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Master's degree

The relationship of internal, social and external determinants towards the green purchase intention of German Generation Y for fast moving consumer goods

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Svenja Bouwmann          Ilona Schnieder
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Abstract

**Purpose** – The purpose of this thesis is to test the relationship of internal and social determinants (environmental attitude, social/subjective norms and perceived behavioural control) as well as external determinants (green marketing tools) towards the green purchase intention of German Generation Y for fast moving consumer goods (FMCGs).

**Design/methodology/approach** – An online questionnaire was distributed to people of the German Generation Y (aged between 21 and 37) using non-probability sampling by means of volunteer and convenient sampling. Results of 401 completed questionnaires were analysed using correlation, multiple linear regression and moderated regression analysis.

**Findings** – Significant and positive relationships were found between environmental attitude, social/subjective norms, perceived behavioural control and eco-labelling towards the green purchase intention of German Generation Y for FMCGs. A significantly negative relationship was detected between price sensitivity and green purchase intention. Eco-labelling and price sensitivity were not moderating the relationship between environmental attitude and green purchase intention. Demographic factors had hardly any influence on the green purchase intention.

**Practical implications** – German Generation Y depicts good potential as key market for green FMCGs. Those consumer goods especially when eco-labelled should be included in producers’ and retailers’ portfolios. Internal, social and external factors are considerable for the marketing strategy by addressing environmental concerns, social norms, responsibility towards society and emphasising customer’s own control of purchasing green while pricing green FMCGs rather not higher than 10% than conventional product prices.

**Originality/value** – This paper contributes to the under-researched field of determining factors for the green purchase intention of Generation Y in Europe, while closing the gap for the unexplored context of Generation Y in Germany.

**Keywords:** German Generation Y, green marketing, purchase intention, internal, social and external determinants, FMCGs

**Paper type:** Research paper
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<tbody>
<tr>
<td>α</td>
<td>Cronbach’s alpha, measure of internal consistency</td>
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<tr>
<td>ANOVA</td>
<td>Analysis of Variance</td>
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<tr>
<td>β</td>
<td>Unstandardised coefficient</td>
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<tr>
<td>DV</td>
<td>Dependent variable</td>
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<tr>
<td>FMCG</td>
<td>Fast-moving consumer good</td>
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<td>IBM SPSS 24</td>
<td>Statistical Package for the Social Science, statistical software programme</td>
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<tr>
<td>IV</td>
<td>Independent variable</td>
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<tr>
<td>M</td>
<td>Mean, average</td>
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<tr>
<td>n</td>
<td>Number of valid observations</td>
</tr>
<tr>
<td>p</td>
<td>Probability value measuring significance level</td>
</tr>
<tr>
<td>r</td>
<td>Pearson’s r, correlation coefficient</td>
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<tr>
<td>R²</td>
<td>R-squared, coefficient of multiple determination for multiple regression</td>
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<tr>
<td>SD</td>
<td>Standard deviation</td>
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<tr>
<td>Sig.</td>
<td>Significance level</td>
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<tr>
<td>TPB</td>
<td>Theory of Planned Behaviour</td>
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<td>TRA</td>
<td>Theory of Reasoned Action</td>
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<tr>
<td>VIF</td>
<td>Variance Inflation Factor, collinearity diagnostic factor that helps identifying multicollinearity between measured concepts</td>
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1 Introduction

1.1 Background to the topic

The vast global development of economies and technologies as well as the increasing global population and rigorous consumption patterns have created negative impacts on the environment over time and resulted in major environmental decays such as climate change, pollution or deforestation (Prothero, 1996; Chekima, Wafa, Igau, Chekima, & Sondoh, 2016).

Consequently, environmental awareness has sporadically become prominent during the 1970s and then later on in the 1990s, the “Earth decade” (Prothero, 1996). However, these phenomena of the ‘70s and ‘90s ebbed quickly (Titterington et al., as cited in Akehurst, Afonso & Martins Gonçalves, 2012), and more recently a growing environmental concern arose again (Furlow, 2010). With increasing public’s environmental concern, new ecological ethics were established which have concerned not only politics, but have also increased people’s environmental awareness (Jang, Kim & Bonn, 2011) and gradually became a trend that changed individuals’ consumption behaviour towards a more sustainable direction (Özlem, Herrmann-Linß, Friedrich & Baumgarth, 2015). Thus, a movement towards more environmentally friendly lifestyles and attempts to green consumption behaviour could be observed, which however is still evolving (Cherian & Jacob, 2012). In response to the public’s pro-environmental development many businesses started offering green products and services (Dangelico & Pujari, 2010) as well as engaged in green supply chain management (Wang & Chan, 2013) to not only convene consumer needs and drive sustainable consumption behaviour (Jain & Kaur, 2004), but also to adapt to legislative pressure, Singh and Pandey (2012) point out.

The term green product broadly describes recyclable goods that will neither pollute the environment, nor deploy natural resources (D&B Reports, as cited in Shamdasani, Ong Chin-Lin & Richmond, 1993). More specifically it refers to products whose entire lifecycle has a minimum effect on the natural environment (OECD, 2009) and are claimed by producing and distributing companies to be e.g. environment-friendly, organic or bio-degradable (Kahle, as cited in Suki, 2013). Accordingly, external factors such as green marketing tools are used as a means to emphasise the environmental protection idea of presumable green products by a range of factors such as product design, sustainable packaging (Singh & Pandey, 2012; Wu & Chen, 2014) or green branding and eco-labelling. Hereby, companies not only aim to appeal to an increasing environmentally-conscious customer segment (Furlow, 2010), but also to advance customers’ willingness to buy green products (Chu & Chen, 2012). Therefore, green...
*purchase intention* describes customers’ willingness and likelihood to favour environmentally friendly goods over regular products in their purchase considerations (Rashid, 2009).

Next to the possible effect of external variables, similarly academics have confirmed *internal and social variables* such as environmental attitude, subjective norms, reference groups or demographics to be related to environmental buying behaviour (Paço, Alves, Shiel, & Filho, 2013; Synodinos, 2014; Joshi & Rahmann, 2015b). Hereby, *Ajzen’s Theory of Planned Behaviour (TPB)* has been widely applied in psychology and social sciences to explain the influence of consumer’s internal and social variables on their green purchase intention (Kanonuhwa & Chimunchecka, 2014; Synodinos, 2014; Din, Wanni, & Sehar, 2016).

### 1.2 Research gap

When reviewing academic literature, it becomes evident that because of the rising environmental awareness among consumers, the topic of customers’ environmental behaviour has arisen as a research trend already 20 years ago (Follows & Jobber, 2000). Due to that, nowadays much literature exists on consumers’ green purchase intention (Lee, 2008) which is in line with the still rapidly growing interest in research about green marketing (Chen, 2011; Cervellon & Wernerfelt, 2012). Nonetheless, Joshi and Rahman (2015a) emphasise that there are solely few studies which investigate the factors that influence the green purchase intention of young consumers.

Hence, the investigation of the influencing factors for the green purchase intention of a young generational cohort becomes of interest. Since *Generation Y* – a cohort born between 1980 and 1995 (Mangelsdorf, 2015) – is seen as being an important green consumer market, which embodies the next key consumer segment (Atkinson & Rosenthal, 2014) and is ascribed the power to change consumer behaviour habits in the long term (Muposhi & Dhurup, 2016), it is of significance to investigate this generational cohort. Generation Y’s strong worldwide purchasing power, which was set to comprise approximately $2.45 trillion in 2015 already (Barnes & Lescault, 2014) is expected to pass the purchasing power of the Baby Boomers by 2017 (Business Wire, as cited in Muralidharan & Xue, 2016). Consequently, a rising interest of marketers in Generation Y has evolved (Muralidharan & Xue, 2016). Based on that, Kanonuhwa and Chimucheka (2014) recommend further quantitative research on how green marketing factors and environmental planned behaviour influence the consumer purchase intention of Generation Y, which makes this research even more interesting to conduct.
Following this suggestion, it is also significant to further regard the consideration of Joshi and Rahman (2015) who emphasise that investigating different cultural contexts might lead to distinct influencing factors on the green purchase intention. This consideration is verified by the empirical study of Liobikiene, Grinceviciene and Bernatoniene (2017) who discovered a different green consumer purchase behaviour for Austria compared to Lithuania. Also the empirical study by Liobikiene, Mandravickaite and Bernatoniene (2016) found statistically significant differences between the influencing factors for the green purchase behaviour of customers in different EU countries.

Thus, concerning the cultural contexts which have been investigated with regard to Generation Y, there is a current trend towards researching the green purchasing behaviour/intention in developing countries such as Malaysia (Din et al., 2016; Nizam, Rajiani, Mansor, Yahaya & Hoshino, 2014; Suki, 2013) and South Africa (Anvar & Venter, 2014; Muposhi & Dhurup, 2016; Synodinos, 2014). However, there appears to be a research gap especially for Europe with regard to influencing internal, social and external factors on the green purchase intention of Generation Y. Especially, the German context is of particular interest due to Germany having one of the strongest purchasing powers in Europe with €21,879 per capita in 2016 (GfK, 2016) and Generation Y representing 21% of the total German population in 2017 (Statistisches Bundesamt, 2015).

Concerning product type, this study focusses on the investigation of fast moving consumer goods (FMCGs)\(^1\) due to several reasons. Currently, the FMCGs industry is the world’s fourth largest industry (Kumar, Vohra & Dangi, 2016). FMCGs are not only bought and consumed on a daily basis (Dipp et al., as cited in Leahy, 2011), but also comparatively inexpensive products and thus affordable for everyone (Kumar et al., 2016). Hence, it is expected that every person of the German Generation Y experiences buying FMCGs frequently. Lastly, producers and retailers of FMCGs have strongly reacted in response to consumers’ increased environmental awareness by adapting their products for instance with the use of eco-labels (Igl & Kellner, 2017).

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\(^1\) Non-durable, utmost consumable, frequently bought and fastly sold retail products (Doyle, 2016).
1.3 Research aim and objectives
Based on the gap in literature outlined above, the research aim of this thesis is to test the relationship of internal and social determinants (environmental attitude, social/subjective norms and perceived behavioural control) as well as external determinants (green marketing tools) towards the green purchase intention of German Generation Y for FMCGs.

Hence, this research aim leads to the following research question, which the researchers intend to answer with this paper:

What is the relationship of internal, social and external determinants towards the green purchase intention of German Generation Y for fast moving consumer goods?

In order to reach the aim, the following research objectives serve as guidance and shall be fulfilled in the course of the research process:

- To determine the extent to which planned environmental behaviour (environmental attitude, social/subjective norms and perceived behavioural control) as internal and social determinants influence the green purchase intention of German Generation Y for FMCGs.
- To determine the extent to which different green marketing tools as external determinants influence the green purchase intention of German Generation Y for FMCGs.
- To investigate a possible influence of demographic characteristics as control variables on
  - the relationship between planned environmental behaviour and the green purchase intention of German Generation Y for FMCGs.
  - the relationship between green marketing tools and the green purchase intention of German Generation Y for FMCGs.
- To investigate a possible moderating effect of green marketing tools on the relationship between environmental attitude and green purchase intention of German Generation Y for FMCGs.
1.4 Relevance

Based on the previous sections, it appears that so far no research has been conducted with regard to factors influencing the green purchase intention of Generation Y in Germany, while even in the wider context of Generation Y in European countries only few studies deal with this topic. The academic relevance of this paper is therefore its contribution to close this research gap. Furthermore, a comparison and discussion of the results obtained in this research with findings from studies researching the Generation Y in different cultural contexts, will add understanding towards differences and similarities that exist between the German Generation Y market and Generation Y markets in different cultures concerning their green purchase intention.

Next to the academic relevance, this study intends to be of use for a company’s green consumer marketing purposes. Therein, the practical relevance lies in gaining an understanding of which and how green marketing tools influence the green purchase intention of the German Generation Y customer, leading towards clear recommendations about which factors should be particularly emphasised and to whom within an organisation’s green marketing communication for the German Generation Y. Thereby, possible differences in the factors influencing the green purchasing intention between people with different demographic characteristics within the generational cohort might be of further interest for marketers to be able to customise their marketing communication with greater precision. Considering the growing importance of Generation Y as a major consumer market in Germany, understanding their green purchase intention is valuable to design a suitable marketing strategy to push sales and market share of green products.

Besides marketers, this study can also be of practical relevance to retailers who can use it as aid when deciding on which products to include in their product range and portfolio based on the green marketing tools that exert an influence on the customer segment of Generation Y.
2 Conceptual framework
In this section of the thesis the researchers draw on findings in academic literature on the topics of Generation Y, its general characteristics and its features as green consumers, fast moving consumer goods (FMCGs), the green purchase intention as well as internal, social and external determinants of green purchase intention and demographic factors. Such conceptual framework provides a detailed overview of what is already known about these concepts. By means of it research hypotheses are developed which serve as the basis for primary research and are summarised in Figure 1.

2.1 Generation Y
Since this research investigates the factors influencing the green purchase intention of the target group German Generation Y, it is important to first define the concept Generation Y and determine the characteristics of this generation in general and as green consumers.

The concept of ‘generation’ can be approached from different angles with either a family-oriented, demographic, historical or sociological perspective (Urbain, Gonzales & Gall-Ely, 2013; Foster, 2013), which leads to the difficulty among scholars to determine one unifying definition, Foster (2013) explains. However, in marketing research the term ‘generation’ is mostly approached from a sociological perspective, according to Urbain et al. (2013) and Kotler, Armstrong, Wong & Saunders (2008), which is why this perspective serves as a basis of understanding for ‘generation’ in this research paper. The sociological approach refers to the assumption that people born during a specific time span share similar experiences of specific social and historical events, Mannheim adds (as cited in Benkendorff, Moscardo & Pendergast, 2011), which take place during their formative phase of life (Mangelsdorf, 2015). According to Ingelhart (as cited in Egri & Ralston, 2004) a generation thus forms a societal subculture with own values, a point of view supported by Parment (2011) who further adds that their mutual experiences also shape the generation’s behaviour.

