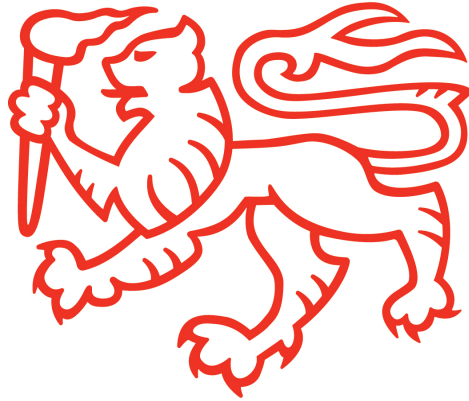




UNIVERSITY *of* **TASMANIA**

GREEN CONSUMER BEHAVIOUR: STUDYING FACTORS INFLUENCING CONSUMERS' GREEN PURCHASE INTENTIONS, AND THE RELATIONSHIP BETWEEN INTENTIONS AND ACTUAL PURCHASES

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Doctor of Philosophy

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Declaration of Originality

This thesis contains no material which has been accepted for a degree or diploma by the University or any other institution, except by way of background information and duly acknowledged in the thesis, and to the best of my knowledge and belief no material previously published or written by another person except where due acknowledgement is made in the text of the thesis, nor does the thesis contain any material that infringes copyright.

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Statement of Ethical Conduct

The research associated with this thesis abides by the international and Australian codes on human and animal experimentation, the guidelines by the Australian Government's Office of the Gene Technology Regulator and the rulings of the Safety, Ethics, and Institutional Biosafety Committees of the University. <Ethics Approval No/s X and Y>. An approval from the Tasmanian Social Sciences Human Research Ethics Committee (TSS-HREC) was sought, and this approval was granted with the approval number HERC # H0018125.

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Abstract

Green products have long been promoted as one of the possible solutions to the environmental dilemma that the earth is facing. Recent research also indicates that consumers are also increasingly willing to contribute to the environmental cause by purchasing green products, while businesses are also responding by making green products more readily available. Yet, when competing against conventional products, green products continue to struggle for market share. Unfortunately, studies that have attempted to address this issue have provided conflicting answers by focusing too narrowly on consumers in developed countries. Further, an all-encompassing theory of green consumer behaviour does not exist, as existing research has primarily focused on predicting intentions and not on actual purchase behaviour. Therefore, this establishes the need to conduct further research to better understand the factors that influence green purchase intentions (GPIs) so that the relationship between intentions and actual green purchases (AGPs) can be examined.

Using the Theory of Planned Behaviour (TPB), this research identifies and attempts to address some of the gaps in the existing research on green purchase intention and behaviour by extending and modifying the TPB to the context of green consumers in Pakistan. Hypothesis testing was performed using AMOS based structural equation modelling on a sample ($N = 426$) of Pakistani consumers.

The results of this analysis showed that religiosity is an important value that significantly influences consumers' attitudes towards green products, along with consumers' beliefs about the effectiveness of their actions [i.e., perceived consumer effectiveness (PCE)]. Further, this study also found that GPIs are significantly influenced by consumers' perceptions of quality. Thus, this study identified attitudes, perceived behavioural control, PCE, religiosity and perceived quality as variables that significantly influence GPIs. Additionally, this study found that GPIs have a positive and significant relationship with AGPs. Finally, this study used the one-way analysis of variance test to examine if Pakistani consumers' GPIs would differ based on socio-

demographic characteristics, such as age, gender and education. It was found that Pakistani men have significantly higher GPIs compared to Pakistani women. However, significant differences were not found based on education and age.

Based on its findings, this study makes important recommendations that are useful to businesses and policymakers, which include improving the availability and affordability of green products and using promotional tools, such as advertising, to improve consumers' perceptions of the effectiveness of their actions (i.e., green buying) in making meaningful environmental contributions. Similarly, this study also recommends the use of promotional tools to disseminate information regarding green product availability and functionality, and to counter consumers' misperceptions regarding the quality of green products. Finally, based on the important role that religiosity plays in affecting GPIs and AGPs, through its effect on PCE and attitudes, this study recommends targeting Pakistan consumers' religiosity by alluding to prosocial values propagated in Islam to encourage consumers to buy environmentally friendly products.

This study concludes with a discussion concerning its limitations in terms of methodology and generalisability of the findings. It also discusses what precautionary measures were taken to guard against these limitations and how future research can address these limitations.

