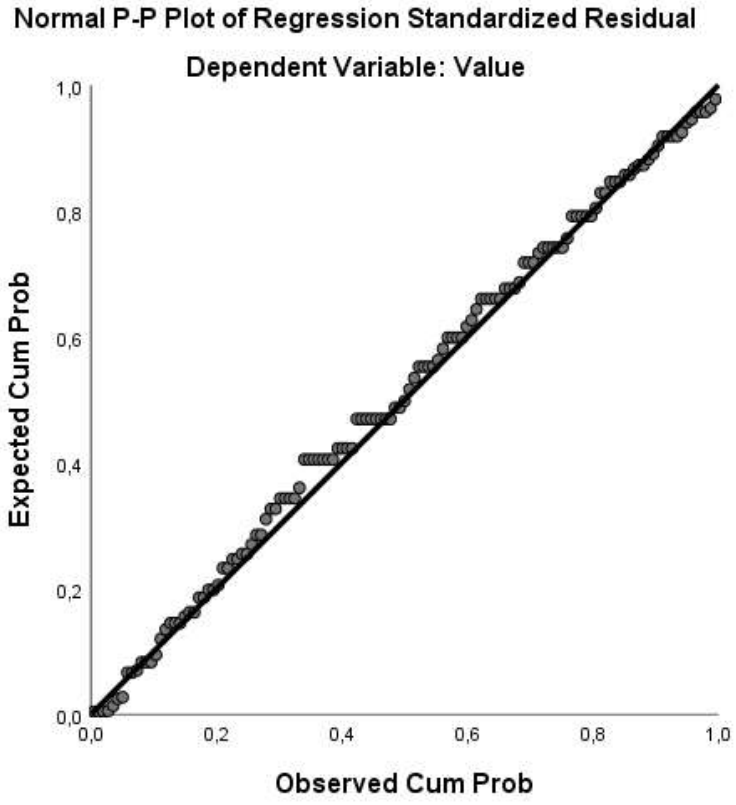

Figure 12 - Normal P-P of regression standardized residual (value)

The verification of the assumptions and dataset for linear regression was also performed as described in the previous section, thus, it is necessary to conclude that the output is reliable and valid. For instance, the probability-probability plot (Figure 12) also shows a small deviation but the values follow the line.

The residual statistics table (Table 13) the extreme cases are close to 3 and -3, however, they do not exceed these values which supports the analysis of the graph illustrated above.

Residual Statistics[a]					
	Minimum	Maximum	Mean	Std. Deviation	N
Std. Residual	-2,620	2,003	0,000	0,996	131
Cook's Distance	0,000	0,096	0,008	0,014	131

a. Dependent Variable: Value

Table 13 - Residual statistics (value)

After this, it was possible to access and analyse the ANOVA results as also the scatter diagram, with the objective to test the null hypothesis, as illustrated below:

ANOVA[a]					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	0,050	1	0,500	0,302	0,583[b]
Residual	21,453	129	1,660		
Total	21,503	130			

a. Dependent Variable: Value

b. Predictors: (Constant), Total number of children

Table 14 - ANOVA (total number of children and value)

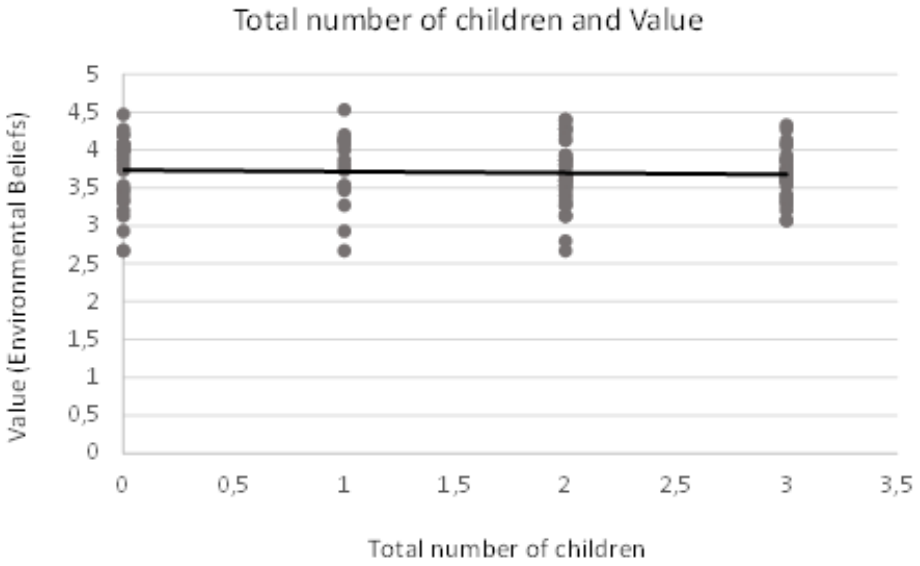

Figure 13 - Scatter plot (total number of children and value)

The ANOVA report showed that the result of the regression perform is not statistically significant (p = 0.583; Table 14). Furthermore, the analysis of scatter plot (Figure 13) also reinforced the assumption described as there is no evident association between the variables since it is not possible to identify any particular pattern or relationship between the total number of children and value.