2.1.1 Characteristics
With regard to Generation Y – also called Millennials or Echo Boomers (Din et al., 2016) – there is no definite birth year range determined in academic literature (Mangelsdorf, 2015). Scholars describe birth year periods of for example 1980-1990 (Parment, 2009), 1977-1994 (Sullivan & Heitmeyer, 2008) or 1981-1995 (Bund, 2014). For this research the determination of a birth year range from 1980 until 1995 by Mangelsdorf (2015) is followed, since this period refers to the German Generation Y context. Based on this range the German cohort
currently comprises around 17.2 million people, which equals 21% of the total German population (Statistisches Bundesamt, 2015).

In their formative phase, the German Generation Y experienced global warming, environmental pollution and fanatic terrorism as constant threats, Mangelsdorf (2015) explains and further concludes that such events have led to an attitude to enjoy life to the fullest in the present as the future is unknown, while also wanting to improve the world. Bund (2014), Hurrellmann and Albrecht (2014) and Urbain et al. (2013) share this opinion by naming the terror attacks of 9/11 as a forming event, but further emphasise that also globalisation and technological innovations have shaped this generation. The latter has led towards an intensive use of the internet, mobile phones and social media, Mangelsdorf (2015) outlines. Evans (2008) agrees and goes one step further by highlighting that the heavy use of digital media has resulted in decreased brand loyalty and unsteady spending among customers belonging to Generation Y. However, Anvar and Venter (2014), Lee (2009) and Sullivan and Heitmeyer (2008) contradict by stating that brand loyalty and willingness to pay an extra for brands are typical characteristics of Generation Y, while product quality is very important to them and they have high income to spend. In addition to that, Generation Y has a strong bond to friends and family (Benkendorff et al., 2011), which is a result from their parents being highly protective and advising (Mangelsdorf, 2015).

2.1.2 Generation Y as green consumers
As already indicated previously, Generation Y has worldwide a strong purchasing power (Barnes & Lescault, 2014) and is expected to pass the purchasing power of the Baby Boomer generation by 2017, making this cohort a growing and powerful market segment (Business Wire, as cited in Muralidharan & Xue, 2016). Moreover, Furlow and Knott (2009) argue that this young generation is likely to be better informed and more worried about social concerns, especially environmentalism and therefore embodies a major component of the green consumer market. Lee (2008) goes even one step further by stating that this generational cohort makes up a critical element in the success of green behavioural commitment now and in the future. Ottman (2011) agrees and further points out that this generation has better access to information, is knowledgeable and is likely to buy more green products, however is also able to quickly identify and critically review pseudo green marketing practices, making it important to design marketing that is applicable and mindful to the young generation (Barton & Egan, 2012). Contrastingly, Gaudelli (2009) acknowledges that although the millennial
generation is environmentally-conscious, the dearth of immediate gratification and missing personal environmental engagement might have a negative effect on sustainable purchase behaviour. Similarly, Saleki and Seyedsaleki (2012) pinpoints that the younger generation indeed has a positive view towards organic food, however due to limited income do not purchase green products regularly. In addition, the Pew Research Center (2014) has indicated that this cohort views itself less environmental-concerned compared to elder generations.

2.2 Fast-moving consumer goods
Doyle (2016) defines FMCGs as non-durable, utmost consumable, frequently and fastly sold retail products. Furthermore, Kumar et al. (2016) explain that FMCGs are comparatively low-priced, a characteristic which is also put forward by Dipp et al. (as cited in Leahy, 2011) who further add that purchase and consumption of FMCGs happens on a daily basis with the customer investing rather small purchasing effort since FMCGs are used up quickly. Hence, product types belonging to FMCGs range from food and beverages (Bilgen & Günther, 2010; Law 2016), to detergents and dairy products (Ahlström & Gesper, 2007) leading to a wide range of alternatives (Jayanthi & Rajendran, 2014) and intense competition within the FMCGs industry (Mahalik & Nambiara, as cited in Simms & Trott, 2014).

2.3 Green purchase intention
Green purchase intention is defined by Rashid (2009) as the customers’ willingness and likelihood to favour environmentally friendly goods over regular products in their purchase decision. Joshi and Rahman (2015a) agree with this definition, while Ramayah, Lee and Mohamad (2010) further elaborate that the purchase intention comprises the motivational drivers behind the actual purchase behaviour. Still, one needs to consider the so called “intention-behaviour gap” which describes the gap between consumer intention and actual behaviour (Carrington et al., 2010).

When reviewing available academic literature, it becomes evident that studies often differentiate between internal, social and external determinants that can influence the green purchase intention of consumers (Liobikienë et al., 2017). Hereby, three different types of models have been prominently applied by academics to encompass the internal and social determinants of green purchasing, namely the Theory of Reasoned Action\(^2\) (e.g. Nizam et al.,

\(^2\) shortly described in Chapter 2.3 as antecedent of the Theory of Planned Behaviour
2014, Ramayah, Lee, & Mohamad, 2010), the Theory of Planned Behaviour\(^3\) (e.g. Kanchanapibul, Lacka, Wang & Chan, 2014; Synodinos, 2014; Din et al., 2016; Liobikienė et al., 2017) and the Consumption Value Theory\(^4\) (e.g. Lin & Hunag, 2012; Akehurst et al., 2012), whereas external determinants of green purchase are commonly associated with situational factors (Joshi & Rahman, 2015a) or contextual factors (Lee, 2011; Guagnano, Stern & Dietz, 1995).

2.4 Internal and social determinants of green purchase intention

For the purpose of this paper the Theory of Planned Behaviour (TPB) is applied by the researchers due to the frequency of application in similar social science fields such as advertising (Delafrooz & Zanjankhah, 2015; Chu, Chen & Sung, 2016) and its proven suitability within the subject of consumer intentions, attitudes and purchase behaviour towards green products (Anvar & Venter, 2014; Paul, Modi & Patel, 2016; Mohd Suki, 2016; Kanchanapibul et al., 2014; Synodinos, 2014; Din et al., 2016; Liobikienė et al., 2017). Additionally, Ajzen (2002), Pavlou and Fygenson (2006) and Sniehotta, Presseau and Araújo-Soares (2014) claim that this theory is the most influential framework studying human action behaviour and intention.

According to Ajzen (2002) the TPB is an extension of Ajzen and Fishbein’s Theory of Reasoned Action (TRA) and describes a theoretical approach rooted in the field of psychology that explains human social behaviour. Hereby, the TPB implies that human behaviour is derived from behavioural intentions, which as a consequence are shaped by the three independent variables of attitude towards behaviour, subjective/social norms and perceived behavioural control Synodinos (2014) explains. Thus, uniting these, the behavioural intention is created, which in turn is assumed to be the immediate antecedent of actual behaviour (Ajzen, 2002).

As Vermeir and Verbeke (2008) explain, the attitude towards behaviour describes the extent to which the individual judges and evaluates its own behaviour in an unfavourable or favourable way, meanwhile social or subjective norms describe the perceived social force (external pressure from the individuals’ reference groups and/or peers) to perform a certain behaviour (Ajzen, 2002). Liobikiene et al. (2016) agree and further add that subjective norms describe the individual’s degree of moral responsibility towards society and future

\(^3\) further explained in Chapter 2.3

\(^4\) explains consumer choices and describes five consumption value dimensions that affect the consumer’s choice behaviour (Lin & Hunag, 2012)
generations. Perceived behavioural control on the other hand indicates one’s perceived simplicity or difficulty to carry out the behaviour, Synodinos (2014) explains. Thus, Ajzen (2002) more specifically points out given that individuals have an adequate level of actual control over their personal behaviour people are likely to perform their intentions at arising opportunities.

In short, the TPB helps the researchers to investigate the influence of internal determinants as well as people’s social environments on the green purchase intention. Nevertheless, the TPB has been subject to some criticism in academic literature (Ramayah et al., 2010; Carrington, Neville & Whitwell, 2010; Sniehotta et al., 2014; Chen & Hung, 2016), which mainly refers to the “intention-behaviour gap” (Carrington et al., 2010). Moreover, it is criticised that additional (unconscious) influences and determinants are needed to determine the behavioural intention and actual behaviour (Ramayah et al., 2010; Sniehotta et al., 2014; Chen & Hung, 2016). Thus, the researchers have integrated also external variables in the form of green marketing tools to their research to examine the green purchase intention of the German Generation Y.

2.4.1 Environmental attitude
To begin with, Barber, Taylor & Strick (2009) acknowledge the importance of consumer attitudes towards brands, goods or services in marketing research to better predict customer intentions and behaviour to be able to manipulate and draw out favourable consumer behaviour in direction to the offered product. Lee (2008) describes environmental attitude as one’s personal cognitive judgement of the importance of environmental preservation and promotion. To be more precise, Liobikiene et al. (2017) add that environmental attitude not only encompasses environmental protection, but also sustainable consumption patterns or environmental concern and awareness.

To date, in academic literature various studies have set their focus on investigating the relationship between environmental attitudes and green purchase, whereby diverse outcomes have been observed (Joshi & Rahman, 2015b). However, the majority have identified a positive relationship between environmental attitude and green purchase intention/behaviour such as Barber et al.’s (2009) study about pro-environmental wine products, investigating US-citizens from all age groups, Liobikiene et al.’s (2017) study in Austria and Lithuania about green purchase behaviour or Synodinos’ (2014) research about Generation Y’s environmental-friendly purchasing behaviour in South Africa.
In correspondence, environmental knowledge and environmental concern, two antecedents frequently linked to environmental attitude in academic studies assert also a positive relationship towards green purchase intention/behaviour for the young customer segment of Generation Y in different cultural contexts such as indicated by Kanchanapibul et al.’s (2013) study among the young British generation; Joshi and Rahman’s study (2015b) about Generation Y in Delhi, India or Muralidharan, Rejón-Guardia & Xue’s (2016) comparative research between the US and Indian Millennial generation. In addition, several other studies on green product purchase have revealed that attitudes towards green purchase, environmental-friendly products or eco-brands is a strong indicator for green purchase (Chen & Hung, 2016; Paul et al., 2016; Joshi & Rahmann, 2015b; Suki, 2016; Anvar & Venter, 2014). Hence, the researchers predict that:

**H1a: Environmental attitude is positively related to the green purchase intention of the German Generation Y for FMCGs.**

### 2.4.2 Social/subjective norms

The predicting factors for social determinants influencing the green purchase intention are the so called social/subjective norms, as Chen and Hung (2016) indicate. Thus, as described previously these norms refer to the external pressure individuals perceive from their reference groups (family, friends or peers) to perform a certain behaviour (Ajzen, 2002) and are associated with the degree of one’s moral responsibility and ecological concern towards society Barber, Bishop and Gruen (2014) and Joshi and Rahman, (2015b) describe further. Furthermore, they also describe the individual’s importance of having a positive social image, Barber et al. (2014) continue.

Reviewing current academic literature in the consumer behaviour and green marketing context reveals that parallel to the environmental attitude also social/subjective norms have been investigated in many studies as part of the TRA or TPB (e.g. Synodinos, 2014; Anvar & Venter, 2014; Joshi & Rahman, 2015b; Paul et al., 2016; Chen & Hung, 2016; Liobikiene et al., 2017) whereby mixed results have been reported. On the one hand, Chen and Hung’s (2016) study about the intention to use green products in the Taiwanese context as well as Din et al.’s (2016) research about factors influencing the green purchase of the Malaysian Generation Y claim that social norms do not significantly relate to intention. On the other hand a great majority of scholars uncovered social/subjective norms as vital determinant of green purchase intention/behaviour in different developing country context among the
Generation Y consumer such as Synodinos’ (2014) study investigating Generation Y in South Africa; Joshi and Rahman’s (2015b) research about young consumers in Delhi, India or Muralidharan and Xue’s (2016) comparative study in the context of young Millennials in India and China and thus, indicate a significant positive relation between green purchase and social/subjective norms. Ergo, when individual consumers perceive that their social environment of reference groups and/or peers support eco-friendly buying, one rather tends to adopt these behaviours (Kumar, as cited in Paul et al., 2016).

Hence, the researchers predict that:

\[ H1b: \text{Social/subjective norms are positively related to the green purchase intention of the German Generation Y for FMCGs.} \]

2.4.3 Perceived behavioural control
Lastly, Maichum, Parichatnon & Peng (2016) explain that it is crucial to develop the perceived behavioural control as antecedent of intention. Hereby, as mentioned earlier, the term describes one’s perceived simplicity or difficulty to carry out the behaviour (Synodinos, 2014). Moreover, the occurrence of the behaviour possibly takes place when both individual’s ability (timely and monetary resources, availability of products) and motivation to perform the particular behaviour is given, Zhou et al. (as cited in Maichum et al., 2016) state while Ajzen (2002) more specifically points that an individuals’ adequate level of actual control over its personal behaviour is crucial.

In current literature, research about the relationship between perceived behavioural control and green purchase intention/behaviour in Generation Y context is scarce. Ruiz de Maya et al.’s (2011) study on organic food purchase, conducted in eight European countries with citizens in different age groups ascribes perceived behavioural control in terms of monetary and time resources little importance for one’s green purchase decision. Similarly, Synodinos’ (2014) study in the South African Generation Y context indicates that to a weak degree perceived behavioural control has a positive relation to individual’s engagement in pro-environmental consumption behaviour. Contrastingly, Paul et al. (2015) report a significant positive relationship between perceived behavioural control and green purchase intention in the Indian consumer context when surveying a range of age groups. This viewpoint is also supported by Maichum et al.’s (2016) study in Thailand which identifies a significant and positive relation between the two variables and also by Chen & Hung (2016) who found that perceived control and the intention to use green products are significantly and positively...
related when asking Taiwanese respondents. Moreover, in the context of organic food (Tarkiainen & Sundqvist, 2005) perceived behavioural control was positively associated towards purchase intention.

Based on that, the researchers propose that:

\[ H1c: \text{Perceived behavioural control is positively related to the green purchase intention of the German Generation Y for FMCGs.} \]

2.5 External determinants of green purchase intention

Although internal and social determinants of green purchase intention are more frequently researched by scholars than external determinants (Liobikiene et al., 2017) their importance should not be underestimated since they might contribute to understanding the intention-behaviour gap in green purchasing (Joshi & Rahman, 2015a) which was already mentioned in chapter 2.3. Also referred to as situational factors (Joshi & Rahman, 2015a) or contextual factors (Lee, 2011; Guagnano, Stern & Dietz, 1995), external determinants can influence the green purchase intention either favourably or unfavourably and according to Joshi and Rahman (2015a) comprise the price, availability, attributes and quality of a product as well as store related attributes, brand image and eco-labelling. Next to these factors, Chen and Lobo (2012) add governmental regulations, while further scholars include environmental messages in media (Lee, 2011) and advertisement (Rahbar & Wahid, 2011) to external determinants of green purchasing. It becomes evident that most of such external determinants for green purchasing can be influenced or even controlled by green marketing tools, which is why this concept is discussed in more detail next.