Chapter 1. Introduction to the Research

1.1. Background

Human society has always relied on the resources available in the natural environment to fulfil its needs. Over time, this has resulted in continued environmental degradation (Hughes 2016). The development of human society has been accompanied by diverse environmental dilemmas (Markham 2019). One of these dilemmas is the utilisation of fossil fuels and other natural resources to mass-produce goods for human consumption (Bose 2010; Crocker 2016). The extensive consequences of this practice include global warming, environmental degradation, ozone layer depletion and life-threatening health hazards (Bayeh & Alemayehu 2019; Rossati 2017). According to the *Living Planet Report 2018*, there has been a 60% decline in the volume of wildlife in just over 40 years. The same report also identifies human consumption patterns as the biggest threat to the planet (Barrett et al. 2018). This indicates that the natural environment may be irreparably damaged if humans continue the current pattern of natural resource consumption.

Fortunately, all is not bleak. A possible solution to this environmental dilemma, in part, exists in the form of low-impact products (hereinafter referred to as 'green products') (Kondawar & Deshmukh 2018; Lee, Ozaki & Lee 2017). There has also been a progressive increase in consumer environmental consciousness due to (i) environmental disasters, such as the Australian bushfires (Yu et al. 2020), Amazon fires (Alencar et al. 2020), and smogs of 2016 in Delhi (Kanawade et al. 2020) and Lahore (Ashraf et al. 2019), and (ii) the rise of pressure groups, such as Greenpeace (Zelko 2017) and Deep Green Resistance (Ward et al. 2011). Similarly, international governments including Pakistan's (Ullah et al. 2021) have also ratified treaties and conventions, such as the Kyoto Protocol (Adu & Kuwornu 2019) and the Aarhus Convention (Barritt 2019), which require businesses to perform sourcing, manufacturing and selling activities in an environmentally responsible manner (Dupuy & Viñuales 2018; Klintman 2016; Zhou & Feng

2017). Additionally, international governments are obliged to ensure sustainable consumption and production patterns as per the requirements of the United Nation's Sustainable Development Goal 12 (Franco & Newey 2020). Therefore, as a consequence of heightened levels of awareness and increasing public and regulatory activism, consumers have become sensitised not just to broader environmental issues but also to the impact of their own consumption on the environment (Okada, Tamaki & Managi 2019; Zhang et al. 2019). As a result, consumers are more likely to support and stay loyal to businesses that exhibit environmental responsibility (Panda et al. 2019; Wu & Cheng 2019). This points to a major shift in consumer attitudes, to the point that some are even willing to pay more for environmentally sustainable products (Wei, Ang & Jancenelle 2018; Zhong & Chen 2019).

Businesses have also responded to these changing market dynamics by introducing green products in almost every product category (Ottman 2017). However, despite favourable consumer attitudes and expressed willingness to buy green products, these products continue to struggle to obtain market share when compared with conventional products (Doksaeter & Nordman 2019; White, Hardisty & Habib 2019). This establishes the need for further research to understand consumer intentions and behaviour to help them transition from buying and using conventional products to green products.

In the literature, generic theories that predict intentions, such as the Theory of Reasoned Action (TRA) and the Theory of Planned Behaviour (TPB), have failed to predict consumers' green purchase intentions (GPIs) to a higher degree Nigbur, Lyons and Uzzell (2010); (Paul, Modi & Patel 2016; Teng & Wang 2015). Attempts to adapt these theories to the context of green consumption through theoretical modifications have resulted in better explanations (Armitage & Conner 2001). However, these attempts have attributed various factors to consumers' lack of adoption of green products, such as poor perception of quality (Newman, Gorlin & Dhar 2014) and price (Aschemann-Witzel & Zielke 2017), scepticism towards the environmental contribution of green consumption (Jaiswal & Kant 2018), a lack of information (Judge, Warren-Myers & Paladino 2019), and situational influences (Grimmer, Kilburn & Miles 2016). This is further complicated by the lack of major

research involving consumers from developing markets, such as Asian consumers, who constitute 60% of the world's market. Although research has found that consumers in developing and developed markets respond differently to factors affecting their intentions towards green products (Morren & Grinstein 2016), the focus of research in this area to date has been on consumers in developed countries (Han & Stoel 2017; Liobikienė, Mandravickaitė & Bernatoniene 2016; Morren & Grinstein 2016; Morrison & Beer 2017; Scalco et al. 2017).

Therefore, in addition to not having an all-encompassing theory of green consumer behaviour that can singularly explain consumer intentions and behaviour towards green products, research in this area to date has produced conflicting conceptualisations and focused too narrowly on consumers in developed markets. This establishes the need for further research to identify the factors that influence consumers' purchase intentions towards green products in under-researched but large consumer markets, such as Pakistan (UN 2019). Further research that can identify the factors influencing GPIs and the relationship between GPIs and actual green purchases (AGPs) will contribute towards theory development in green consumption. This research will also provide useful insights to green businesses by helping them to focus on the factors that influence consumers' intention to purchase green products.