Therefore, the **results have failed to reject the second null hypothesis**. It supports the conclusion that the reproductive motivation has no significant or positive influence on pro-environmental beliefs among Generation Y consumers.

To summarize, the test results failed to reject the null hypothesis of this study, as it is evident that there is no correlation between the variables. In other terms, pro-environmental action and values are not affected by reproductive motivation since the data collected did not provide enough evidence to assume that the interrelationship between the variables exists.

5.5 Reproducing previous study: The value-action gap

One of the purposes of the research conducted by Pickett-Baker and Ozaki (2008), was to study the pro-environmental value-action gap and investigate if

the independent variable (i.e. value) would affect the dependent variable (i.e. action). The results have shown that action is not significantly affected by value.

The authors (Pickett-Baker and Ozaki, 2008) defined the variable ‘value’ as ‘environmental belief’ and ‘action’ as ‘environmental behaviour’. Due to this fact, the same nomenclature is used in this analysis.

To investigate the association between the variables and to verify whether the result and the findings of this study differ from the results of the previous research, a scatter diagram and linear regression of value against action were reproduced.

Figure 14 - Scatter plot (value and action)

The scatter plot (Figure 14) shows that there is a slightly positive linear association between the variables. With the purpose to further investigate this correlation and test the results, ANOVA was also performed. The report below indicates that the result is statistically significant ($p = 0.014$; Table 15).

ANOVA[a]					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1,898	1	1,898	4,6081	0,014[b]
Residual	39,199	129	0,304		
Total	41,097	130			

a. Dependent Variable: Action

b. Predictors: (Constant), Value

Table 15 - ANOVA (value and action)

Therefore, an interesting finding is that, in contrast with the results shown in the previous study (for reference: p = 0.1665), this research indicates that action (i.e. environmental behaviour) is affected by value (i.e. environmental belief). However, it is important to recognise that there is a positive linear relationship between the variables but the association is not strong. Along with the scatter diagram interpretation, the low value of Pearson Correlation (correlation coefficient = 0.215; Table 16) also indicates that there is a fairly strong positive relationship between the variables.

Correlations			
		Action	Value
Action	Pearson Correlation	1	0,215
	Sig. (2-tailed)		0,014
	N		131
Value	Pearson Correlation	0,215	1
	Sig. (2-tailed)	0,014	
	N	131	131

Table 16 - Correlations (value and action)

This chapter provided an overview related to the primary data collection. It included not only the description, but also the analysis of the research results. The next chapter aims to associate this study's findings with contemporary literature, present the limitations and provide practical considerations.

Chapter VI: Discussion

6.1 Introduction

The prime objective of this chapter is to discuss and synthesise the main research findings taking into consideration the broad context presented by scholars in the extant literature. Furthermore, it addresses the study's limitations and practical considerations. To summarize, it shows the contribution of the present study to knowledge and its implications by evaluating conflicting results and discussing unexpected findings.

6.1.1 Generation Y reproductive motivation

The main objective of this study was to further investigate millennials' reproductive motivation and determine whether high levels of the reproductive motivation lessen the difference between pro-environmental values and action. Thus, the research allowed the author to answer the research question: *Is reproductive motivation a factor that influences pro-environmental action and values among Generation Y consumers?*

After analysing the results from the data collected, it was concluded that reproductive motivation does not affect people's pro-environmental purchasing behaviour and beliefs. In other terms, the number of children an individual aims to have, does not appear to be associated with their ecological values and buying choices towards green products or services. Due to this fact, the author failed to reject both null hypotheses related to the research question:

a) Reproductive motivation has no significant or positive influence on pro-environmental behaviour among Generation Y consumers.
b) Reproductive motivation has no significant or positive influence on pro-environmental beliefs among Generation Y consumers.

Therefore, it can be considered that the reproductive motivation has the same effect as the actual parenthood aspect. It also follows the idea previously suggested by Torgler et al. (2008) and McCright (2010), which explains that the childbirth does not guarantee that the willingness to buy sustainable products or services will increase.

This research supports the idea that there is no strong and direct correlation between ecological attitude as also beliefs and the quantity of children a person wants to have. Thomas et al. (2018) indicates that after the birth of the first child, parents with high levels of pro-environmental values tend to engage more in sustainable actions.

That said, the assumption based on the fact that procreation would increase the environmental concern because parents would consider the legacy left to their descendants (i.e. legacy hypothesis) must be examined in more detail. According to Thomas et al. (2018), this hypothesis takes into consideration that a person would be more concern about the environment and behave accordingly to preserve the future of the planet. This topic will be addressed in the following chapters.