2.5.1 Green marketing tools

Green marketing is defined as a tool to highlight the environmental friendly features of presumable green products, Singh and Pandey (2012) outline. This is done via green marketing tools such as product design, modified advertising, green production, service processes and sustainable packaging, Singh and Pandey (2012) elaborate, while Rahbar and Wahid (2011) and Furlow (2010) also consider sustainable-branding and eco-labelling as green marketing tools.

Especially eco-labelling is increasingly used in green marketing (D’Souza, Taghian & Lamb, 2006), while eco-labels have also gained importance to Generation Y customers over time, as Taken Smith and Brower’s (2012) longitudinal study from 2009 until 2011 discovered,
making it one of the more important green marketing tools, according to Rahbar and Wahid (2011). Furthermore, Nizam et al. (2014) recommend that price sensitivity is important to include as influencing factor when researching the green purchase decision. Next to that, eco-labels and price are both easily visible as well as comparable product features at the moment of the customer’s purchase decision process in contrast to other green marketing tools such as green advertisement or green production. Therefore, these two green marketing tools (eco-label and price) and their relationship towards the green purchase intention are explored in more depth in the following sub-chapters.

2.5.2 Eco-labelling

Eco-labels, also called eco-certification, provide the customer with information about its ecological features and therefore increase trust in its green claims Rios et al. define (as cited in Joshi & Rahman, 2015b). Eco-labels used in Germany are for example “The Blue Angel” rewarded by the federal government of Germany for sustainable production and packaging (The Blue Angel, n.d.), the UTZ label for environmentally friendly farming of cocoa, tea coffee and hazelnuts (UTZ, 2015) and the Rainforest Alliance Certified seal (Rainforest Alliance, 2017). Rex and Baumann (2007) state that eco-labels inform customers about the production of the product and hence help them in the product selection process. Therefore, it is of interest to determine the influence eco-labels have on the customer’s green purchase intention, Rahbar and Wahid (2011) emphasise.

In current literature Rex and Baumann (2007) question the degree to which eco-labels can lead to rising sales of green products and Rahbar and Wahid (2011) find no significant relationship between eco-label and green purchase behaviour of customers of all ages in Malaysia, however Joshi and Rahman’s (2015b) research results do show such positive relationship with a strong significance for Generation Y customers in India. Joshi and Rahman’s (2015b) results are supported by Din et al.’s (2016) findings of a statistically significant positive relationship between eco-label and awareness on Generation Y green purchasing behaviour in Malaysia and also by Magnusson et al. (as cited in Grankvist, Dahlstrand & Biel, 2004) who discovered that in Sweden females, graduates and young customers (18-25 years) have a significantly stronger purchase intention towards eco-labelled products. Their findings are furthermore in line with Taken Smith and Brower (2012), who conclude that Millennials in the USA actively look for the eco-label when purchasing green products and the study by Nizam et al. (2014) who also found a significant positive
relationship between eco-label and green purchasing of the Malaysian Generation Y. Therefore, the authors assume that:

\[ H2a: \text{Eco-labelling is positively related to the green purchase intention of the German Generation Y for FMCGs.} \]

2.5.3 Price

In the context of attitude and behaviour, the consumer’s price sensitivity is a major topic to consider, Oliver, Volschenk and Smit (2011) point out, especially because green products are often perceived as more expensive than conventional ones (Lea & Worsley, 2005; Radman, 2005). While Liobikiene et al. (2017) and Joshi and Rahman (2015a) outline that the majority of studies found that price sensitivity hampers green purchasing (D’Souza, Taghian & Khosla, 2007; Young, Hwang, McDonald & Oates, 2010) and should therefore not exceed the price of conventional products (Magnusson et al., as cited in Saleki & Seyedsaleki, 2012), Vlosky, Ozanne and Fontenot (as cited in Anvar & Venter, 2014) only agree with that in regard to customers with a low environmental attitude. According to them, customers with a strong environmental attitude are in contrast less price sensitive towards green products. Nonetheless, Radman (2005), Lea and Worsley (2005) highlight in their studies that a reduced price of green products would lead to an increased green purchase intention among Croatian respectively Australian consumers of all ages.

Concerning the European context, Saleki and Seyedsaleki (2012) state that customers from Europe are willing to pay an extra for green products. However, the findings of Liobikiene et al.’s (2017) research contradict this for Austrian and Lithuanian consumers of all ages. In their study, they identify price as major barrier for green purchasing and support the findings of Lea and Worsley (2005) and Radman (2005) mentioned above. With regard to the context of Generation Y, Anvar and Venter (2014) also discovered a significantly positive relationship between willingness to pay and green purchase intention for Generation Y in South Africa, which led to their conclusion that an implementation of cheaper prices for green products would lead to a higher purchase intention among this cohort.

Consequently, the researchers predict that:

\[ H2b: \text{Price sensitivity is negatively related to the green purchase intention of the German Generation Y for FMCGs.} \]
2.6 The relationship between internal and external determinants of green purchase intention
In their study Joshi and Rahman (2015b) found out that the external determinant eco-label predicts green purchasing of the Indian Generation Y less than subjective norms and the environmental attitude. Nonetheless, according to Mainieri, Barnett, Valdero, Unipan and Oskamp (1997), external determinants have the ability to influence the relationship between environmental attitude and green purchasing. Rokka and Uusitalo (2008) agree with that, but claim that such influence has a negative direction by reasoning that external determinants can hinder green purchasing by negatively influencing the relationship between environmental attitude and green purchase intention. In contrast to that, Joshi and Rahman (2015a) and Guagnano et al. (1995) contradict and state that there are positive external determinants as well as negative external determinants. While the former increases the influence of environmental attitude on green purchasing, the latter decreases it. Meanwhile, Guagnano et al. (1995) further differentiate between supportive external determinants, which convince even persons with a weak environmental attitude of green behaviour, and restrictive external determinants, in which persons are discouraged to act green, although they have a strong environmental attitude. Thus, the researchers have developed the following non-directional hypothesis:

\[ H3: \text{External determinants (eco-labelling, price sensitivity) significantly moderate the relationship between environmental attitude and the green purchase intention of the German Generation Y for FMCGs.} \]

2.7 Socio-demographic variables and green purchase intention
In addition to internal, social and external variables that might influence the green purchase intention of the German Generation Y, socio-demographic variables have been investigated by a range of scholars. However, as the paper focuses on the internal, social and external influences on green purchase intention the researchers have decided to use the demographic characteristics of the Generation Y as control variables without setting specific research hypotheses.

To begin with, Roberts (as cited in Anvar & Venter, 2014) states that studies which do not consider the socio-demographic characteristics of environmentally-conscious consumers, have failed to grasp all aspects of environmentalism effectively. As Padel and Foster (as cited in Anvar & Venter, 2014) explain this discrepancy is due to the matter that some individuals
take more responsible actions than others based on their personal characteristics. In addition, Nizam et al. (2014) state that the demographic profile in the consumer market research is helpful for marketers to create customer segments and target marketing strategies accordingly.

Hence, many academics in the field of green consumer behaviour were stimulated to include socio-demographic variables into their studies as control and moderating variables or have stated separate research hypotheses about demographic factors’ influence on green purchase (e.g. Lee, 2008; Anvar & Venter, 2014; Uddin & Khan, 2016; Mohd Suki, 2016). Nevertheless, contradictory results have been reported from the different studies in terms of gender, age, income and education.

Regarding gender, numerous studies have shown a significant difference in environmental attitudes or green purchase based on gender, whereby mainly females show a significantly stronger environmental attitude and green purchase behaviour than their male counterparts (e.g. Lee, 2008; Anvar & Venter, 2014; Uddin & Khan, 2016; Liobikiene et al., 2017). However, other studies identified that gender had no effect on neither (e.g. Akehurst et al., 2012; Mohd Suki, 2016; Muralidharan & Xue, 2016).

In terms of education, income and age, more mixed results are available in academic literature. Some studies claim that education and income are strongly affecting green purchase behaviour (Bieak Kreidler & Joseph-Mathews, 2009), whereas other studies assert no relationship (Lee, 2008; Akehurst et al., 2012; Muralidharan & Xue, 2016). On the contrary, age affects on environmental behaviour or green purchase were not observed in a majority of studies (Lee, 2008; Akehurst et al., 2012; Mohd Suki, 2016; Muralidharan & Xue, 2016). Although this study is already limited to the Generation Y born between 1980 and 1995 (Mangelsdorf, 2015), it was decided to still include age as a control variable. This was done since people between the age of 21 and 37 are expected to be in different life stages, which might influence their green purchase intention.
**Internal & Social determinants**
(Theory of Planned Behaviour)
- Environmental attitude
- Social/subjective norms
- Perceived behavioural control

**External determinants**
(Green marketing tools)
- Eco-labelling
- Price

**Control variables**
(Socio-demographics factors)
- age
- gender
- education
- income
- monthly spending on FMCGs

Hypotheses framework

**Explanation:**
- Means expected relationship
- Means possible influence of the control variables

Figure 1 Hypotheses framework
3 Research design
The subsequent chapter presents the methodological design for this research by discussing the research approach, the data collection and analysis techniques as well as issues of research quality, expected limitations and ethical considerations.

3.1 Research approach, method & strategy
For this research primary data was collected from members of the German Generation Y and thus, is based on individual’s attitudes and perceptions (Saunders, Lewis & Thornhill, 2016). As substantial research about the topic of green marketing and the factors influencing the green purchase intention in other cultural contexts and for other populations exists already on which this study can build up, a quantitative research design was employed. Referring to Saunders et al. (2016) quantitative research methods comprise data collection and/or analysis procedures generating or using numeric data, though involving also some qualitative elements. Such numeric data can then well be used to compare the German Generation Y context to the other studies in the literature.

As noted by Saunders et al. (2016) quantitative research is also commonly associated with a deductive research approach, following sequential steps to reject or fail to reject existing theory in a real life setting. Due to the richness of existing theories and concepts in the field of consumer behaviour and green marketing, this approach was suitable for this study. Hence, the researchers developed six testable hypotheses about the relationship between the concepts of internal, social and external determinants (independent variables) towards the green purchase intention of the German Generation Y (dependent variable). Since the study tested and explained such relationships, an explanatory research approach was chosen (Saunders et al., 2016).

Regarding the research strategy, this study focuses on the case of fast moving consumer goods (FMCGs). This restriction was made to ensure that all respondents can relate to everyday purchase situations where they decide between conventional and green products. In addition, this study centres on the context of the German Generation Y, which was previously detected as a cultural context gap in current academic literature. In order to explore this case in more depth, the researchers used a survey strategy which Saunders et al. (2016) explain to be a common research strategy in deductive approaches and allows the researchers to explore the potential relationships between the independent (i.e. internal, social, external determinants) and the dependent variables (green purchase intention for FMCG). Moreover,
due to the relative large size of the German Generation Y, the researchers believe that the survey strategy allowed the researchers to collect data from a relatively large sample at rather low monetary and timely costs. Additionally, standardised data was gathered that was quantitatively analysable and helped to explain and compare the cohort’s attitudes and intentions towards green purchasing. With the help of inferential statistics, the researchers generated findings that were statistically generalisable to the entire German Generation Y (Saunders et al., 2016).

Due to the matter that this study was a time-bound student research project, the researchers “snapshot” a cross-sectional time horizon, meaning that the phenomena of the green purchase intention of the German Generation Y was investigated over a short period of time from March, 31 until April, 14 2017 (Saunders et al., 2016).

3.2 Research population, sampling & data collection methods
As previously stated, the population for this study consists of all people belonging to the German Generation Y. For the purpose of this study this generation was restricted to all Germans being born between 1980 and 1995, following Mangelsdorf’s (2015) definition, which leads to an age range of respondents being 21 to 37 years old at the point of data collection. Currently, this criterion applies to around 17.2 million people, which equals approximately 21% of the total German population.

Due to the large size of the investigated research population of around 17.2 million people, the conduction of a census exceeded time and financial resources for this study. Consequently, the researchers decided to draw a sample instead. Since this study followed a quantitative research approach with the intention to statistically infer from the sample to the population, a representative sample drawn by probability sampling would be required, according to Saunders et al. (2016). However, as no sampling frame, by means of a list of all 17.2 million people belonging to the German Generation Y, was obtainable for the researchers, probability sampling could not be applied. Consequently, several non-probability sampling methods were used. Thus, in order to still draw a sample as close to a representative sample as possible, it was paid attention to have the survey distributed via several channels to people across the entire country and mostly outside the personal network of the researchers.

Non-probability sampling techniques were carried out by sending the survey via e-mail to representatives of universities across Germany with the request to further distribute it to their
students as well as asking the international office coordinator of Dalarna University to forward the survey to former and current German students, since it was expected that the majority of German students belong to the Generation Y. As respondents rather choose themselves to participate in the study than being selected by the researchers, this approach can be characterised as volunteer sampling (Saunders et al., 2016). Moreover, a form of snowball sampling was applied by asking all respondents to forward the survey to family members, friends or colleagues (Saunders et al., 2016). According to Saunders et al. (2016) the major issue concerning volunteer sampling methods is that the sample might be biased, since people tend to forward the survey to people similar to themselves within their network, resulting in a rather homogenous sample. However, since the survey was forwarded to all students of a university, it was expected that apart from the characteristic of being a student, respondents will still come from very diverse student groups studying different subjects. Eventually, snowball sampling provided the opportunity to effectively reach a larger and geographically more dispersed sample, which improves the representativeness of the sample (Baltar and Brunet, 2012).

To further avoid a restriction of the sample to students and broaden the characteristics of the sample, the personal network of the researchers was asked to fill in and distribute the survey further to non-students belonging to the Generation Y. In this case, a combination of snowball and convenient sampling was applied. Furthermore, self-selection sampling as another type of volunteer sampling (Saunders et al., 2016) was used by posting the survey publicly visible on the Facebook profile pages of German universities. Using Facebook for the distribution of an online survey again improves the sample size and its geographical dispersion considerably more compared to offline distribution methods, according to Baltar and Brunet (2012).