The next section will identify and discuss some of the major gaps in the existing literature on green consumption and explain how the current study will add to the green consumer theory—by addressing those gaps to improve our understanding of the factors influencing consumers' consumption of green products.

1.2. Research Gaps

Intentions are one of the most cited predictors of behaviour (Morwitz & Munz 2020). GPIs have been the subject of academic research for some decades, as researchers have attempted to understand the role of various influencing factors on the green purchase process (Balderjahn 1988; Chen & Chang 2012; Gill, Crosby & Taylor 1986). However, the existing literature is

insufficient because it is unable to offer a comprehensive and generalisable framework that is capable of accurately and significantly predicting consumers' intentions towards green products. Green consumption research has since evolved as a new paradigm in the realm of contemporary consumer research (Groening, Sarkis & Zhu 2018; Kemper, Hall & Ballantine 2019). However, the bulk of current research around GPIs has mainly focused on measuring consumers' perceptions of green products (i.e., attitudes) or perceptions of relevant others [i.e., subjective norms (SNs)] to predict GPIs. Although past studies have identified attitudes as one of the strongest predictors of GPIs (Han & Stoel 2017; Scalco et al. 2017), not much attention has been paid to the factors that affect attitudes, such as religiosity and perceived consumer effectiveness (PCE). Similarly, despite past studies reporting that consumers, at times, perceive green products to be low-quality products with a high price, there has only been limited attention paid to the role played by perceptions of quality and price in shaping GPIs (Aschemann-Witzel & Zielke 2017). The next sections will discuss these gaps in detail and explain how this current study plans to address these gaps.

1.2.1. Green consumers in developing consumer markets

Existing green consumer research has mainly focused on consumers in developed Western economies that operate in a unique demographic environment, primarily because of higher literacy rates, higher disposable incomes and a growing ageing population (UNCTAD 2018). Even though 60% of the world's consumers reside in Asia, there has only been limited research into factors that influence their GPIs (UNCTAD 2018). Even when research was conducted on Asian consumers, the focus of research had mostly been on consumers in China (Wang et al. 2019; Zhang, Geng & Sun 2017), Malaysia (Hibbert et al. 2013; Rahbar & Abdul Wahid 2011) and India (Joshi & Rahman 2019). Pakistan, a country consisting of 192 million consumers and located in South Asia with the world's sixth-largest population (UNCTAD 2018), is a major market for green products but has been largely missing in the literature on green consumer research. In addition to the sheer size of the Pakistani consumer market, approximately 42% (i.e., 81 million) of these

consumers belong to the upper and middle-income classes (Davies, Lluberas & Shorrocks 2015). This indicates that a considerable percentage of the Pakistani population has a relatively high disposable income and are likely able to afford green products, which are often perceived as expensive products (Aschemann-Witzel & Zielke 2017). Additionally, 64% of the nation is less than 30 years of age, and it now has more young people than it ever had, which is something that is forecasted to continue to increase until at least 2050 (World Population Prospects 2017). This indicates that there is great potential for green products in Pakistan, as research has found that green customers are likely to be younger than non-green ones (Chen & Chai 2010; Namkung & Jang 2017).

Unfortunately, a critical review of the literature on green consumption in the context of Pakistani consumers found that most published works contained unacknowledged theoretical and/or methodological limitations, as the procedures adopted were not supported by relevant theories. Numerous examples of inappropriate reporting practices were also observed (see Appendix A for a summary of a critical review of past green consumer research focused on Pakistan). Studies by Saleem, Eagle and Low (2018); Konuk, Rahman and Salo (2015); and Al-Swidi et al. (2014) were the only ones found to use procedures supported by relevant theories and not have reporting issues. Nevertheless, compared to these studies, the current research has a much broader scope in that it (i) modifies the existing theory to better predict intentions in a green context, and (ii) studies the relationship between intentions and actual behaviour. Further, the current research will examine the role played by personal socio-demographic characteristics, such as age, gender and education, in shaping consumers' GPIs.

It has been established that Pakistan, a large consumer market with the relevant demographics for green product uptake, has been largely missing from the literature on green consumer research. Therefore, this current research attempts to address this research gap by first identifying the factors affecting the GPIs of Pakistani consumers and then examining if Pakistani consumers' intentions lead to actual purchase behaviour.