6.1.2 Environmental concern and attitude: the value-action gap

The rationale of this research started from the environmental value-action gap concept. It basically explains that people are concerned about the environment and the consequences of human harmful activities, but at the same time, their attitudes do not reflect their level of concern.

As stated previously in the second chapter, many scholars suggest that the association between the individual's environmental concern and the actual willingness to consume pro-environmental products is weak (Winski, 1991; Mainieri et al., 1997; Bamberg, 2003; Mostafa, 2007).

Therefore, in order to further investigate this topic, the present study attempted to replicate the research conducted by Pickett-Baker and Ozaki (2008) in which

the results have shown that action is not significantly affected by value. Those authors indicated that pro-environmental concern is not a significant driver in order to influence the purchasing behaviour and willingness to engage in sustainable actions.

In contrast to their research, the results of this study suggest that, in fact, there is a correlation between environmental behaviour and environmental beliefs.

With two contradictory results, it is important to understand why it happened. The first premise is that the sample size might have influenced the results as the previous study collected data from 52 respondents, whereas the present study obtained 131 responses. The second assumption is related to the age range. This study focused on collecting data from Millennials (i.e. age range of 20 to 40) and the previous study established the age range of 26 to 65.

Perhaps the factor described above is the most influential aspect that caused the results discrepancy. Many studies have shown that Generation Y is the most environmentally conscious and concerned if compared to the other generations (Vermillion and Peart, 2010). Moreover, millennials are recognised due to their purchasing habits (Bucic, Harris and Arli, 2012) which tend towards more sustainable options (Bedard and Tolmie, 2018).

Lastly, the coding aspect might have been different since the meaning of three statements are not clear. As previously explained, one of the dilemmas faced by the author when coding the data, was the interpretation of statements 4, 6 and 14 of section 3 (Table 4). Thus, it is possible that in the previous study each one of those statements might have contrasting values, which in turn, could justify the results' antithesis.

To summarize, there is a relationship between the individual's values and action, however, this correlation is not strong. It is important to state that, although the p-value is equal to 0.014 (Table 15), the value of correlation coefficient is closer to 0 (correlation coefficient = 0.215; Table 16) which is also aligned with the interpretation of the scatter diagram, that in turn does not display an evident

pattern in the dataset. Therefore, it can be concluded that although the environmental concern is an aspect that has been increasing over the years, the difference between value and action still exists (Kilbourne and Pickett, 2008).

6.2 Limitations of the study

In the current paper the author examined possible variables that have the capability to drive the sustainable behaviour. However, there are many other elements, such as socio-demographic, psychological, and situational factors that must be addressed when analysing the pro-environmental value-action gap.

Moreover, this study collected data from individuals from different countries, cultures, languages and economic classes but not have the sample size to consider such this information, as the degrees of freedom for each subclass would have been too small. This is a limitation because the context in which the respondents live might affect the consistency of the results. This is a factor that must be taken into consideration to better understand this topic.

Furthermore, collecting the data only by the method chosen by the author can be considered as a limitation. The survey might not have accessed a complete and detailed scenario because the closed-ended questions do not provide in-depth information. The qualitative analysis was beyond the scope of this project.

Ultimately, there are the pre-determined (standard) questions to measure the endorsement of a pro-environmental world view and eco-friendly behaviour. This set of questions has been widely accepted by many researchers as a valuable tool for examining and measuring the subject. However, they may no longer be valid or essentially relevant because the global scenario has changed significantly since they were developed.

It is important to note that, overall the limitations outlined above did not have a substantial impact on the research results because it was possible to investigate the main question that guided the study and the research objectives were achieved.

6.3 Practical considerations

The empirical findings of this research enabled the author to provide insights into the well-known discussion about the pro-environmental value-action gap and also develop a recommendation within the scope of this study. Therefore, it is necessary to address relevant practical considerations to the field.

It is known that marketing is a powerful tool that control individual's values and buying habits (Jisana, 2014). It commonly leads to unsustainable levels of consumption and consequently, production. Nevertheless, marketing strategies can also be used as a mechanism in order to mitigate environmental issues with the objective to reduce the impacts derived from the production system.

The practical recommendation is to include the reproductive motivation factor in discussions when developing marketing strategies for sustainable products or services. Although this study does not indicate that reproductive motivation has significant or positive influence on pro-environmental beliefs and behaviour among Generation Y consumers, it can be a fundamental appeal when targeting and placing green products or services. It follows the premise that this approach could possibly be considered as a key point to convert the consumers towards pro-environmental buying choices.

Comprehending the main elements that shape Generation Y wants and needs is extremely important in developing a strong and convincing marketing and communication strategy. This helps to determine behaviour and, consequently, increased the willingness to opt for more sustainable options.