3.2.1 Research instrument
Since a self-completed online questionnaire offers the advantage of gaining a large, geographically dispersed sample size (Saunders et al., 2016), which in return improves the representativeness of the sample, this method was applied when collecting primary data for this study. Respondents hence filled in the questionnaire themselves without a researcher being present after a web link to the questionnaire was sent to them via e-mail. The questionnaire was created and administered using the free of charge “UmfraeOnline” tool.
3.2.2 Measures

Based on existing literature in the context of green purchase intention, the researchers decided to include and adopt item scales to their questionnaire that have been pre-tested and identified valid and reliable item scales in previous studies with a Cronbach’s alpha > 0.7.

For the purpose of this study the scale items were slightly modified and are enlisted below for every investigated concept. All scales were measured on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Furthermore, a detailed overview of such items and the composition of the questionnaire are provided in the operationalisation matrix in Appendix 1.

Green purchase intention

For the concept green purchase intention four items were included in the questionnaire, of which one item was taken from Lai and Cheng’s (2016) 5-point green purchase willingness scale and three items were adopted from Kanchanapibul et al.’s (2014) 5-point green purchase intention scale. These two scales were combined into one in order to not only include the aspect of general willingness from Lai and Cheng’s (2016), but also the likelihood to purchase green products from Kanchanapibul et al.’s (2014) scale. Both aspects are according to Rashid (2009) the key components that make up the concept of green purchase intention.

Environmental attitude

According to Liobikiene et al. (2017), the importance of environmental protection and environmental concern are two main components of environmental attitude. Therefore, one item was included from the 5-point environmental attitude scale by Lee (2008) and Uddin and Khan (2016) to measure whether environmental protection is perceived as meaningful in general. In order to determine a more specific degree to which such environmental protection is perceived as important and to also include a measurement of environmental concern, three items were added from Leonidou, Leonidou & Kvasnova’s (as cited in Synodinos, 2014) 5-point environmental attitude scale. Hence, the environmental attitude scale of this study comprised four items in total.

Social/subjective norms

Meanwhile, a 6-item scale was used to measure the concept of social/subjective norms. For this scale it was paid attention to include all three aspects that in the conceptual framework were found to be the main aspects of this concept, namely: firstly the external pressure of reference groups on the customer (Ajzen, 2002), secondly the degree to which a customer
feels morally responsible towards society (Barber et al., 2014; Joshi & Rahman, 2015b) and thirdly the need to have a positive social image (Barber et al., 2014). To ensure a combination of these three aspects in the measurement scale, three items were adopted from Eurobarometer (as cited in Liobikiene et al.’s, 2017) 4-point environmentally friendly social norms scale, two items from Fielding et al.’s and Lueg and Finney’s (as cited in Synodios, 2014) 5-point subjective norms/family communication scale and one item from Sparks et al.’s (as cited in Paul et al., 2015) 5-point subjective norms scale.

Perceived behavioural control

Next, the concept perceived behavioural control was measured by means of six items, of which five items were taken from Paul et al.’s (2015) and one item from Kim and Choi’s (as cited in Synodinos, 2014) 5-point perceived behavioural control scale. Paul et al.’s (2015) scale was chosen, since it includes the aspects of ability to purchase green (e.g. having the resources) and motivation to purchase green, two concepts that Zhou et al. (as cited in Maichum et al., 2016) define as prerequisites of perceived behavioural control. In order to cover the crucial aspect of the respondent’s perceived level of actual control (Ajzen, 2002), the item of Kim and Choi (as cited in Synodinos, 2014) was added to the measurement scale of this study.

Eco-labelling

Concerning eco-labelling, five items were utilised to measure this concept in the questionnaire. While the researchers adopted four items from Göcer and Oflac’s (2017) 5-point eco-label scale, one item from Nittala’s (as cited in Joshi & Rahman, 2015b) 7-point eco-labelling scale was added. Together these items measure not only the awareness, inclusion and importance of eco-labels in the product selection process, but also the actual influence of eco-labels on the purchase intention, which is why they were included in the measurement scale of this study.

Price sensitivity

Lastly, for the conceptualisation of price sensitivity a 4-item scale was developed. Firstly, the importance of price to the respondent should be investigated, for which one item from Liobikiene et al.’s (2017) 4-point importance of price scale appeared appropriate and was therefore included in this study. Afterwards, the general willingness to pay an extra for green products was measured by one question from Moser’s (2015) 5-point willingness to pay scale. To specify more to what degree respondents are willing to pay how much more, two questions
from Laroche, Bergeron and Barbaro-Forleo’s (2001) 9-point willingness to pay more for environmentally friendly products scale were added to the price sensitivity scale of this study.

3.3 Data analysis techniques
After having collected the data from the sample, it was processed sequentially by the researchers, meaning that the gathered data from the questionnaires was edited, coded and stored in Microsoft Office Excel spreadsheets in order to import it to the statistical analysis software of IBM SPSS Statistics 24 for further testing and analysis of the established research hypotheses.

With the help of descriptive statistics’ measures of central tendency and dispersion, general respondent demographics of the sample from the German Generation Y were displayed.

To check for the validity and reliability of the applied scales in the questionnaire the researchers used Cronbach’s alpha, a statistical measure to assess the internal consistency of responses within each multi-item concept. According to Saunders et al. (2016) alpha coefficients can vary between 1 and 0, whereby alpha scores $\geq 0.7$ indicate a high internal consistency and suggest that the applied scale questions measure the same concept, while other authors such as Garson (as cited in Johnsen, 2008) argue that alpha-levels $\geq 0.6$ are acceptable and indicate consistency.

Lastly, to assess the intensity and direction of relationships between two investigated variables more advanced analysis techniques in terms of statistical significance tests are needed, Saunders et al. (2016) explain. Hence, the researchers’ focal statistical analysis tool to examine the potential relationship between the identified independent variables (internal, social and external factors) and the dependent variable (green purchase intention for FMCGs) is the multiple linear regression analysis with correlation analysis as a pre-step.

Hereby, the researchers tested the null hypotheses for H1-H3. This means that it was first assumed that there are no relationships, differences or associations between the separate independent and dependent variables (Saunders et al., 2016). These assumptions were then tested and consequently the researchers either rejected or failed to reject the null hypotheses resulting in confirming respectively not confirming H1-H3.

Additionally, demographic variables (age, gender, education, monthly spending on FMCGs and income) were used as control variables. Also, to test the moderating effect of the green
marketing tools (eco-labelling and price sensitivity) on the relationship between environmental attitude and green purchase intention moderated regression analysis was applied with the help of multiple linear regression analysis. The outcomes of the data are displayed in different tables and graphs in chapter 4 of this study.

3.4 Data quality and expected limitations
Despite the fact that the researchers have thoughtfully developed the previously described research strategies, the study’s data quality – by means of validity and reliability – and expected research limitations also need to be considered.

To begin with, two of the predicted limitations are concerned with incomplete and/or fragmental response, but also low respondent rates which are common issues of survey strategies and can both affect unfavourably the study’s validity (Veal, 2011). In order to minimise these issues and ensure valid data, the researchers have taken several measures.

In terms of questionnaire design and face validity, the researchers guaranteed that respondents will easily understand the questions’ wording by not using jargon and keeping the questionnaire simplistic, unambiguous and self-explanatory, which was checked with a pilot study conducted with seven respondents (Saunders et al., 2016). Face validity was also enhanced by providing the questionnaire in German, the first language of most members of the German Generation Y. To further stimulate (complete) responses, demographic questions were asked in the beginning of the questionnaire to help respondents find an easy introduction to the survey. Additionally, the researchers also considered the type-setting, colour coding and page break to assure good and attractive readability of the questions while the respondents were hinted to blank spaces in the questionnaire before they could confirm submission of results.

In terms of low respondent rate, the researchers have considered to keep the length of the survey to below ten minutes which Crawford, Couper and Lamias (2001) confirm to be an appropriate length of questionnaire duration. Moreover, the cover letter highlighted a good reason to conduct the research while respondents were also provided with anonymity/confidentiality statements as well as contact details of the researchers and the thesis’ supervisor in case of questions or comments, which Veal (2011) claims to enhance the respondent rate. Ensuring the respondent to remain anonymous and his/her data confidential
will also lower participant bias (the induction of false responses) and consequently improves the reliability of the study, according to Saunders et al. (2016).

Moreover, the researchers predicted that the questionnaire may not be further distributed to the students by some contacted universities which is why the researchers additionally used their personal network to ensure that the questionnaire was forwarded in at least three German university networks. Using such networks further resulted in a larger sample size and geographical spread, which in turn improved the reliability of this research. Nonetheless, limitations concerning such convenience and snowball sampling techniques applied such as bias due to low control of to whom the questionnaire is distributed to and an inability to statistically generalise the findings from the sample to the population with confidence. A discussion of such sampling issues was already given in more detail in chapter 3.2.

Additionally, in terms of data collection and analysis the researchers have ensured that a pre-tested data collection tool (UmfrageOnline) and a data analysis software with additional plugins (IBM SPSS Statistics 24) were available throughout the entire research period.

When discussing the internal validity of this study, it is to mention that not all determinants of green purchase intention that have been tested in other studies could be included, as this exceeded the scope of this research. Still, by integrating not only internal and social, but also external determinants of green purchase intention internal validity of this study was enhanced. Furthermore, Saunders et al. (2016) mention the application of control variables as a measure to improve internal validity. In this case five of them were used: age, income, education, gender and additionally monthly spending.

Lastly, construct validity was ensured by only adopting scales for the questionnaire that were already proven to be valid for corresponding concepts in similar studies with a Cronbach’s alpha higher than 0.7. As already mentioned in chapter 3.3, construct validity of the multi-item scales of this study were also measured using Cronbach’s alpha measures.
3.5 Ethical considerations

Ethical issues are of especial importance when human subjects such as in social sciences are researched and need to be considered during the research design, conduction and reporting (Veal, 2011). Hence, for this study ethical considerations were carefully taken into account during the entire research project.

In the first phase (research design) the researchers have built up the study on a thorough review of literature, whereby the authors of the original sources were referenced with the APA referencing system to avoid plagiarism. Furthermore, it was paid attention to not include any questions in the questionnaire that may be perceived as disrespectful or insulting by respondents. To check this, the questionnaire was proof-read by seven participants of the pilot study as well as the supervisor of this research project. In the second research phase (conduction) data was collected, stored and treated anonymously and confidential at all times and only used for the purpose of this study without forwarding it to third parties. Respondents were accurately informed about the anonymity and confidentiality of their data prior to starting the questionnaire. Moreover, the survey topic, purpose and voluntary nature of participation were explained at this point, as well. Withdrawing from the study was always possible. In the last research phase (reporting) study results were accurately and objectively reported based on the outcome of proven statistical analyses. Further, it is noted that this research study is in compliance with Dalarna University’s Code of Ethical Standards for Research.
4 Results
This chapter presents the statistical results of the conducted analysis in the statistical software program IBM SPSS Statistics 24 by illustrating the demographic characteristics of the sample multicollinearity and internal consistency measures, descriptive results of multi-item concepts, correlation as well as the statistically more advanced method of multiple regression analysis.

4.1 Demographic characteristics of the sample
With the utilised online survey tool “Umfrage Online” the researchers have collected in total a number of 414 respondents who have been found in the researchers’ personal network as well as through forwarding the survey via e-mail by two German universities. Having checked all received responses, 13 of the collected respondents did not belong to the targeted age range of German Generation Y, as they were either too old or too young and thus were withdrawn from data entry. In consequence, 401 out of the 414 completed surveys were valid and used for the subsequent data analysis. Although the sample was derived mainly by means of convenience sampling which according to Saunders et al. (2016) partly diminishes the reliability of data, given a 95% confidence level for a 5% margin of error with a sample size larger than 384 the collected data in our study nevertheless allowed the researchers to make statistical inferences and state cautious generalisations about the overall research population of German Generation Y.

As Table 1 and Table 2 show, respondents’ age ranged from 21 to 37 years which conforms to the entire age span of the researched population of German Generation Y. The average age of respondents is 25.4 years ($SD = 3.54$) and among the sample, female respondents (70.8%) are visibly larger represented than male respondents (29.2%). A possible explanation for this relatively unequal distribution of gender in this study might be found in the apparent traditional role allocation between sexes in the German society where the responsibility to purchase groceries lies in two-thirds of cases to women and only in around 29% of cases in the hands of men, as a national consumption study by the German Federal Nutrition, Agricultural and Consumerism Research Centre found out (Bundesministerium für Ernährung, Landwirtschaft und Verbraucherschutz, 2008). Another explanation might be that in Germany male university students eat on average more often in canteens compared to female students and do not need to purchase FMCGs as much (Middendorff, Apolinarski, Poskowsky, Kandulla & Netz, 2013).
In terms of educational level, Abitur (equivalent to British A-levels) and Bachelor’s degree make up the two largest educational groups with 29.7% respectively 29.4% of the study’s sample. In contrast, respondents with doctoral degree (0.5%), Realschulabschluss (2.0%) and vocational qualification on the level of a Meister qualification (3.0%) are the least represented educational levels in this study, while no respondents with the lowest secondary school qualification (Hauptschulabschluss) participated in the study. The distribution concerning highest educational attainment may be explained with German Generation Y being better trained than the antecessor Generation X, as nowadays more young people are attending high school and more high school graduates start studying (Spiegel Online, 2015).

Concerning disposable monthly net-income visibly most of the respondents are to be found in the two lowest salary categories, namely almost half of the respondents earning less than €750 (46.4%) monthly and nearly a third of respondents gaining between €750 and €1499 (30.9%) per month.

When asking respondents to indicate how much money they spend on a monthly basis for fast-moving everyday products such as groceries, toiletries or other on average €224.42 ($D = 114$) is allocated per person and month. Such high standard deviation might occur due to 21% of German students eating in inexpensive university canteens four times or more per week (Middendorff et al., 2013).