1.2.2. Intention–behaviour discrepancy

As discussed earlier in Section 1.1, existing studies on green consumers show that despite consumers' expressed willingness to buy green products (do Paço, Shiel & Alves 2019; Sanchez-Sabate & Sabaté 2019), consumers' increasing buying power compared to the past (WESP 2019) and the improved availability of green products (Ottman 2017; Trudel 2019), consumers do not purchase green goods and services as frequently as expected (Doksaeter & Nordman 2019; Kapferer & Michaut-Denizeau 2019). This indicates that consumers' engagement in pro-environmental purchase behaviour is not always consistent with their intentions and buying power or the availability of the products (Carrington, Neville & Whitwell 2010; Englis & Phillips 2013). As pointed out by Brahim and Khalifa (2019), although consumers' spending increases, including on green products, the green glass ceiling is still unbreakable and the market share of green products is still very small. Green consumer behaviour researchers have referred to this phenomenon as the green gap (Aschemann-Witzel & Niebuhr Aagaard 2014; Carrington, Neville & Whitwell 2014), or the 30:3 syndrome, which describes the situation where a third of consumers say they are concerned about social responsibility, but ethical products only have 3% of the market share, at best (Cowe & Williams 2000).

To date, existing green consumption research has focused mostly on predicting intentions, under the assumption that intentions will likely result in actual behaviour (Judge, Warren-Myers & Paladino 2019; Panda et al. 2019; Passafaro, Livi & Kosic 2019; Wang et al. 2019). Hence, there is a need to study actual purchase behaviour along with intentions to establish if intentions can really predict actual purchases. Similarly, in the case of Pakistan, green consumption research has mostly been limited to studying the role of intentions (Ali & Ahmad 2016; Ali, Danish, et al. 2019; Ali, Ullah, et al. 2019; Konuk, Rahman & Salo 2015; Moon, Mohel & Farooq 2019). While Muzaffar (2015) and Hameed, Waris and ul Haq (2019) have attempted to study AGPs, as shown in Appendix A, most of these studies have serious theoretical and/or methodological issues, e.g., in the case of (Muzaffar 2015) the study proposes

intentions to be mediating effect of certain variables on actual green consumption. However, the author only studied the direct effect of the independent variables on actual green consumption, while no underlying theoretical support for this was discussed. Additionally, Khan and Mohsin (2017) only studied the direct role of values on actual purchase behaviour. Therefore, the current research will address this research gap by incorporating consumers' actual purchase behaviour in the conceptual model to establish if Pakistani consumers' GPIs lead to AGPs.

1.2.3. Extension of the Theory of Planned Behaviour to study green consumption in Pakistan

The current research relies on the TPB framework proposed by Ajzen (1985), which studies the interplay of attitudes, SNs and perceived behavioural control (PBC) to predict intentions. It is a generic framework to predict intentions, and several studies have successfully extended the TPB to predict GPIs (Botetzagias, Dima & Malesios 2015; Carfora et al. 2019; Judge, Warren-Myers & Paladino 2019; Wang et al. 2019). Several meta-analytic reviews have also testified to the efficacy of the TPB in predicting GPIs (Han & Stoel 2017; Morren & Grinstein 2016; Scalco et al. 2017); therefore, the TPB is a useful framework to study consumers' GPIs. However, there has been limited research attempting to extend the TPB to the context of Pakistani consumers' GPIs (Al-Swidi et al. 2014; Ali, Danish, et al. 2019; Ali, Ullah, et al. 2019). Some studies in this area (Hameed, Waris & ul Haq 2019; Muzaffar 2015) have been found to have serious theoretical and/or methodological issues (see Appendix A). Therefore, the current research addresses this research gap by extending the TPB to the context of Pakistani consumers to identify factors influencing their GPIs.

1.2.4. Modification of the Theory of Planned Behaviour

The TPB is a generic framework for predicting human intentions, and as recommended by its original proponent, Icek Ajzen (Ajzen 1991, 2015), it needs to be adapted by adding context-relevant measures to accurately predict intentions. Sustainability researchers have successfully achieved this

by adding context-relevant measures to predict green intentions, which has resulted in models with greater predictive power (Chen 2016; Paul, Modi & Patel 2016; Yadav & Pathak 2017). In the context of Pakistan, only Muzaffar (2015) has attempted to modify the TPB to suit the context of Pakistani consumers' GPIs. However, as discussed earlier, the study by Muzaffar (2015) has certain unaddressed methodological and reporting issues. Therefore, the current research addresses this research gap by modifying the generic TPB to better suit the context of Pakistani consumers' GPIs.

1.2.5. Role of religiosity and perceived consumer effectiveness in shaping attitudes

Green consumption research has consistently identified attitudes as the strongest influencer of GPIs (Han & Stoel 2017; Morren & Grinstein 2016; Scalco et al. 2017). However, research thus far has paid scant attention to identifying the factors that shape attitudes. This establishes the need to conduct further research to identify the factors that shape consumers' attitudes towards green products.