The purpose of this chapter was to provide an in-depth discussion about the main findings of this research. It examined the results related to the research problem as also explained how and why the results deviate from study previously reported in the literature. Finally, it addressed the research limitations and provided practical considerations.

Chapter VII: Conclusion and Recommendations

7.1 Conclusion

Over the past decades, sustainable development and environmental issues have been the focus of many discussions due to its urgency and importance (Mostafa, 2013; Young et al., 2010). The current economic systems lead to unsustainable consumerism (Martin and Schouten, 2014), and it makes the road to a pro-environmental world even more difficult.

However, green purchasing behaviour is considered as an effective solution for lessening impacts and preventing further environmental and social damage (Ho, Dickinson and Chan, 2010). Furthermore, the Generation Y is environmentally conscious (Vermillion and Peart, 2010) and due to its significant participation in the economy, it can influence supply and demand.

This thesis aimed to investigate the relationship between reproductive motivation and pro-environmental actions and values in Generation Y. Upon further analysis of the data collected, it was possible to answer the research question: *Is reproductive motivation a factor that influences pro-environmental action and values among Generation Y consumers?*

Due to the fact that both null hypotheses were acknowledged (i.e. Reproductive motivation has no significant or positive influence on pro-environmental behaviour and beliefs among Generation Y consumers), it is possible to conclude that reproductive motivation is not a factor that influences pro-environmental action and values among millennials.

The author also attempted to replicate the findings of previous research on pro-environmental attitudes and beliefs to examine the value-action gap. Interestingly, the results indicate that the environmental values can guide individuals' actions towards green purchasing habits.

Therefore, as it was identified that pro-environmental beliefs have the power to shape Generation Y attitudes towards sustainability, it can be suggested that when developing marketing strategies, organisations and marketers could possibly utilise the reproductive motivation appeal in order to influence millennials values, which in turn, would influence their behavior within the ecological context. This aspect will be discussed in more detail in the section below.

Generation Y plays an important role in the world because it constitutes one of the most important parts of this sustainability game. Therefore, to mitigate the effects of the environmental crisis, it is necessary advance the understanding of millennials, assessing what drives them and how they can be effectively influenced to ensure that the path towards a sustainable world is attainable.

7.2 Recommendations for future research

After concluding this study and understanding its limitations, the author identified recommendations that are valuable for future research because they aim to aggregate the findings for Generation Y. The suggestions are outlined below:

- This study followed a quantitative approach. Nevertheless, it will be beneficial to conduct a qualitative research to obtain more in-depth knowledge and gain further insights into this topic. More specifically, it would be interesting to conduct a focus group Millennials to understand more about their emotional and behavioural response after being exposed by commercials that have their appeal focused on future generations and the importance of individual role to protect the environment.

- Additionally, future researcher should also investigate the relationship between reproductive motivation and personal norm (i.e. feeling of moral obligation and self-expectation, as suggested by Schwartz in 1977), as also examine whether personal norm can influence pro-environmental beliefs, which in turn, would direct their attitudes towards green purchasing options.

- Another important point is to conduct research that collects a significant amount of data from different countries. It is important to analyse the results according to each country because the cultural, sociodemographic, and contextual characteristics might have a different impact on the research results. For instance, the concept of sustainability and sustainable practices may differ according to each region taking into consideration the premise that environmental issues are not the same. Therefore, it would be important to identify and examine the main particularities of each nation.

- Finally, the author aimed to investigate the variables that could have a beneficial impact on Generation Y behaviour and environmental concern. However, the study did not take into consideration the elements that constitute the barrier that prevents them from acting more sustainably. Therefore, a study on what are the constraints to pro-environmental behaviour that have an impact on the value-action gap in Generation Y would also contribute to knowledge of the subject.

Reference List

Ahn, J., Koo, D. and Chang, H. (2012) 'Different impacts of normative influences on pro-environmental purchasing behavior explained by differences in individual characteristics', *Journal of Global Scholars of Marketing Science*. 22.

Ajzen, I. (1991) 'The Theory of Planned Behavior', *Organizational Behavior and Human Decision Processes*, 50, pp. 179-211.

Ali, A., Khan, A.A. and Ahmed, I. (2011) 'Determinants of Pakistani consumers' green purchasing behavior: Some Insights from a developing country', *International Journal of Business and Social Science*, 2(3), pp. 217-226.

Alvesson, M. and Sköldberg, K. (2000) *Reflexive Methodology: New Vistas for Qualitative Research.* London: Sage.

Bain, P.G., Milfont, T.L., Kashima, Y., Bilewicz, M, Doron, G., Garðarsdóttir, R.B., et al. (2015) 'Co-benefits of addressing climate change can motivate action around the world', *Nature Climate Change*, 6(2).