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<thead>
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<th>Table 1 Sample’s age and amount spent for FMCGs</th>
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<tbody>
<tr>
<td><strong>Variable</strong></td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Amount spent for FMCGs (in € per month per person)</td>
</tr>
</tbody>
</table>
Table 2 Sample’s gender, educational level and net income

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>284</td>
<td>70.8%</td>
</tr>
<tr>
<td>Male</td>
<td>117</td>
<td>29.2%</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td><strong>Educational level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hauptschulabschluss</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Realschulabschluss</td>
<td>8</td>
<td>2.0%</td>
</tr>
<tr>
<td>Fachhochschulreife/Fachabitur</td>
<td>38</td>
<td>9.5%</td>
</tr>
<tr>
<td>Abitur (A-levels)</td>
<td>119</td>
<td>29.7%</td>
</tr>
<tr>
<td>Completed apprenticeship</td>
<td>69</td>
<td>17.2%</td>
</tr>
<tr>
<td>Vocational qualification on the level of Meister qualification</td>
<td>12</td>
<td>3.0%</td>
</tr>
<tr>
<td>Bachelor’s degree</td>
<td>118</td>
<td>29.4%</td>
</tr>
<tr>
<td>Master’s degree</td>
<td>35</td>
<td>8.7%</td>
</tr>
<tr>
<td>Doctoral degree</td>
<td>2</td>
<td>0.5%</td>
</tr>
<tr>
<td><strong>Net income (per month)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under €750</td>
<td>186</td>
<td>46.4%</td>
</tr>
<tr>
<td>€750-€1499</td>
<td>124</td>
<td>30.9%</td>
</tr>
<tr>
<td>€1500-€2249</td>
<td>65</td>
<td>16.2%</td>
</tr>
<tr>
<td>€2250-€2999</td>
<td>20</td>
<td>5.0%</td>
</tr>
<tr>
<td>€3000 or more</td>
<td>6</td>
<td>1.5%</td>
</tr>
</tbody>
</table>

4.2 Multicollinearity
Before testing the established hypotheses with the help of multiple linear regression analysis in the statistical software program IBM SPSS Statistics 24, the collected data for this study was carefully checked for potential problems of multicollinearity between the IVs in order to provide valid and reliable data analysis (Saunders et al., 2016).

Thus, in Table 3 the researchers listed the measures of the collinearity statistics (tolerance scores and variation inflation factor/VIF) for internal, social and external determinants (IVs) of German Generation Y’s green purchase intention for fast moving consumer goods (DV).
Based on the analysis of collinearity statistics, it was shown that there is no multicollinearity between the five IVs (environmental attitude, social/subjective norms, perceived behavioural control, price sensitivity) in the obtained data, as tolerance scores were in all cases above 0.2 and VIF scores below 10. Thus, as argued by Saunders et al. (2016) there is no intercorrelation between the different IVs in our study which makes it easier for the researchers to conclude on the separate effects of the IVs in the course of further data analysis.

4.3 Descriptive results of multi-item concepts
In the following the multi-item concepts of the questionnaire are focussed on. At first, the internal consistency of each multi-item concept is described. Afterwards, the descriptive results for the concepts and their items are outlined.

4.3.1 Internal consistency
Next to testing for multicollinearity, the researchers assessed the internal consistency of the measured concepts by means of the Cronbach’s α measure which Saunders et al. (2016) suggest to test for the reliability of the measured concepts.

As seen in Table 4, reliability analysis showed that all operationalised multi-item concepts fulfilled the required alpha-level of $\geq 0.6$ (Garson, as cited in Johnsen, 2008), whereby the majority even conformed the tighter guidance level of $\geq 0.7$ argued by Saunders et al. (2016) to indicate high internal consistency of measured concepts. Almost every item of the measured concepts seemed worthwhile of retention, resulting in a decrease in the alpha-level, if being removed from the questionnaire. The only exception to this was item 5, measured in the concept “perceived behavioural control”, which increased the alpha level from $\alpha = .54$ to $\alpha = .60$ for this particular concept, after deleted from the data. To conclude, the Cronbach’s

<table>
<thead>
<tr>
<th>Table 3 Multicollinearity analysis of data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>n = 401</strong></td>
</tr>
<tr>
<td>Environmental attitude</td>
</tr>
<tr>
<td>Social/subjective norms</td>
</tr>
<tr>
<td>Perceived behavioural control</td>
</tr>
<tr>
<td>Eco-label</td>
</tr>
<tr>
<td>Price sensitivity</td>
</tr>
<tr>
<td>Green purchase intention</td>
</tr>
</tbody>
</table>

As seen in Table 4, reliability analysis showed that all operationalised multi-item concepts fulfilled the required alpha-level of $\geq 0.6$ (Garson, as cited in Johnsen, 2008), whereby the majority even conformed the tighter guidance level of $\geq 0.7$ argued by Saunders et al. (2016) to indicate high internal consistency of measured concepts. Almost every item of the measured concepts seemed worthwhile of retention, resulting in a decrease in the alpha-level, if being removed from the questionnaire. The only exception to this was item 5, measured in the concept “perceived behavioural control”, which increased the alpha level from $\alpha = .54$ to $\alpha = .60$ for this particular concept, after deleted from the data. To conclude, the Cronbach’s
alpha level of the measured concepts for this study show satisfactory consistency and indicate a robust, steady and reliable questionnaire.

Table 4 Means, standard deviation and internal consistency of measured concepts

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>n = 401</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental attitude</td>
<td>3.50</td>
<td>.717</td>
<td>.70</td>
</tr>
<tr>
<td>Item 1- concern</td>
<td>3.85</td>
<td>.748</td>
<td></td>
</tr>
<tr>
<td>Item 2- reduction</td>
<td>3.76</td>
<td>.867</td>
<td></td>
</tr>
<tr>
<td>Item 3- donation</td>
<td>2.89</td>
<td>1.043</td>
<td></td>
</tr>
<tr>
<td>Item 4- protection (rev. coded)</td>
<td>4.53</td>
<td>.707</td>
<td></td>
</tr>
<tr>
<td>Social/subjective norms</td>
<td>3.43</td>
<td>.589</td>
<td>.73</td>
</tr>
<tr>
<td>Item 1- good example</td>
<td>4.27</td>
<td>.782</td>
<td></td>
</tr>
<tr>
<td>Item 2- society</td>
<td>3.45</td>
<td>.910</td>
<td></td>
</tr>
<tr>
<td>Item 3- difference</td>
<td>4.09</td>
<td>.789</td>
<td></td>
</tr>
<tr>
<td>Item 4- peer’s want</td>
<td>2.81</td>
<td>.962</td>
<td></td>
</tr>
<tr>
<td>Item 5- peer’s encouragement</td>
<td>2.43</td>
<td>.996</td>
<td></td>
</tr>
<tr>
<td>Item 6- peer’s opinion</td>
<td>3.50</td>
<td>.975</td>
<td></td>
</tr>
<tr>
<td>Perceived behavioural control</td>
<td>3.58</td>
<td>.579</td>
<td>.60*</td>
</tr>
<tr>
<td>Item 1- confidence</td>
<td>4.00</td>
<td>.982</td>
<td></td>
</tr>
<tr>
<td>Item 2- resources</td>
<td>2.93</td>
<td>1.078</td>
<td></td>
</tr>
<tr>
<td>Item 3- opportunities</td>
<td>3.50</td>
<td>.906</td>
<td></td>
</tr>
<tr>
<td>Item 4- a lot doable</td>
<td>3.33</td>
<td>.901</td>
<td></td>
</tr>
<tr>
<td>Item 5*- no control</td>
<td>n.a.</td>
<td>n.a.</td>
<td></td>
</tr>
<tr>
<td>Item 6- willingness</td>
<td>4.16</td>
<td>.787</td>
<td></td>
</tr>
<tr>
<td>Eco-labelling</td>
<td>3.27</td>
<td>.831</td>
<td>.84</td>
</tr>
<tr>
<td>Item 1- awareness</td>
<td>3.70</td>
<td>1.078</td>
<td></td>
</tr>
<tr>
<td>Item 2- positive attitude</td>
<td>3.74</td>
<td>.924</td>
<td></td>
</tr>
<tr>
<td>Item 3- consideration</td>
<td>3.16</td>
<td>1.065</td>
<td></td>
</tr>
<tr>
<td>Item 4- switch</td>
<td>3.22</td>
<td>1.118</td>
<td></td>
</tr>
<tr>
<td>Item 5- organisation</td>
<td>2.56</td>
<td>1.146</td>
<td></td>
</tr>
<tr>
<td>Price sensitivity</td>
<td>2.62</td>
<td>.748</td>
<td>.75</td>
</tr>
<tr>
<td>Item 1- feature</td>
<td>3.25</td>
<td>1.029</td>
<td></td>
</tr>
<tr>
<td>Item 2- willingness (rev. coded)</td>
<td>2.45</td>
<td>.870</td>
<td></td>
</tr>
<tr>
<td>Item 3- 10% (rev. coded)</td>
<td>2.23</td>
<td>.932</td>
<td></td>
</tr>
<tr>
<td>Item 4- 10€ (rev. coded)</td>
<td>2.56</td>
<td>1.101</td>
<td></td>
</tr>
<tr>
<td>Green purchase intention</td>
<td>3.64</td>
<td>.693</td>
<td>.73</td>
</tr>
<tr>
<td>Item 1- willingness</td>
<td>4.16</td>
<td>.787</td>
<td></td>
</tr>
<tr>
<td>Item 2- avoidance</td>
<td>3.52</td>
<td>.993</td>
<td></td>
</tr>
<tr>
<td>Item 3- change</td>
<td>3.43</td>
<td>.982</td>
<td></td>
</tr>
<tr>
<td>Item 4- two products</td>
<td>3.44</td>
<td>.960</td>
<td></td>
</tr>
</tbody>
</table>

*internal consistency level after item 5 of the measured concept was removed
4.3.2 Descriptive results of concepts
All multi-items concepts in this study were measured on a 5-point scale from 1 to 5 (whereby 1 = strongly disagree, 5 = strongly agree). As seen in Table 4, it was generally detected that German Generation Y indicates to have a substantial positive intention to purchase green FMCGs, whereby it scored highest among all measured concepts with an average $M = 3.64$ (SD = .693). Hence, members of the generational cohort have a strong willingness to purchase environmentally-friendly and rather try to avoid purchasing non-green and environmentally harmful products.

Moreover, the averages of the multi-item scales for perceived behavioural control ($M = 3.58$; SD = .579) and environmental attitude ($M = 3.50$; SD = .717), the internal determinants in this study, show the highest scores among the five measured IVs (see Table 4). Thus, results indicate that German Generation Y has a positive attitude towards the environment, is environmentally-concerned and believes that environmental protection efforts are useful measures to help preservation. Additionally, the cohort considers themselves to have a rather strong control over their green purchasing of FMCGs, as they have the willingness and confidence to do so.

In terms of social/subjective norms, German Generation Y indicated to be relatively influenced from their social environment ($M = 3.43$, SD = .589). Interestingly, it appears that one’s moral responsibility and acting towards the good of society are more relevant for this generation to purchase green than external pressure performed by one’s social reference groups (see Table 4).

Contrastingly, as Table 4 indicates the green marketing tools were comparatively lower rated. Additionally, for the external determinants a higher deviation in outcomes compared to other determinants was detected and thus indicates a wider spread of opinions (for eco-labelling: $M = 3.27$; SD = .831 and for price sensitivity: $M = 2.62$, SD = .748). Hence, outcomes point out that the cohort is rather less price sensitive, even if price is somewhat important to the generation, they are generally willing to pay 10% more for environmentally-friendly FMCGs. Despite lower ratings for the eco-labelling items in the questionnaire, the awareness and attitude towards eco-certification is rather positive, although it seems that it is rather less important for this cohort to buy FMCGs that are being certified by a known environmental organisation.
4.4 Correlation analysis
To test the previously established hypotheses H1-H3 with the help of multiple linear regression analyses, Saunders et al. (2016) state that the collected data has to meet the precondition that is concerned with the linearity of relationship between the separate IVs and the DV. Therefore, in first instance the researchers have produced scatterplots of the relationships between the different IVs, namely environmental attitude (H1a), social/subjective norms (H1b), perceived behavioural control (H1c), eco-label (H2a) and price sensitivity (H2b) towards the green purchase intention of the German Generation Y for FMCGs as DV. Looking at the scatterplots (see Appendix 4), it can be detected that the relationship between the different IVs and the DV in all cases is linear. Interestingly, the relation between price sensitivity (IV) and green purchase intention (DV) is negative while in the case of the four other IVs the relationship towards the green purchase intention (DV) is positive.

Table 5 Correlation Coefficients (Pearson’s r) for central IVs

<table>
<thead>
<tr>
<th>n=401</th>
<th>Correlation coefficient (r)</th>
<th>Green purchase intention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Correlation is significant at the .01 level (2-tailed)</strong></td>
<td></td>
</tr>
<tr>
<td>Environmental attitude</td>
<td>.000</td>
<td>.66**</td>
</tr>
<tr>
<td>Social/subjective norms</td>
<td>.000</td>
<td>.51**</td>
</tr>
<tr>
<td>Perceived behavioural control</td>
<td>.000</td>
<td>.66**</td>
</tr>
<tr>
<td>Eco-labelling</td>
<td>.000</td>
<td>.60**</td>
</tr>
<tr>
<td>Price sensitivity</td>
<td>.000</td>
<td>-.54**</td>
</tr>
</tbody>
</table>

To be more precise and fully test the assumption of the linearity and strengths of relationships between the separate IVs and the DV, the researchers have conducted a correlation analysis whose main results are displayed in Table 5. Outcomes show that environmental attitude (H1a), social/subjective norms (H1b), perceived behavioural control (H1c), eco-labelling (H2a) and price sensitivity (H2b) are significantly correlated with the green purchase intention for FMCGs. Concerning the strength of relationship, the IVs of H1a-c and H2a environmental attitude (Pearson’s r(401) = .66, p < .01), social/subjective norms (Pearson’s r(401) = .51, p < .01), perceived behavioural control (Pearson’s r(401) = .66, p < .01) and eco-labelling (Pearson’s r(401) = .60, p < .01) show all a statistically significant moderate and positive correlation towards the green purchase intention of German Generation Y while for
price sensitivity, H2b (Pearson’s $r(401) = -.54, p < .01$) a statistically significant moderate, but negative correlation towards the green purchase intention was discovered.

Hence, from the correlation analysis, it can be concluded that all five measured IVs for H1-H3 are significantly correlated to the green purchase intention of German Generation Y, whereby environmental attitude (H1a) and perceived behavioural control (H1c) have the strongest correlation with the DV. Moreover, due to the confirmed linearity of relationships between the separate IVs and the DV the precondition to run regression analyses to actually test the previously developed hypotheses of H1-H3 is met (Saunders et al., 2016).