Values and beliefs serve as the base for the formation of attitudes (Schuitema & De Groot 2015). Therefore, the current research will examine the role of religiosity, which promotes prosocial values, and PCE, which constitutes beliefs about the effectiveness of the environmental contribution of green products, in shaping consumers' attitudes towards them.

Since most religions promote prosocial behaviours (Norenzayan et al. 2016), religiosity is an important value that can influence attitudes towards prosocial behaviours, such as buying green products (Bhuan et al. 2018; Graafland 2017; Siyavooshi, Foroozanfar & Sharifi 2018; Wang, Weng Wong & Elangkovan 2019). This is highly relevant in the case of Pakistan, where 96% of the population are Muslims (Khalid & Rashid 2019) and religion is a fundamental part of the way of life (Muzaffar, Hanif & Khan 2018; Shaikh 2018). Some past studies have focused on how religiosity has shaped Pakistani consumers' attitudes towards green products (Hameed, Waris & ul Haq 2019; Razzaq, Ansari, et al. 2018; Razzaq, Razzaq, et al. 2018).

However, as discussed earlier, a critical review of these and other studies in the context of green consumption in Pakistan found most of these studies lacking in terms of their theoretical and methodological approaches, and reporting practices (see Appendix A).

Similarly, people's attitudes towards an act are also shaped by their beliefs (Jung 1971). In the case of green consumption, a relevant belief is the likelihood of getting the desired outcome from that act. Therefore, it is important to study how consumers' beliefs about the effectiveness of their actions can contribute to the environmental cause, and this is referred to as PCE (Jaiswal & Kant 2018). Researchers have established that PCE has a significant influence on attitudes and GPIs (Tan 2011; Trivedi, Patel & Acharya 2018; Wesley, Lee & Kim 2012). However, apart from the work of Moon, Mohel and Farooq (2019), there has not been any considerable research focused on studying how PCE shapes Pakistani consumers' attitudes and GPIs. Therefore, the current research will address this research gap by studying the role played by values (i.e., religiosity) and beliefs (i.e., PCE) in shaping Pakistani consumers' attitudes towards green products.

1.2.6. Role of perceptions of price and quality in shaping green purchase intentions

The literature on green consumer behaviour shows that the majority of existing theories, such as the TRA (Ajzen & Fishbein 1980), the TPB (Ajzen 1985), Acquisition-Transaction Utility Theory (Thaler 1983) and the Alphabet Theory (Zepeda & Deal 2009), work under the assumption that consumers are rational beings directed by their own self-interests. Hence, these theories have focused on personal and social influencers, such as attitudes, values, norms, and self-efficacy. Even though poor perceptions of green products, in terms of price and quality, can explain why they have only managed to secure a small market share (Aschemann-Witzel & Zielke 2017; Barbarossa & Pastore 2015; Biswas & Roy 2016), these theories do not consider the influence of these factors in shaping GPIs. Existing research in this area has returned contradictory findings regarding the influence of price and quality perceptions on consumers' GPIs. For example, some studies have found that the price

premiums imposed on green products make them less attractive compared to non-green products (Gleim et al. 2013; Gracia, Barreiro-Hurlé & Pérez y Pérez 2018; Grimmer & Bingham 2013; Tan, Ooi & Goh 2017). However, others have contradicted these findings, as they have found that consumers are willing to pay a higher price for green products if they know that the products are healthier, safer or better for the environment (Choshaly & Tih 2017; Sharma et al. 2017). Similarly, green enhancements may lead consumers to assume that the manufacturer has diverted resources away from product quality, which, in turn, results in a reduction in purchase intentions (Newman, Gorlin & Dhar 2014).

Thus, consumers' perception of green products as expensive but low-quality goods compared to conventional products might negatively affect their purchase intentions of green products (D'Souza, Taghian & Khosla 2007). Although Khan and Mohsin (2017) studied how value perceptions can influence Pakistani consumers' green product choice behaviour, there is a dearth of research examining the role of consumers' perceptions of price and quality in shaping Pakistani consumers' GPIs and AGPs. Therefore, given the conflicting findings reported by past researchers regarding the role of consumers' perceptions of quality and price, it is critical to conduct further research in this area. Hence, this study will attempt to address this research gap by studying how consumers' perceptions of green product quality influence their GPIs and AGPs.