Bamberg, S. (2003) 'How Does Environmental Concern Influence Specific Environmentally Related Behaviors? A New Answer to an Old Question', *Journal of Environmental Psychology*, 23, pp. 21-32.

Bedard, S. and Tolmie, C. (2018) 'Millennials' green consumption behaviour: exploring the role of social media', *Corporate Social Responsibility and Environmental Management*, 25, pp. 1388-1396.

Blaikie, N.W.H. (2000) *Designing social research: The logic of anticipation*. UK: Blackwell Publishing.

Blocker, T.J. and Eckberg, D.L. (1997) ‘Gender and environmentalism: Results from the 1993 General Social Survey’, *Social Science Quarterly*, 78(4), pp. 841–858.

Boztepe, A. (2012) ‘Green marketing and its impact on consumer buying behavior’, *European Journal of Economic and Political Studies*, 5(1), pp. 5-21.

Bryman, A. and Bell, E. (2015) *Business Research Methods.* 4th ed. Oxford: Oxford University Press.

Bucic, T., Harris, J., and Arli, D. (2012) ‘Ethical Consumers Among the Millennials: A Cross-National Study’, *Journal of Business Ethics*, 110(1), pp. 113-131.

Carbonaro, M. and Bainbridge, J. (2000) ‘Design and development of a process for web-based survey research’, *The Alberta Journal of Educational Research*, 46(4), pp. 392-394.

Chaiklin, H. (2011) ‘Attitudes, Behavior, and Social Practice’, *The Journal of Sociology & Social Welfare*, 38.

Chan, R. and Lau, L. (2004) ‘The Effectiveness of Environmental Claims among Chinese Consumers: Influences of Claim Type, Country Disposition and Ecocentric Orientation’, *Journal of Marketing Management*, 20(3-4), pp. 273-319.

Chan, Y.Y.Y. and Ngai, E.W.T. (2011), ‘Conceptualising electronic word of mouth activity: An input-process-output perspective’, *Marketing Intelligence & Planning*, 29(5), pp. 488-516.

Cherian, J. and Jacob, J. (2012) ‘Green Marketing: A Study of Consumers' Attitude towards Environment Friendly Products’, *Asian Social Science*, 8.

Cherry, K. (2020) *Attitudes and Behavior in Psychology*. Available at: https://www.verywellmind.com/attitudes-how-they-form-change-shape-behavior-2795897#attitudes-and-behavior [Accessed 3 August 2020].

Connelly, L. M. (2014) 'Ethical considerations in research studies', *MedSurg Nursing*, 23 (1), pp. 54.

Coon, D. and Mitterer, J.O. (2010) *Introduction to Psychology: Gateways to Mind and Behavior With Concept Maps*. Belmont, CA: Wadsworth.

Cooper, T. (2000) 'Product Development Implications of Sustainable Consumption', *The Design Journal*, 3, pp. 46-57.

Crosby, L. A., Gill, J. D. and Taylor, J. R. (1981) 'Consumer -voter behavior in the passage of the Michigan container law', *Journal of Marketing*, 45(2), pp. 19-32.
Crotty, M. (1998) *The Foundations of Social Research*. London: Sage.

Darnton, A. (2004) 'Driving Public Behaviours for Sustainable Lifestyles, *Department for Environment*, Food and Rural Affairs (London).

Davidson, D.J., and Freudenburg, W.R. (1996) 'Gender and environmental risk concerns', *Environment and Behavior*, 28, pp. 302-339.

Dean, D.H. and J.M. Lang (2008) 'Comparing three signals of service quality', *Journal of Services Marketing*, 22(1), pp. 48-58.

Driessen, P.H. (2005) *Green product innovation strategy.* Available at: https://research.tilburguniversity.edu/en/publications/green-product-innovation-strategy [Accessed 12 July 2020].

Dunlap, R. and Jones, R. (2002) 'Environmental Concern: Conceptual and Measurement Issues', *Handbook of Environmental Sociology,* Wesport CN: Greenwood Press, pp. 484-524.

Dunlap, R.E. and Mertig, A.G. (1995) ‘Global concern for the environment: Is affluence a prerequisite?’, *Journal of Social Issues*, 51(4), pp. 121-137.

Dunlap, R.E., Van Liere, K.D., Mertig, A.G. and Jones, R.E. (2000) ‘Measuring endorsement of the new ecological paradigm: A revised NEP scale’, *Journal of Social Issues*, 56(3), pp. 425-442.

Dunlap, R.E., Van Liere, K.D., Mertig, A.G. and Jones, R.E. (2000) ‘Measuring endorsement of the new ecological paradigm: A revised NEP scale’, *Journal of Social Issues*, 56(3), pp. 425–442.

Elkington, J. (1994) ‘Towards the Sustainable Corporation: Win-Win-Win Business Strategies for Sustainable Development’, *California Management Review*, 36(2), pp. 90-100.