4.5 Multiple linear regression analysis
With the help of the statistical more advanced method of multiple linear regression analysis, the relationships between the IVs and the green purchase intention were analysed in more depth.

In the first step the multiple linear regression analysis was run with environmental attitude, social/subjective norms, perceived behavioural control, eco-labelling and price sensitivity as IVs, the demographic variables age, gender, monthly spending on FMCGs, income and education as control variables and green purchase intention as DV. The adjusted $R^2$ for this analysis model was .581, meaning that 58.1% of the variance in the DV green purchase intention can be explained by the above listed IVs and control variables. In order to check how much of such variation is due to the influence of the control variables, the multiple linear regression analysis was conducted once more only with the demographic factors as control variables and green purchase intention as DV in the second step. For this second analysis model the adjusted $R^2$ decreased to .001. Hence, only 0.1% of the variance in the DV green purchase intention can be explained by demographic factors.

As stated before, in the next step the null hypotheses of H1a-c and H2a-b were tested by means of the first regression analysis model, which included all IVs as well as the control variables. Consequently, the null hypotheses assumed that there is no significant relationship between environmental attitude and green purchase intention, social/subjective norms and green purchase intention, perceived behavioural control and green purchase intention, eco-labelling and green purchase intention and price sensitivity and green purchase intention.

Results, as displayed in Table 6 show that all relationships between the IVs and green purchase intention are significant and positive except for the relationship between price
sensitivity and green purchase intention which is significantly negative and confirms the results of the previously conducted correlation analysis (see chapter 4.4).

Concerning H1a, the relationship between environmental attitude and green purchase intention shows an unstandardised coefficient of $\beta = .31$ ($p < .01$). This means that a strong positive environmental attitude predicts a positive intention among German Generation Y to buy green FMCGs. Consequently, the null hypothesis is rejected and H1a is confirmed.

Table 6 Results of the multiple linear regression analysis

<table>
<thead>
<tr>
<th>n=401</th>
<th>Sig.</th>
<th>Unstandardised coefficient ($\beta$)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Green purchase intention</td>
</tr>
<tr>
<td><strong>Independent variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental attitude</td>
<td>.000</td>
<td>.31**</td>
</tr>
<tr>
<td>Social/subjective norms</td>
<td>.011</td>
<td>.12*</td>
</tr>
<tr>
<td>Perceived behavioural control</td>
<td>.000</td>
<td>.28**</td>
</tr>
<tr>
<td>Eco-labelling</td>
<td>.000</td>
<td>.19**</td>
</tr>
<tr>
<td>Price sensitivity</td>
<td>.045</td>
<td>-.08*</td>
</tr>
<tr>
<td><strong>Control variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.789</td>
<td>.00</td>
</tr>
<tr>
<td>Gender</td>
<td>.320</td>
<td>.05</td>
</tr>
<tr>
<td>Monthly spending on FMCGs</td>
<td>.486</td>
<td>.00</td>
</tr>
<tr>
<td>Income €750 - €1499$¹</td>
<td>.968</td>
<td>-.00</td>
</tr>
<tr>
<td>Income €1500 - €2249$¹</td>
<td>.594</td>
<td>-.04</td>
</tr>
<tr>
<td>Income €2500 - €2999$²</td>
<td>.757</td>
<td>.04</td>
</tr>
<tr>
<td>Income €3000 or more$¹</td>
<td>.606</td>
<td>-.10</td>
</tr>
<tr>
<td>Realschulabschluss$²</td>
<td>.258</td>
<td>.19</td>
</tr>
<tr>
<td>Fachhochschulreife/Fachabitur$²</td>
<td>.988</td>
<td>-.00</td>
</tr>
<tr>
<td>Completed apprenticeship$²</td>
<td>.013</td>
<td>.18*</td>
</tr>
<tr>
<td>Vocational qualification on the level of Meister qualification$²</td>
<td>.140</td>
<td>.21</td>
</tr>
<tr>
<td>Bachelor’s degree$²</td>
<td>.207</td>
<td>.08</td>
</tr>
<tr>
<td>Master’s degree$²</td>
<td>.669</td>
<td>-.05</td>
</tr>
<tr>
<td>Doctoral degree$²</td>
<td>.887</td>
<td>-.05</td>
</tr>
</tbody>
</table>

* Relationship is significant at the .05 level.
** Relationship is significant at the .01 level.
¹ In comparison to the excluded variable of income less than €750.
² In comparison to the excluded variable of Abitur (A-levels) as highest educational attainment.
Also social/subjective norms and perceived behavioural control share significantly positive relationships with green purchase intention indicated by $\beta = .12 \ (p = .01)$ respectively $\beta = .28 \ (p < .01)$. In consequence, strong subjective norms and being positively influenced by social reference groups such as friends, relatives or colleagues positively impact the German Generation Y in their intention to purchase green FMCGs, so does a strongly perceived behavioural control. Hence, both null hypotheses can be rejected and H1b and H1c are confirmed.

With regard to external determinants of green purchase intention, a significant and positive relationship was found between eco-labelling and green purchase intention ($\beta = .19, \ p < .01$), which means that eco-labels on FMCGs increase the intention of German Generation Y consumers to purchase such products. Therewith, the null hypothesis is rejected and H2a is confirmed.

Contrastingly, the other external determinant examined in this study, price sensitivity, shows a slight, but significantly negative relationship with green purchase intention with an unstandardised $\beta$-coefficient of -.08 ($p = .045$). This means that the more price sensitive a person of German Generation Y is, the lower his/her green purchase intention for FMCGs. Based on this result, the null hypothesis is rejected and H2b is also confirmed.

As part of the multiple linear regression analysis the relationships between the demographic factors (age, gender, monthly spending on FMCGs, income, educational level) and green purchase intention were also investigated in order to control whether these variables have an impact on the green purchase intention of German Generation Y that needs to be considered when interpreting the results regarding H1a-c and H2a-b.

As shown in Table 6, the relationships between all demographic variables and green purchase intention are clearly insignificant, indicated by a significance level of far above $p = .05$. Even if the significance level was disregarded, the relationships of age, gender, monthly spending on FMCGs, income and educational level towards green purchase intention would hardly exist, as the unstandardised $\beta$-coefficients for such relationships are all close to zero. The only exception is the relationship between the educational attainment of a completed apprenticeship and green purchase intention, which is significant and positive with a $\beta = .18 \ (p = .01)$. This means that people of the German Generation Y with a completed apprenticeship tend to have a higher intention to buy green FMCGs in comparison to people having the educational level of Abitur (A-levels). Despite being insignificant, a similar
tendency can be observed for the relationship between the educational attainment on the level of a Meister qualification and green purchase intention with $\beta = .21$ ($p = .14$). As both educational attainments together make up the only two practical educations in Germany, this might be an indication that receiving a practical education increases the green purchase intention for FMCGs of the German Generation Y more than a theoretical education.

In conclusion, the multiple linear regression analysis resulted in the confirmation of H1a-c and H2a-b, while it was found out that in general demographic factors do not determine the green purchase intention of German Generation Y for FMCGs, except for a practical education which might be an indication for a stronger green purchase intention. The tested IVs and control variables explain 58.1% of the variance in the DV green purchase intention.

4.6 Moderated regression analysis
In order to examine H3 and determine whether external determinants, in this study eco-labelling and price sensitivity, act as moderating variables that influence the relationship between environmental attitude and green purchase intention for FMCGs of German Generation Y two moderated regression analyses were conducted.

In the first analysis eco-labelling was tested as a moderating variable by means of the comparison of two multiple linear regression models. The first model included environmental attitude as IV, eco-labelling as moderating variable, green purchase intention as DV and social/subjective norms, perceived behavioural, price sensitivity as well as all demographic variables as control variables. Meanwhile, in the second model the interaction of environmental attitude and eco-labelling was added.

When comparing the outputs of both analysis models (see Table 7), it becomes evident that adding the interaction of environmental attitude and eco-labelling in the second model increases the $R^2$ only by .001, which means that only 0.1% of the variance in the DV green purchase intention can be explained by such interaction and thus the moderation effect. However, the relationship of the interaction and hence the moderating effect between environmental attitude and eco-labelling towards green purchase intention is strongly insignificant with $p = .54$ ($\beta = -.02$) being clearly above the significance level of $p \leq .05$. Consequently, the external determinant eco-labelling does not moderate the relationship between environmental attitude and green purchase intention of German Generation Y for FMCGs.
In the second moderated regression analysis the moderating effect of price sensitivity was tested. Again, two multiple linear regression models were run. The first had environmental attitude as IV, price sensitivity as moderating variable, green purchase intention as DV and social/subjective norms, perceived behavioural control, eco-labelling as well as all demographic variables as control variables. Afterwards, in the second model the interaction of environmental attitude and price sensitivity was added.

Results of both analysis models are displayed in Table 8 and indicate that 0.0% of the variance in the DV green purchase intention can be explained by the addition of the interaction between environmental attitude and price sensitivity ($R^2$ change = .000). Moreover, no significant relationship exists between the interaction variable (environmental attitude x price sensitivity) and green purchase intention, as $p = .97$ ($\beta = -.001$), which is substantially higher than the significance level of $p \leq .05$. It can thus be stated that price sensitivity does not serve as a moderating variable impacting the relationship between environmental attitude and green purchase intention.

In conclusion, as neither eco-labelling nor price sensitivity moderate the relationship between environmental attitude and green purchase intention of German Generation Y for FMCGs, the study fails to reject the null hypothesis and H3 cannot be confirmed.
5 Discussion
After the study results were outlined in chapter 4, this chapter continues with a discussion of such results in comparison to the conceptual framework of this research including previous studies conducted in the fields of internal, social and external determinants of green purchasing and Generation Y.

5.1 Green purchase intention and demographic characteristics
To begin with, results showed that German Generation Y has a relatively strong intention to purchase green fast moving consumer goods (FMCGs) which supports Ottman’s (2011) characterisation of Generation Y being likely to buy more environmentally friendly products. Apart from their general willingness to buy green, German Generation Y also shows the disposition to change from their usual product choice to a green alternative. Based on this study’s results Atkinson and Rosenthal’s (2014) proposition of Generation Y becoming a key consumer segment for green products seems plausible in the German context.

In addition to that, Generation Y with its relatively large size of 17.2 million people, making up more than one fifth of the entire German population (Statistisches Bundesamt, 2015), and its rather positive intention towards purchasing green can thus be considered as critical element in the success of green consumerism in the near future. Especially when regarding the results based on the demographic characteristics age, gender and surprisingly also monthly spending on FMCGs and income no statistical differences in the intention to purchase green were unveiled in this study, indicating the cohorts’ consistent attitude towards green purchasing. Interestingly, results contrast Liobikiene et al.’s (2017) study conducted in Austria and Lithuania where females showed a significantly stronger green purchase intention. And, though not statistically significant, a new insight that has not been obtained from the consulted literature before, this study revealed that having a practical education indicates a tendency towards a stronger green purchase intention.

Still, one needs to consider that the results and conclusions above concern only the purchase intention not the behaviour of German Generation Y. The so called “intention-behaviour gap” which describes the gap between consumer intention and actual behaviour (Carrington et al., 2010) might apply.
5.2 Environmental attitude of German Generation Y
Results of this study confirmed a significant positive relationship between environmental attitude and green purchase intention (H1a) which is interestingly in accordance with numerous other studies about Generation Y in different cultural contexts such as South Africa (Synodinos, 2014), Delhi/India (Joshi & Rahman, 2015b) as well as the US and India (Muralidharan et al., 2016). Though environmental attitude in these studies is mainly claimed to be a strong indicator for green purchase intention, for the German context only a moderate correlation and a mean score of 3.50 was indicated (see Table 4). This slight difference in results may possibly be due to more severe and more apparent environmental issues such as deforestation, air pollution or littering in developing countries; which in turn might have led Generation Y respondents in those countries to develop a stronger environmental-conscious attitude than in developed countries. Nevertheless, results for German Generation Y still show an overall positive environmental attitude, as acknowledged by Gaudelli (2009) seems to be a consequence of the cohort’s experience in global warming and environmental pollution as continuous threats during their youth (Mangelsdorf, 2015).

5.3 Social/subjective norms of German Generation Y
It became statistically evident that German Generation Y gets positively influenced by their social reference groups and subjective norms to purchase green FMCGs (H1b), indicating that social determinants play a vital role in German Generation Y’s intention to purchase environmentally-friendly. Results are also in line with researches undertaken on Generation Y in South Africa (Synodinos (2014), Delhi/India (Joshi & Rahman, 2015b) and India and China (Muralidharan & Xue, 2016), which identified a significant positive relationship between social/subjective norms and green purchase intention. Taking a closer look at the results concerning social/subjective norms, it was found that pressure from society and its norms had a greater influence on the members of the cohort than social reference groups such as family and friends. This is surprising considering the strong bond of Generation Y to friends and family highlighted by Benkendorff et al. (2011) and Mangelsdorf (2015), but supports Furlow and Knott’s (2009) argumentation that Generation Y informs itself about matters of interest and is more worried about conforming general societal concerns.
5.4 Perceived behavioural control of German Generation Y
With regard to the relationship between perceived behavioural control and green purchase intention statistically positive results were unveiled (H1c) which had even the strongest correlation and highest mean value with 3.58 (see Table 4) among all tested IVs in this study. As stated by Ingelhart (as cited in Egri & Ralston, 2004) this might indicate that Generation Y forms a societal subculture with own values and due to their individualistic ambitions and the firm idea of self-actualisation German Generation Y perceives a high behavioural control over its intentions and thus purchases green. Remarkably, these outcomes comply with studies undertaken among presumably collectivistic Asian consumers, e.g. in India (Paul et al., 2015), Thailand (Maichum et al., 2016) or Taiwan (Chen & Hung, 2016), than with Ruiz de Maya et al.’s (2011) research conducted in eight European countries, where perceived behavioural control was found to only have slight influence on the green purchase intention.