1.2.7. Role of socio-demographic characteristics

Demographic segmentation assumes that consumers with similar socio-demographic characteristics will exhibit similar motivations, interests and lifestyles and that these characteristics will translate into similar purchase patterns (Baker & Hart 2008). Since it is easier to target demographic segments than groups of people divided along attitudinal lines (D'Souza, Taghian & Khosla 2007; Morrison & Beer 2017), researchers have recommended the use of demographic segmentation to better position green products and target their customers (Delafróoz & Moghaddam 2017; Diamantopoulos et al. 2003; Paul & Rana 2012). In the case of Pakistan,

Saleem, Eagle and Low (2018) conducted the only notable research concerning how socio-demography influences green purchase behaviour. This points to a major research gap, as research has found that consumers' GPIs significantly differ based on socio-demographic characteristics, such as age, gender and education (Chekima et al. 2016; Do Paco & Raposo 2009; González et al. 2015). Therefore, this current research will address this gap by identifying if Pakistani consumers' GPIs differ based on certain socio-demographic characteristics.

1.3. Research Questions

Based on the research gaps identified earlier, the focus of this research is to identify factors influencing Pakistani consumers' GPIs and to establish if Pakistani consumers' GPIs lead to AGPs. Further, this research will establish if Pakistani consumers' GPIs differ based on certain socio-demographic characteristics, such as age, education and gender. This research attempts to answer three main research questions designed to address the research gaps.

Research Question 1 is 'What factors influence Pakistani consumers' GPIs?' To answer this first research question, this study will extend and modify the TPB to the context of Pakistani consumers' GPIs. This involves studying the role of values (i.e., religiosity) and beliefs (i.e., PCE) in shaping attitudes, and the role of perceptions of price and quality in shaping their GPIs. To address the first research question, the following two sub-research questions are offered:

- Research Question 1a: To what extent do religiosity and PCE, through their influence on consumers' attitudes, predict the GPIs of Pakistani consumers?
- Research Question 1b: To what extent does green perceived value, in terms of quality and price, predict the GPIs of Pakistani consumers?

Further, considering the research gaps (see Section 1.2.2), one of the aims of the current research is to establish whether Pakistani consumers' GPIs lead to AGPs. Therefore, Research Question 2 is, 'Do Pakistani consumers' GPIs lead to AGPs?'

Finally, one of the aims of the current research is to address the research gap concerning the influence of demographic characteristics such as age, education, and gender on Pakistani consumers' GPIs (see Section 1.2.7). Therefore, Research Question 3 is, 'Do Pakistani consumers differ in terms of their GPIs based on personal socio-demographic characteristics?'

1.4. Research Objectives

This section presents the objectives for the current research to address the identified gaps in existing research. The objectives of the current study are:

- (i) to extend and modify the TPB, with the objective of identifying factors influencing Pakistani consumers' GPIs
- (ii) to establish whether Pakistani consumers' GPIs lead to AGPs
- (iii) to study the role of religiosity and PCE in shaping Pakistani consumers' attitudes towards green products
- (iv) to study the role of Pakistani consumers' perceptions of green product price and quality in shaping their purchase intentions
- (v) to establish if Pakistani consumers' purchase intentions towards green products differ based on their socio-demographic characteristics, such as age, gender and education.

1.5. Research Significance

To address the identified research gaps and research questions, this study develops a theoretical framework underpinned by the literature on green marketing, with a specific focus on the identification of factors influencing Pakistani consumers' GPIs. This research relies on the TPB, which is a generic model used to predict intentions, and extends the TPB to the context

of GPIs among Pakistani consumers. The current research modifies the TPB through the addition of perceived value, religiosity and PCE to develop a context-specific version of the TPB that can better predict Pakistani consumers' GPIs. Finally, the current research measures AGPs based on the Environmentally Conscious Consumer Behaviour typology (Roberts 1996) to establish if Pakistani consumers' GPIs lead to AGPs.

This proposed theoretical model will inform existing theory regarding the role of consumers' perceptions of green value and explain the gap between intentions and AGPs. Similarly, this research will provide theoretical insights into how religiosity, through its influence on attitudes, shapes GPIs in a deeply religious country. Further, it will also study the role of consumers' beliefs regarding the effectiveness of their pro-environmental actions in shaping their attitudes towards green products. Finally, this research will also compare Pakistani consumers' GPIs based on certain socio-demographic characteristics, such as age, gender, and education, to identify differences along those lines.

The findings of this study will also provide insights for public policymakers and businesses dealing in green consumer products. This research will help business managers by identifying multiple demographic and psychographic factors influencing Pakistani consumers' purchase behaviour of green products. Similarly, this research will have implications for public policymakers regarding the role of factors such as religiosity in shaping GPIs. This information will help governments and not-for-profit organisations in developing and launching targeted marketing campaigns based on their unique demographic and psychographic characteristics.