Ellen, P., Wiener, J. and Cobb-Walgren, C. (1991) ‘The Role of Perceived Consumer Effectiveness in Motivating Environmentally Conscious Behaviors’, *Journal of Public Policy & Marketing*, 10, pp. 102-117.

Erikson, E.H. (1963) *Childhood and society*. New York: Norton.

Flick, U. (2011) *Introducing research methodology: A beginner’s guide to doing a research project.* London: Sage.

Fuller, D. (1999) *Sustainable Marketing: Managerial - Ecological Issues*. Thousand Oaks: SAGE.

Gapper, J. (2018) *How millennials became the world’s most powerful consumers*. Available at:https://www.ft.com/content/194cd1c8-6583-11e8-a39d-4df188287fff [Accessed 18 October 2019].

Gill, J.D., Crosby, L.A. and Taylor, J.R. (1986), ‘Ecological concern, attitudes and social norms in voting behaviour’, *Public Opinion Quarterly*, 50, pp. 537-54.

Ginsberg, J. and Bloom, P. (2004) ‘Choosing the Right Green Marketing Strategy’, *MIT Sloan Management Review*. 46.

Gruber, V. and Schlegelmilch, B. B. (2014) ‘How Techniques of Neutralization Legitimize Norm- and Attitude-Inconsistent Consumer Behavior’, *Journal of Business Ethics*, 121 (1), pp. 1-17.

Heale, R. and Twycross, A. (2015) ‘Validity and reliability in quantitative research’, *Evidence-Based Nursing*, 18, pp. 66-67.

Hemsley-Brown J., Oplatka I. (2016) ‘Personal Influences on Consumer Behaviour’, *Higher Education Consumer Choice*, pp 44-64.

Ho, L. W. P., Dickinson, N. M., & Chan, G. Y. S. (2010) ‘Green procurement in the Asian public sector and the Hong Kong private sector’, *Natural Resources Forum*, 34(1), pp. 24-38.

Hoaglin, D.C. and Iglewicz, B. (1987) ‘Fine-Tuning Some Resistant Rules for Outlier Labeling’, *Journal of the American Statistical Association*, 82(400), pp. 1147-1149.

Hood, M. (2012) ‘The big shift: the next generation has arrived’, *Direct Selling News*, January, pp. 10-14.

Hopper, E. (2020) *Maslow's Hierarchy of Needs Explained*. Available at: https://www.thoughtco.com/maslows-hierarchy-of-needs-4582571 [Accessed 27 July 2020].

Ilieva, J., Baron, S. and Healey, H.M. (2002) ‘Online surveys in marketing research: pros and cons’, *International Journal of Market Research*, 44(3), pp. 362-380.

Jackson, T. (2005) 'Motivating Sustainable Consumption; a Review of Evidence on Consumer Behaviour and Behavioural Change', *Centre for Environmental Strategy*, University of Surrey.

Jisana, T. K. (2014) 'Consumer Behaviour Model: An Overview', *Sai Om Journal of Commerce and Management*,1(5), pp. 34-43.

Kaplan, S. (2000) 'Human nature and environmentally responsible behavior', *Journal of Social Issues*, 56(3), pp. 491-508.

Karmarkar, U. and Bollinger, B. (2015) 'BYOB: How Bringing your Own Shopping Bags Leads to Treating Yourself, and the Environment', *Journal of Marketing*, 79.

Katz, D. (1960) 'The Public Opinion Quarterly', *Special Issue: Attitude Change*, 24(2), pp. 163-204.

Kaur, S. (2014) 'Impact of Green Marketing on Consumer's Buying Behavior', *Abhinav National Monthly Refereed Journal of Research in Commerce & Management*. 3(5), pp. 1-8.

Kelemen, M. and Rumens, N. (2008) *An Introduction to Critical Management Research.* London: Sage.

Ketokivi, M. and Mantere, S. (2010) 'Two strategies for inductive reasoning in organizational research', *Academy of Management Review*, 35(2), pp. 315–33.

Kilbourne, W. and Pickett, G. (2008) 'How Materialism Affects Environmental Beliefs, Concern, and Environmentally Responsible Behavior', *Journal of Business Research*, 61, pp. 885-893.

Kilbourne, W., and Pickett, G. (2008) 'How materialism affects environmental beliefs, concern, and environmentally responsible behavior', *Journal of Business Research*, 61(9), pp. 885-893.

Kim, Y. and Choi, S. M. (2005) ‘Antecedents of green purchase behaviour: an examination of collectivism, environmental concern, and PCE’, *Advances in Consumer Research*, 32, pp. 592-599.

Knight, K. W. and Messer, B. L. (2012) ‘Environmental concern in cross national perspective: the effects of affluence, environmental degradation, and world society’, *Social Science Quarterly*, 93(2), pp. 521-537.