5.5 Importance of eco-labelling for German Generation Y
The results of this study confirmed a significant positive relationship between eco-labelling and green purchase intention (H2a), though presenting a relatively low mean score of 3.27 and the highest SD = .831 among all measured IVs (see Table 4). This outcome gives an indication that members of Generation Y have relatively diverging opinions concerning eco-labels and may to some extent critically review pseudo green eco-labels (Barton & Egan, 2012). Nevertheless, it seems that eco-labels still appeal to the environmentally-conscious customer segment of Generation Y in Germany (Furlow, 2010) and advance customers’ willingness to buy green products (Chu & Chen, 2012). A finding that is in line with other studies conducted on this young generational cohort and the influence of eco-labels such as Joshi and Rahman’s (2015b) study in India, Din et al.’s (2016) and Nizam et al.’s (2014) research in Malaysia, Taken Smith and Brower’s (2012) results from the USA and Magnusson et al.’s (as cited in Grankvist et al., 2004) study in the Swedish context. Interestingly, outcomes of research conducted with customers of all ages such as Rahbar and Wahid’s (2011) study identify non-significant relations between eco-labels and green purchase intention while Rex and Baumann (2007) also emphasise their doubt about the importance of eco-labels for the purchase intention. These results indicate that perceptions towards eco-labelling may change during different life-cycle stages. Thus, the development of attitudes and perceptions concerning eco-labels might possibly also apply for Generation Y in the future.
5.6 Price sensitivity of German Generation Y
A negative and significant relationship between price sensitivity and green purchase intention of German Generation Y for FMCGs was found (H2b). Therewith, the results of this study approve Liobikiene et al.’s (2017), Joshi and Rahman’s (2015a) as well as Young et al.’s (2010) study outcomes that price sensitivity impedes green purchasing. Contrastingly, Magnusson et al.’s (as cited in Saleki & Seyedsaleki, 2012) point of view that the price for green products should not exceed the price for conventional products is refuted for Generation Y in Germany, since paying an extra for green FMCGs in general was found rather to be acceptable for them. This supports European’s typical characteristic to be willing to pay an extra for ecological friendly products, as highlighted by Saleki and Seyedsaleki’s (2012). For German Generation Y even a surcharge of 10% for ecological FMCGs is considered as relatively reasonable. Still it is believed, by decreasing the price for green FMCGs the purchase intention among them could be improved; an idea that was also suggested for Croatian, Austrian, Lithuanian and Australian customers of all ages by the studies of Radman (2005), Liobikiene et al. (2017) and Lea and Worsley (2005).

5.7 Moderation effect of external determinants
This study did not validate H3 and along with that a moderation effect of eco-labelling and price sensitivity on the relationship between environmental attitude and green purchase intention of German Generation Y for FMCGs. Therefore, neither Rokko and Uusitalo’s (2008) results of a negative moderation, nor Joshi and Rahman’s (2015a) and Guagnano et al.’s (1995) findings of a positive moderation of external determinants can be supported for German Generation Y in this study. Also Mainieri et al.’s (1997) conclusion of a non-directional moderating influence of external determinants on the relationship between environmental attitude and green purchase intention cannot be confirmed for the German Generation Y context.
6 Conclusion
The subsequent chapter concludes the paper by summarising the key findings of the data analysis, highlighting the academic and practical relevance of the research, stating the limitations as well as giving recommendations for further research.

6.1 Answer to the research question
This research sought to find an answer to the question what the relationship of internal, social and external determinants towards the green purchase intention of German Generation Y for fast moving consumer goods is. Hence, the researchers aimed to determine not only the extent to which the green marketing tools eco-labelling and price, as external determinants influence the green purchase intention of this generational cohort, but also what relation planned environmental behaviour, as internal and social determinants, has towards purchasing green among this generation. Next to that, the researchers investigated a possible moderating effect of the green marketing tools eco-labelling and price on the relationship between environmental attitude and green purchase intention.

Based on the empirical findings of this study and the statistical inferences made with a sample of 401 respondents the following conclusions can be made:

Firstly, overall it was detected that German Generation Y shows a considerable positive intention to purchase environmentally-friendly, since they are rather willing to buy green-labelled FMCGs and rather avoid buying environmentally harmful products.

Secondly, in terms of internal determinants, it can be concluded that the German Generation Y shows a positive attitude towards the environment by being environmentally-concerned and being convinced that environmental protection efforts are useful to help preserve nature. Moreover, German Generation Y believes that they have a rather strong behavioural control over their purchasing, as they not only have the willingness and many opportunities to do buy green, but also the confidence that they will purchase green FMCGs. Hence, the two IVs conceptualising internal determinants in this study show a significant and positive relation towards the green purchase intention of German Generation Y for FMCGs, whereby indicate the strongest association among all analysed IVs.

Thirdly, regarding social determinants, social/subjective norms turned out to be significantly and positively related to the green purchase intention of German Generation Y. Interestingly, it seems that partly external pressure from reference groups influence the individual members
of German Generation Y to purchase green, but more essentially one’s moral responsibility and acting towards the good of society appear to be more relevant for this generation to purchase green.

Fourthly, with regard to the external variables, it can be stated that eco-labelling evokes also a positive and significant relationship towards German Generation Y’s intention to buy green FMCGs. While the awareness and attitude towards eco-labels are high respectively positive among the members of Generation Y, it seems that it is rather less important for this cohort to buy FMCGs that are being certified by a known environmental organisation. Interestingly, a wider spread of opinions concerning eco-labels could be discovered. On the other hand, it appears that German Generation Y is rather less price sensitive, although it seems that the product price is fairly important to the generation, they are generally willing to pay more for environmentally-friendly FMCGs, even an extra 10% per product is acceptable. Also here the spread of results is slightly bigger indicating differing opinions concerning the importance of price when buying green. Nevertheless, the less price sensitive a member of German Generation Y is, the more positive is his/her intention to purchase green.

Fifthly, in terms of moderation effect neither of the two tested external determinants, eco-labelling nor price sensitivity, could be confirmed to moderate the relationship between environmental attitude and green purchase intention of German Generation Y for FMCGs.

Lastly, it was found that the demographic factors age, gender, education, net-income and monthly spending do not determine the green purchase intention of German Generation Y for FMCGs, except for a practical education which might be an indication for a stronger green purchase intention.

6.2 Contribution of research
In the following it is discussed what value this research paper can contribute. Thereby, the academic contribution is discussed first followed by practical implications of this study.

6.2.1 Academic contribution of research
As identified earlier, it appeared that in the context of the Generation Y in Germany so far no research has been conducted regarding factors that influence the green purchase intention of this generational cohort. Also in the wider context of European countries only limited studies
dealt with this issue which is of rising interest in academic literature especially in recent studies in the developing country context.

Hence, with this study the researchers have contributed in particular to give a first impression, statistical evidence and narrowing the current academic gap for the research case of Generation Y in Germany by focussing on the internal, social as well as external factors and their influence on the intention to purchase green FMCGs; and in the wider sense also to providing a better understanding for the European context.

6.2.2 Practical implications of research

Next to the academic contribution this research study has made, also practical implications can be derived.

Firstly, in terms of practical relevance for retailers, this study gives an indication that green-labelled products should be included in the product portfolio of retailers in Germany and should also be featured with eco-labels, as Generation Y was found to show a rather strong intention to purchase environmentally-friendly FMCGs which is increased when the FMCG is certified with an eco-label. Due to their relative price insensitivity and its respective size in the overall German population, Generation Y depicts a good potential as key market for green-marketed FMCGs.

Moreover, this research may be of use in terms of FMCG companies’ marketing strategies. As this study found that not only internal and social, but also external factors in terms of marketing tools determine the green purchase intention, marketers should consider all three factors in their green marketing strategy. This can be done by addressing environmental attitudes/concerns, highlighting social norms and the responsibility towards society, explaining that it lies within the customer’s own control to purchase green and that he/she can make a difference by doing so, having their products certified with an eco-label and lowering the prices of green products as much as possible whereby a range of paying up to 10% extra for green features of the product is still acceptable. Interestingly, demographic characteristics within this generational cohort do not determine the green purchase intention, except for a practical education which might be an indication for a stronger purchase intention and thus can be relatively disregarded in the marketing communication. Hence, considering the growing importance of Generation Y as a major consumer market in Germany, designing a suitable marketing strategy with the support of these study results to push sales and market share of green products is valuable.
6.3 Limitations of research

Despite the matter that research strategy and data collection process were thoughtfully considered in advance to conducting primary research, restraints for this research have been encountered which should be cautiously taken into account when interpreting the results.

Firstly, as identified earlier in the paper, current academic literature in the German context lacks a commonly agreed time period that refers to the Generation Y, being born in Germany. As our study applies the age range proposed by Mangelsdorf (2015) and thus included the birth years 1980-1995, consequently certain birth years suggested by other academics were disregarded. Hence, this can affect the generalisability of research results, as outcomes would change, if a different age label is applied to the German Generation Y context.

Secondly, this research project applied amongst others the convenience sampling method to expedite the data collection process and be cost effective; hence the questionnaire was partially distributed to readily available respondents from the researchers’ personal network. Although statistical inferences about the entire research population were made based on a sample of 401 respondents which gives a 95% confidence level for a 5% margin of error (Saunders et al., 2016), it needs to be considered that the collected data is to some extent biased and may not accurately depict the entire research population. This could be seen in the sample’s mean age of 25.4 years which indicates that data is collected rather from younger members of German Generation Y.

6.4 Recommendations for further research

With this research paper the link between internal, social and external factors towards the green purchase intention of German Generation Y was unveiled and contributed to a better understanding of this arising customer segment in Germany. Based on this study further directions for future research can be derived.

In first instance this study discovered that the generational cohort of German Generation Y has a rather strong purchase intention for environmentally-friendly FMCGs. As academic literature stresses the action gap between intention and actual behaviour, it is suggested to further investigate the actual purchase behaviour for FMCGs by conducting field research. With the gathered information, a possible discrepancy between the rather strong purchase intention found in this research, and the actual behaviour of Generation Y can be academically proven. Practitioners on the other hand can make use of such information to adapt to the actual purchase behaviour of this cohort.
Moreover, this research investigated the case of FMCGs, products which are quickly sold at rather low cost. Further research could focus on analysing the green purchase intention of German Generation Y with regard to slow moving consumer goods such as electronic devices, furniture, cars etc. Similarities and/or differences may be observed in the purchase intention respectively behaviour which may help especially marketers to emphasise certain aspects of the particular products more than others.

This study generally confirmed the relationship between internal, social and external determinants with German Generation Y’s intention to purchase green. However, due to the scope of study and the cross-sectional time horizon merely few factors were included as IVs in this study. Hence, to receive a broader picture and get a better understanding of possible influencers towards the green purchase intention of this cohort, additional factors such as governmental regulations, the role of (social) media or other green marketing tools such as advertisement, brand or packaging could be researched additionally. Furthermore, a longitudinal study would help identifying whether attitudes, perceived control, the role of reference groups/societal norms or the importance of green marketing tools alter over time, helping especially marketers and other practitioners to adapt their strategies.

Lastly, this study has put its focus on the German Generation Y context to give statistical evidence and narrowing the current academic gap in the European context. It is suggested to find further statistical evidences from Generation Y in other European country contexts to evaluate more deliberately on the explanatory power of this study.
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willingness-to-pay. *Journal of Environmental Psychology, 40*, 218-227. doi: 10.1016/j.jenvp.2014.06.010


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## Appendix

Appendix 1 Questionnaire matrix

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Information needed</th>
<th>Questionnaire question</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1-H3</td>
<td>Green purchase intention - Individual’s willingness to favour green products over regular products - Likelihood to purchase green products</td>
<td>Green purchase intention (5-point Likert-style rating) 1. I am willing to buy FMCG products that are labelled as environmentally friendly. 2. I avoid buying FMCG products which are potentially harmful to the environment. 3. I have changed/want to change my principal FMCG products for ecological reasons. 4. When I have to choose between two similar products, I choose the one that is less harmful to the environment.</td>
<td>Kanchanapibul et al. (2014) Lai &amp; Cheng (2016)</td>
</tr>
<tr>
<td></td>
<td>Environmental attitude - Individual’s importance of environmental preservation and promotion - Individual’s sustainable consumption pattern - Individual’s environmental concern and awareness</td>
<td>Environmental attitude (5-point Likert-style rating) 1. I am concerned about the environment. 2. I would be willing to reduce my consumption to help protect the environment. 3. I would donate part of my own money to help protect the environment. 4. I think environmental protection is meaningless and a waste of money. (Reversed)</td>
<td>Uddin &amp; Khan (2016) Lee (2008) Synodinos (2014)</td>
</tr>
<tr>
<td>H1a: Environmental attitude is positively related to the green purchase intention of the German Generation Y.</td>
<td>Social/subjective norms - External pressure perceived by individual’s reference groups - Degree of moral responsibility towards society - Individual’s importance of having a positive social image</td>
<td>Social/subjective norms (5-point Likert-style rating) 1. Buying environmentally-friendly FMCG products sets a good example 2. Society will think it is a good thing if I purchase environmentally friendly FMCGs. 3. Buying environmentally-friendly FMCG products can make a real difference to the environment and consequently the good of society. 4. Most people who are important to me would want me to purchase green products when going for purchasing. 5. My family/friends/colleagues actively encourage me to buy green FMCG products. 6. My friend’s/family’s/colleagues’ positive opinion influence me to purchase green FMCG products.</td>
<td>Liobikiene et al. (2017) Synodinos (2014) Paul et al. (2015)</td>
</tr>
<tr>
<td>H1b: Social/subjective norms are positively related to the green purchase intention of the German Generation Y.</td>
<td>Perceived behavioural control - Individual’s ability (time and monetary resources) - Individual motivation - Individual’s level of adequate control</td>
<td>Perceived behavioural control (5-point Likert style rating) 1. If it were entirely up to me, I am confident that I will purchase green FMCG products. 2. I have resources to purchase green FMCG products. 3. I have the willingness to purchase green FMCG products. 4. There are likely to be plenty of</td>
<td>Paul et al. (2015) Synodinos (2014)</td>
</tr>
</tbody>
</table>
opportunities for me to purchase green FMCG products.
5. I feel that purchasing green FMCG products is not totally within my control (Reversed)
6. There is a lot I can do about the environment when I purchase green FMCGs.