1.6. Methodology

The current research follows a positivist epistemological position, which advocates for the application of the methods of the natural sciences to the study of social reality (Bryman & Bell 2015; McGregor & Murnane 2010; Sekaran & Bougie 2016). To address the research questions identified in Section 1.4, this research employs a deductive approach by building on

existing theory and uses a quantitative data collection method (i.e., mall intercept survey) to identify the factors affecting Pakistani consumers' GPIs and actual purchase behaviour. The current research modifies and extends an existing theory, that is, the TPB, to predict Pakistani consumers' GPIs. This study uses established typologies and validated scales to collect the data to examine the direct and mediating effects of various factors on the purchase intentions and actual purchase behaviour of Pakistani consumers.

1.7. Definition of Key Terms

In the context of green consumer research, several definitions of 'green products', 'green consumer' and 'green purchase behaviour' are commonly used. This section explains the main definitions that will be adopted throughout this research.

Building on the definition of a socially conscious consumer (Webster Jr 1975), this research defines the green consumer as one who considers his or her impact on the physical environment when making product purchases (Johnson & Chattaraman 2019; Lee & Cho 2019; Marde & Verite-Masserot 2018; Prendergast & Tsang 2019). Further, based on the definition of Sdrolia and Zarotiadis (2019), this research defines green products as those designed to lessen the consumption of required natural resources and minimize the adverse environmental impacts during the whole life cycles of these products. Building on the definition of for purchase intentions, the GPIs are defined as consumers' willingness to purchase a green product (Lu, Chang & Chang 2014). Finally, building on the definition of Lee (2009) for green purchase behaviour, the AGPs are defined as the consumers' frequent purchases of green products in the recent past.

1.8. Delimitations of Scope

This section discusses some of the delimitations of the current research. The population (i.e., Pakistani consumers) is restricted to visitors to various shopping malls in four metropolitan cities of Pakistan (i.e., Lahore, Islamabad, Rawalpindi and Sargodha). Pakistan is a developing economy (GEP World

Bank 2020) and is the world's sixth-most populous country, with a population of 192 million people (World Population Prospects 2017). The country covers an area of 88,000 km². Considering financial, time and logistic constraints, approaching and investigating every single citizen of Pakistan is not possible, nor is it required. Thus, the current research uses the convenience sampling technique to select the participants and derive the sample (see Section 4.6.1).

A further delimitation is the restriction of the sample to individuals who can read English. Although Urdu and English are the two official languages in the country (Shamim 2011), all regions in Pakistan have their own unique regional languages (Mansoor 2004), and there is no single language spoken by most Pakistanis. Although English and Urdu are compulsory languages taught in schools (Rasool & Winke 2019), English is the only language used to run the business of the state. Surprisingly, Urdu is not a regional language in any of the regions or territories of Pakistan and is the first language of only 8% of the Pakistanis (Lewis et al. 2013). Therefore, whatever the language used in the questionnaire; certain individuals may automatically be excluded because of their inability to read the questionnaire in that language. Nonetheless, English-based surveys have been successfully used in the past to study green consumption in Pakistan (Al-Swidi et al. 2014; Khan & Mohsin 2017; Konuk, Rahman & Salo 2015). As the current research uses adapted survey instruments, which were originally developed in English, the surveys of this study were also developed in English.

1.9. Thesis Structure

This section will provide a description of the thesis structure. This thesis comprises six chapters. This chapter presented an introduction to the research by providing a background of green consumerism, identifying gaps in the literature on green consumer purchase behaviour and describing how this research will attempt to address those gaps. This chapter then described the research gaps in detail and presented the research objectives, research questions, research significance, a summary of the methodology used in the study, the definition of key terms, the delimitations of scope and the thesis structure.

Chapter 2 and Chapter 3 provide a detailed review of the literature to propose a framework to identify the factors affecting Pakistani consumers' green purchase behaviour. Chapter 2 discusses the evolution of the TPB from the TRA and the suitability and application of the two theories to predict consumers' GPIs. Chapter 3 continues the review of the literature and explains how the TPB is modified to suit the context of Pakistani consumers. Based on the review of the literature, hypotheses will be proposed and presented at the end of each section. Finally, the chapter concludes with a proposed conceptual model based on the proposed hypotheses.

Chapter 4 presents the methodology adopted in this study, which starts with a discussion of the research paradigm used, followed by the research approach. The chapter discusses the issues regarding research design, which include the level of researcher interference, study setting, unit of analysis and time horizon. Chapter 4 also discusses the methods used for data collection, survey instrument design and scaling. This is followed by a description of the population, sampling technique and sample size. Finally, ethical considerations for the study are discussed.