Kotler, P. and Armstrong, G. (2012) *Principles of Marketing*. 14th edn. Harlow: Pearson.

Laerd statistics (2018) *Linear Regression Analysis using SPSS Statistics.* Available at: https://statistics.laerd.com/spss-tutorials/linear-regression-using-spss-statistics.php [Accessed 31 July 2020].

Lai, C. & Cheng, E. (2015) ‘Green purchase behavior of undergraduate students in Hong Kong’, *The Social Science Journal*, 53, pp. 10.

Laroche, M., Bergeron, J. and Barbaro-Forleo, G. (2001) ‘Targeting Consumers Who Are Willing to Pay More for Environmentally Friendly Products’, *Journal of Consumer Marketing*, 18, pp. 503-520.

Lefever, S., Dal, M. and Matthíasdóttir, Á. (2006) ‘Online data collection in academic research: Advantages and limitations’, *British Journal of Educational Technology*, 38, pp. 574-582.

Lin, A.C. (1998) ‘Bridging positivist and interpretivist approaches to qualitative methods’, *Policy Studies Journal*, 26(1), pp. 162-180.

Lloyd, T., Shaffer, M. L., Stetter, C., Widome, M. D., Repke, J., Weitekamp, M. R., Eslinger, P. J., Bargainnier, S. S. and Paul, I. M. (2013) ‘Health knowledge among the millennial generation’, *Journal of Public Health Research*, 2(1).

Lloyd, T., Shaffer, M., Christy, S., Widome, M., Repke, J., Weitekamp, M., Eslinger, P., Bargainnier, S. and Paul, I. (2013) 'Health Knowledge Among the Millennial Generation', *Journal of public health research*, 2, pp. 38-41.

Lu, L., Bock, D. and Joseph, M. (2013) 'Green marketing: what the Millennials buy', *Journal of Business Strategy*, 34(6), pp. 3-10.

Mackenzie, N. and Knipe, S. (2006) 'Research dilemmas: Paradigms, methods and methodology', *Issues in Educational Research*, 16(2), pp.193-205.

Mainieri, T., Barnett, E.G., Valdero, T. R., Unipan, J.B. and Osamp, S. (1997) 'Green buying: The influence of environmental concern on consumer behaviour', *The Journal of Social Psychology*, 137(2), pp. 189-204.

Martin, D. and Schouten, J. (2012) 'The answer is sustainable marketing, when the question is: What can we do?', *Recherche et Applications en Marketing* (English Edition), 29, pp. 107-109.

Martin, D.M. and Schouten J.W. (2012) *Sustainable marketing*. Upper Saddle River, NJ: Pearson Prentice Hall.

Maslow, A. (1943) 'A theory of human motivation', *Psychological Review*, 50(4), pp. 370-96.

Matz, C. M. (1999) *Administration of Web versus paper surveys: mode effects and response rates*. Master's thesis, University of North Carolina.

McCright, A.M. (2010) 'The effects of gender on climate change knowledge and concern in the American public', *Population and Environment*, 32, pp. 66–87.

McLeod, S. A. (2007) *Maslow's Hierarchy of Needs*. Available at: http://www.simplypsychology.org/maslow.html [Accessed 1 August 2020].

Meyer, A. (2015) ‘Does education increase pro-environmental behavior? Evidence from Europe’, *Ecological Economics,* Elsevier, 116(C), pp. 108-121.

Milfont, T. L., and Demarque, C. (2015) ‘Understanding environmental issues with temporal lenses: Issues of temporality and individual differences’, *Time Perspective Theory; Review, Research and Application*, pp. 371-383.

Milfont, T.L., Harré, N., Sibley, C.G. and Duckitt J. (2012) ‘The climate-change dilemma: Examining the association between parental status and political party support’, *Journal of Applied Social Psychology*, 42, pp. 2386-2410.

Montague, J. and Mukherjee, A. (2010) ‘Marketing Green Products: What Really Matters?’, *Health Care and Pharmaceutical Management*, pp. 443-441.

Mostafa, M.M. (2007) ‘Gender differences in Egyptian consumers’ green purchase behaviour: the effects of environmental knowledge, concern and attitude’, *International Journal of Consumer Studies*, 31, pp. 220-229.

Mostafa, M.M. (2013) ‘More than words: Social networks’ text mining for consumer brand sentiments’, *Expert Systems with Applications*, 40(10), pp. 4241-4251.

Newman, I. and Ridenour, C. (1998) ‘Qualitative-Quantitative Research Methodology: Exploring the Interactive Continuum’, *Educational Leadership Faculty Publications*, 122.

Ottman, J.A. (1998) *Green Marketing: Opportunity for Innovation.* 2nd edn. Mcgraw Hill.

PayScale (2012) *Gen Y on the Job*. Available at: https://www.payscale.com/gen-y-education [Accessed 8 August 2020].