<table>
<thead>
<tr>
<th>H2a: Eco-labelling is positively related to the green purchase intention of the German Generation Y.</th>
<th>Eco-labelling</th>
<th>Eco-labelling (5-point Likert style rating)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I am aware of eco-labels on FMCG</td>
<td>1.</td>
<td>1. I am aware of eco-labels on FMCG</td>
</tr>
<tr>
<td>2. I have a positive attitude towards buying eco-labelled FMCG products.</td>
<td>2.</td>
<td>2. I have a positive attitude towards buying eco-labelled FMCG products.</td>
</tr>
<tr>
<td>3. I take eco-labels into account during FMCG shopping.</td>
<td>3.</td>
<td>3. I take eco-labels into account during FMCG shopping.</td>
</tr>
<tr>
<td>4. I have a tendency to switch to an eco-labelled version of a FMCG product.</td>
<td>4.</td>
<td>4. I have a tendency to switch to an eco-labelled version of a FMCG product.</td>
</tr>
<tr>
<td>5. I only purchase green FMCG products if they are certified by an environmental organization</td>
<td>5.</td>
<td>5. I only purchase green FMCG products if they are certified by an environmental organization</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>H2b: Price sensitivity is negatively related to the green purchase intention of the German Generation Y.</th>
<th>Price sensitivity</th>
<th>Price sensitivity (5-point Likert style rating)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Product price is the most important product feature to me.</td>
<td>1.</td>
<td>1. Product price is the most important product feature to me.</td>
</tr>
<tr>
<td>2. I am willing to pay more for environmentally friendly FMCG. (Reversed)</td>
<td>2.</td>
<td>2. I am willing to pay more for environmentally friendly FMCG. (Reversed)</td>
</tr>
<tr>
<td>3. It is acceptable to pay 10% more for FMCG that are produced, processed and packaged in an environmentally friendly way. (Reversed)</td>
<td>3.</td>
<td>3. It is acceptable to pay 10% more for FMCG that are produced, processed and packaged in an environmentally friendly way. (Reversed)</td>
</tr>
<tr>
<td>4. I would be willing to spend an extra 10€ a week in order to buy less environmentally harmful products. (Reversed)</td>
<td>4.</td>
<td>4. I would be willing to spend an extra 10€ a week in order to buy less environmentally harmful products. (Reversed)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Control variables</th>
<th>Demographic variables (age, gender, income, literacy, spending)</th>
<th>Lee (2008)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What is your age? (continuous)</td>
<td>1.</td>
<td>1. What is your age? (continuous)</td>
</tr>
<tr>
<td>2. What is your gender? (nominal)</td>
<td>2.</td>
<td>2. What is your gender? (nominal)</td>
</tr>
<tr>
<td>3. What is your current monthly net income? (continuous)</td>
<td>3.</td>
<td>3. What is your current monthly net income? (continuous)</td>
</tr>
<tr>
<td>4. What is your highest educational attainment? (ordinal)</td>
<td>4.</td>
<td>4. What is your highest educational attainment? (ordinal)</td>
</tr>
<tr>
<td>5. How much money do you spend in total on fast moving everyday products per month? (per person in whole € (continuous)</td>
<td>5.</td>
<td>5. How much money do you spend in total on fast moving everyday products per month? (per person in whole € (continuous)</td>
</tr>
</tbody>
</table>
Appendix 2 Questionnaire (English version)

Survey about Generation Y - purchase intention for environmentally friendly marketed everyday products

Dear participant,

are you born between 1980 and 1995 and from Germany or live there? Then we seek you!

We are Ilona Schnieder and Svenja Bouwmann from Dalarna University in Sweden and as part of our master thesis in Business Administration we investigate the purchase intention of your generation for environmentally friendly fast moving everyday products such as food, toiletries and stationery products.

Are you concerned about the environment? Do you consider eco-labels when purchasing? Whether you do or don't, we are interested in your opinion!

Please take 6-8 minutes and help us by filling in the following survey. Participation in the survey is voluntary and you have the possibility to withdraw from it or continue it later at any time. The collected data is coded anonymously, remains confidential, is solely used for the purpose of the thesis and not forwarded to third parties.

Thank you very much for your support!
Ilona & Svenja

Please note that the term ”fast moving everyday products” in this questionnaire refers to consumer goods which are usually consumed/used up quickly (e.g. food, toiletries, stationery). Products that are in use for longer (e.g. cars, furniture, electronical devices) are NOT investigated in this study.

1. What is your age?
   ______ years

2. I am:
   O female
   O male
   O other

3. What is your current monthly net income?
   O under € 750
   O € 750 - € 1499
   O € 1500 - € 2249
   O € 2250 - € 2999
   O € 3000 or more
4. What is your highest educational attainment?
   O secondary school qualification (Hauptschulabschluss)
   O secondary school qualification (Realschulabschluss)
   O secondary school qualification (Fachhochschulreife/Fachabitur)
   O secondary school qualification (Abitur)
   O completed apprenticeship
   O vocational qualification on the level of a Meister qualification
   O bachelor’s degree
   O master’s degree/Magister degree/Diplom degree/Staatsexamen degree
   O doctoral degree
   O other

5. How much money do you spend in total on fast moving everyday products per month? (per person in whole €, e.g. 271)
   €__________

Environmental attitude (5-point Likert-style rating)
1. I am concerned about the environment.
2. I would be willing to reduce my consumption to help protect the environment.
3. I would donate part of my own money to help protect the environment.
4. I think environmental protection is meaningless and a waste of money. (Reversed coding)

Subjective norms/social influence (5-point Likert-style rating)
1. Buying environmentally friendly everyday products sets a good example.
2. Society will think it is a good thing if I purchase environmentally friendly everyday products.
3. Buying environmentally friendly everyday products can make a real difference to the environment and consequently benefits the societal good.
4. My family/friends/colleagues would want me to purchase environmentally friendly everyday products when going for purchasing.
5. My family/friends/colleagues actively encourage me to buy environmentally friendly everyday products.
6. My family’s/friends’/colleagues’ positive opinion influences me to purchase environmentally friendly everyday products.

Perceived behavioural control (5-point Likert style rating)
1. If it were entirely up to me, I am confident that I will purchase environmentally friendly everyday products.
2. I have the resources to purchase environmentally friendly everyday products.
3. I have the willingness to purchase environmentally friendly everyday products.
4. There are likely to be plenty of opportunities for me to purchase environmentally friendly everyday products.
5. I feel that purchasing environmentally friendly everyday products is not totally within my control. (Reversed coding)
6. There is a lot I can do for the environment when I purchase environmentally friendly everyday products.

Eco-labelling (5-point Likert style rating)
1. I am aware of eco-labels on everyday products.
2. I have a positive attitude towards buying eco-labelled everyday products.
3. I take eco-labels into account during everyday product shopping.
4. I have a tendency to switch to an eco-labelled version of an everyday product.
5. I only purchase environmentally friendly everyday products if they are certified by an environmental organization.
Price sensitivity (5-point Likert style rating)
1. Product price is the most important product feature to me.
2. I am willing to pay more for environmentally friendly everyday products. (Reversed coding)
3. It is acceptable to pay 10% more for everyday products that are produced, processed and packaged in an environmentally friendly way. (Reversed coding)
4. I would be willing to spend an extra 10€ a week in order to buy less environmentally harmful everyday products. (Reversed coding)

Green purchase intention (5-point Likert-style rating)
1. I am willing to buy everyday products that are labelled as environmentally friendly.
2. I avoid buying everyday products which are potentially harmful to the environment.
3. I have changed/want to change my principal everyday products for ecological reasons.
4. When I have to choose between two similar everyday products, I choose the one that is less harmful to the environment

Thank you very much for your participation! You helped us a lot!

We would appreciate it, if you shared this survey with your friends, family or colleagues.

If you have questions or concerns, feel free to contact us under hilosc@du.se or our supervisor Dr. Tao Yang under tin@du.se.

Likert-style rating is measured on a scale from 1 to 5:

1-strongly disagree
2-disagree
3-partly agree partly disagree
4-agree
5-strongly agree
Appendix 3 Questionnaire (German version)

Umfrage über Generation Y – Kaufintention für umweltfreundlich vermarktete Alltagsprodukte

Liebe/r Teilnehmer/in,

Wurdest du zwischen 1980 und 1995 geboren und kommst aus oder lebst in Deutschland? Dann suchen wir dich!

Wir sind Ilona Schnieder und Svenja Bouwmann von der Dalarna University in Schweden und im Zuge unserer Masterarbeit in International Business and Marketing erforschen wir die Kaufintention deiner Generation für umweltfreundliche kurzlebige Alltagsprodukte wie z.B. Lebensmittel, Drogerieartikel und Schreibwaren.

Ist dir die Umwelt wichtig? Achtest du beim Einkaufen auf Ökolabels? Ob ja oder nein, wir sind an deiner Meinung interessiert!


Vielen Dank für deine Unterstützung!
Ilona & Svenja

Hinweis: Der Begriff "kurzlebige Alltagsprodukte" bezieht sich auf Produkte, die in der Regel schnell verbraucht werden (z.B. Lebensmittel, Drogerieartikel, Schreibwaren). NICHT gemeint sind folglich langlebige Produkte (z.B. Autos, Möbel, Elektrogeräte).

1. Wie alt bist du?
   _____ Jahre

2. Ich bin:
   O weiblich
   O männlich
   O anderes

3. Wie hoch ist dein monatliches Einkommen?
   O unter 750 €
   O 750 - 1499 €
   O 1500 - 2249 €
   O 2250 - 2999 €
   O 3000 € oder mehr
4. What is your highest educational attainment?
   O Hauptschulabschluss
   O Realschulabschluss
   O Fachhochschulreife/Fachabitur
   O Abitur
   O abgeschlossene Berufsausbildung
   O Abschluss auf Meisterebene
   O Bachelorabschluss
   O Masterabschluss/Magister/Diplom/Staatsexamen
   O Doktor
   O Sonstiges

5. Wie viel Geld gibst du monatlich insgesamt für kurzlebige Alltagsprodukte wie Lebensmittel, Drogerieartikel etc. aus? (Angabe pro Person in ganzen €, z.B. 271 €)
   _____ Euro

Einstellung zur Umwelt (5-point Likert-style rating)
1. Ich bin umweltbewusst.
2. Ich bin bereit meinen Konsum zu reduzieren, um die Umwelt zu schützen.
3. Ich bin bereit einen Teil meines eigenen Geldes zu spenden, um die Umwelt zu schützen.
4. Ich denke, Umwelt schutzmaßnahmen sind bedeutungslos und Geldverschwendung. (Reversed coding)

Gesellschaftliche Normen/Soziale Einflüsse (5-point Likert-style rating)
1. Der Kauf umweltfreundlicher Alltagsprodukte ist vorbildlich und setzt ein gutes Beispiel.
3. Der Kauf umweltfreundlicher Alltagsprodukte kann einen entscheidenden Beitrag zum Umweltschutz leisten und somit dem Wohl der Gesellschaft dienen.
4. Meine Familie/Freunde/Kollegen würde(n) wollen, dass ich umweltfreundliche Alltagsprodukte kaufe.
5. Meine Familie/Freunde/Kollegen ermutigen mich aktiv umweltfreundliche Alltagsprodukte zu kaufen.
6. Eine positive Umwelteinstellung meiner Familie/Freunde/Kollegen beeinflusst mich/würde mich beeinflussen umweltfreundliche Alltagsprodukte zu kaufen.

Kontrolle über das Kaufverhalten (5-point Likert style rating)
2. Ich habe das Geld, umweltfreundliche Alltagsprodukte zu kaufen.
3. Ich habe den Willen, umweltfreundliche Alltagsprodukte zu kaufen.
4. Es gibt viele Möglichkeiten für mich, umweltfreundliche Alltagsprodukte zu kaufen.
5. Ich habe das Gefühl, dass der Kauf umweltfreundlicher Alltagsprodukte nicht ganz in meiner Kontrolle liegt.(Reversed coding)
6. Mit dem Kauf umweltfreundlicher Alltagsprodukte, habe ich das Gefühl, viel für die Umwelt zu tun.

Ökolabels und Umweltzeichen (5-point Likert style rating)
1. Ökolabels/Umweltzeichen auf Alltagsprodukten nehme ich bewusst wahr.
2. Ich habe eine positive Einstellung zum Kauf von Alltagsprodukten mit Ökolabel/Umweltzeichen.
5. Ich kaufe nur dann umweltfreundliche Alltagsprodukte, wenn sie durch eine Umweltorganisation zertifiziert sind.
Preissensibilität (5-point Likert style rating)
1. Der Preis ist für mich das wichtigste Merkmal eines Alltagsprodukts.
2. Ich bin bereit, für umweltfreundliche Alltagsprodukte mehr zu zahlen. (Reversed coding)
3. Es ist akzeptabel, 10% mehr für umweltfreundliche Alltagsprodukte zu zahlen. (Reversed coding)
4. Ich wäre bereit, 10€ pro Woche mehr auszugeben, um umweltfreundlichere Alltagsprodukte zu kaufen. (Reversed coding)

Kaufintention (5-point Likert-style rating)
1. Ich bin bereit, Alltagsprodukte zu kaufen, die als umweltfreundlich gekennzeichnet sind.
2. Ich vermeide es, Alltagsprodukte zu kaufen, die potenziell umweltschädlich sind.
4. Wenn ich zwischen zwei ähnlichen Alltagsprodukten wählen muss, entscheide ich mich für die umweltfreundlichere Variante.

Vielen Dank für deine Teilnahme! Du hast uns sehr geholfen!

Wir würden uns freuen, wenn du die Umfrage auch mit deinen Freunden, Familie oder Kollegen teilst.

Falls du Fragen oder Anmerkungen hast, melde dich gerne bei uns unter h16ilose@du.se oder bei unserer Dozentin Dr. Tao Yang unter tjn@du.se.

Likert-style rating is measured on a scale from 1 to 5:

1-Stimme überhaupt nicht zu
2-Stimme eher nicht zu
3-teils teils
4-Stimme eher zu
5-Stimme voll und ganz zu
Appendix 4 Scatterplots

Figure Scatterplot indicating the relationship between environmental attitude and green purchase intention

Figure Scatterplot indicating the relationship between social/subjective norms and green purchase intention

Figure Scatterplot indicating the relationship between perceived behavioural control and green purchase intention

Figure Scatterplot indicating the relationship between eco-labelling and green purchase intention

Figure Scatterplot indicating the relationship between environmental attitude and green purchase intention