Pickett-Baker, J. and Ozaki, R. (2008) ‘Pro-environmental products: marketing influence on consumer purchase decision’, *Journal of Consumer Marketing*, 25 (5), pp. 281-293.

Polonsky, M. J. (1994) ‘An Introduction to Green Marketing’, *Electronic Green Journal*, 1, pp. 2-3.

Poortinga, W., Steg, L. and Vlek C. (2004) ‘Values, environmental concern, and environmental behavior: a study into household energy use’, Environment and Behavior, 36, pp. 70-93.

Porter, M. and Kramer, M. (2006) ‘Strategy and Society: The Link between Competitive Advantage and Corporate Social Responsibility’, *Harvard Business Review,* 84(12), pp. 78-92.

Rahbar, E. and Wahid, N. (2011) ‘Investigation of green marketing tools' effect on consumers' purchase behavior’, *Business Strategy Series*, 12, pp. 73-83.

Robson, C. (2011) *Real World Research*. 3rd edn. West Sussex: John Wiley & Sons Limited.

Russell, D. (2014) *Introduction to Quantitative Data Analysis*. Available at: https://www.youtube.com/watch?v=k5XR3Ari7-0 [Accessed 17 July 2020].

Ryan and Deci (2000) ‘Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions’, *Contemporary Educational Psychology,* 25, pp. 54-67.

Ryan, A.B. (2006) ‘Post-Positivist Approaches to Research. In: Researching and Writing your thesis: a guide for postgraduate students’, *MACE: Maynooth Adult and Community Education*, pp. 12-26.

Sarigollu, E. (2009) ‘A Cross-Country Exploration of Environmental Attitudes’, *Environment and Behavior*, 41(3), pp. 365-386.

Saunders, M. and Lewis, P. & Thornhill, A. (2015) *Research Methods for Business Students*. 7th Edition, Pearson.

Saunders, M., Lewis, P. and Thornhill, A. (2007) *Research Methods for Business Students*. 4th Edition, Financial Times Prentice Hall, Edinburgh Gate, Harlow.
Saunders, Mark & Lewis, P. & Thornhill, A. (2009) *Understanding research philosophies and approaches. Research Methods for Business Students*, 4, pp. 106-135.

Schulz, J. (2012) *Analysing Questionnaires.* Available at: https://www.youtube.com/watch?v=c5ClF8RlGb4 [Accessed 17 July 2020].

Spehar, C. (2006) 'Marketing to teens: Hip 2 B green', *Natural Foods Merchandiser*, 27(10), pp. 45-56.

Tatic, K and Cinjarevic, M. (2010) 'Relationship Between Environmental Concern And Green Purchasing Behavior', *Interdisciplinary Management Research,* 6, pp. 801-810.

The Nielsen Company (2015) *The Sustainability Imperative*. Available at: https://www.nielsen.com/wpcontent/uploads/sites/3/2019/04/Global20Sustainability20Report_October202015.pdf [Accessed 18 January 2020].

Thomas, G.O., Fisher, R., Whitmarsh, L., Milfont, T.L., and Poortinga, W. (2018) 'The impact of parenthood on environmental attitudes and behaviour: a longitudinal investigation of the legacy hypothesis', *Population and environment*, 39(3), pp. 261-276.

Thompson, S., Michaelson, J., Abdallah, S., Johnson, V., Morris, D., Riley, K. and Simms, A. (2011) *Moments of change" as opportunities for influencing behaviour*. London: Defra.

Torgler, B., Garcia Valinas, M. A., & Macintyre, A. (2008) 'Differences in preferences towards the environment: the impact of gender, age and parental effect', *FEEM Working*, 18.

Vermillion, J. and Peart, J. (2010) 'Green Marketing: Making Sense of the Situation', *Proceeding of the Academy of Marketing Studies*, 15(1), 68-72.

Vogt, P. and Johnson, R. (2011) *Dictionary of Statistics & Methodology: A Nontechnical Guide for The Social Sciences.* 4th edn. London: Sage.

Wedewer, L. (2011) *Mindless: Marketing an Unsustainable Future*. Available at: https://www.triplepundit.com/story/2011/mindless-marketing-unsustainable-future/72751 [Accessed 6 August 2020].

White, M. J. and Hunter, L. M. (2009) 'Public perception of environmental issues in a developing setting: environmental concern in Coastal Ghana', *Social Science Quarterly*, 90(4), pp. 960-982

Yin, R. K. (2014) *Case Study Research: Design and methods.* 5th edn. London: Sage.

Young, W., Hwang, K., McDonald, S., Oates, C.J. (2010) 'Sustainable consumption: green consumer behaviour when purchasing products', *Sustainable Development*, 18(1), pp. 20-31.

Zhou, M. (2013) 'A multidimensional analysis of public environmental concern in Canada', *Canadian Review of Sociology*, 50(4), pp. 453-481.