Chapter 5 presents the results of the data analysis based on structural equation modelling (SEM). This chapter starts with a description of the data preparation steps and the results of the preliminary analysis performed to test for the reliability and validity of the data. Then, a justification of the statistical techniques used to test the hypotheses is provided. Finally, Chapter 5 concludes with a presentation of the results of the statistical analysis followed by the outcomes of hypothesis testing.

Chapter 6, based on the results of the data analysis, presents a detailed discussion of the research findings vis-a-vis the study objectives and the research questions. This is followed by a presentation of the revised conceptual model. Chapter 6 also discusses the theoretical contributions of the research, as well as implications for green businesses and public policymakers. Finally, the chapter concludes with a discussion of the limitations of the current research, followed by directions for future research.

Chapter 2. Predicting Green Purchase Intentions

2.1. Introduction

There are diverse existing theoretical models and frameworks that explain the purchase process of green products. Well-established theories such as the TPB and the TRA have been used by researchers to predict and examine consumers' purchases of green products (Armitage & Conner 2001; Hagger, Chatzisarantis & Biddle 2002a; Li, Figg & Schütz 2019; Sheppard, Hartwick & Warshaw 1988). This chapter will start with a discussion of the TRA and its applicability in predicting human intentions. Subsequently, this chapter will evaluate the TRA and the TPB to establish their suitability in predicting human behaviour. Finally, in light of this discussion, this chapter will argue for the need for theory extension and modification to suit the demands of the current research.

2.2. Theory of Reasoned Action

Although the TRA (Ajzen & Fishbein 1969) was a precursor to the TPB (Ajzen 1985), researchers continue to use the TRA to this day (Jones 2020; Yan et al. 2019). Therefore, this chapter will discuss the mechanisms of the TRA first and evaluate its employability as a tool to predict human intentions in the context of green consumption.

The TRA model, which was originally developed by Ajzen and Fishbein (1969), focuses on predicting intentions to take reasoned action in ordinary life experiences. It is an expectancy-value model, which posits that behavioural intentions follow reasonably from an individual's attitudes and SNs (Fishbein & Ajzen 1975). The TRA assumes that intentions are the single most important predictor of human behaviour. In this context, 'intention' refers to a willingness or readiness to engage in the behaviour under consideration, not actual behaviours (Fishbein & Ajzen 1975; Han, Hsu & Sheu 2010). The TRA serves to predict non-routine thinking decisions, which require critical deliberation (Glanz et al. 2008). Examples of some non-routine behaviours are quitting smoking, speeding, piracy, weight loss and buying a green product. Therefore,

when applied in the context of green products, the TRA helps to predict consumers' intentions to buy green products. The TRA achieves this by studying consumers' attitudes and norms. In this context, attitude refers to an individual's attitude towards performing a particular act in a given situation with respect to a given subject (Ajzen & Fishbein 1969), while SNs refer to an individual's personal beliefs as well as his perceptions of others' beliefs with regard to that particular act (Ajzen & Fishbein 1969). Figure 1 shows a diagrammatic representation of the TRA.

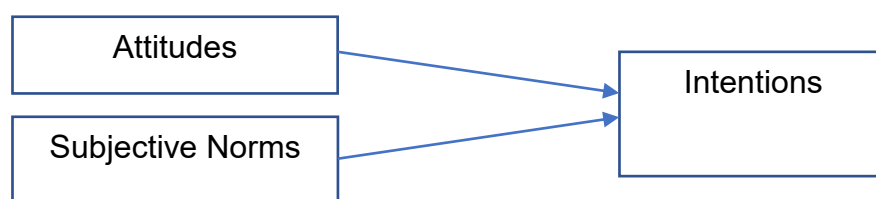


Figure 1: Theory of Reasoned Action (Ajzen & Fishbein 1969)

2.2.1. Application of the Theory of Reasoned Action to predict intentions

The TRA has been widely used to study a diverse range of human behaviours. For example, Alryalat, Rana and Dwivedi (2020) used the TRA to predict the citizens' intention to adopt the e-government system in India. Similarly, Alzahrani, Hall-Phillips and Zeng (2019) found that the TRA is an appropriate framework to describe Saudi citizens' intention to adopt hybrid electric vehicles and that both SNs and attitudes significantly explained Saudi consumers' intentions. Brodowsky, Stewart and Anderson (2018) also found that consumers' intentions to buy electrical appliances are directly affected by attitudes and SNs.

The TRA has also been employed by researchers to study environmentally conscious behaviours among consumers. For example, Sun, Teh and Linton (2018) used the TRA to study people's purchase intentions and purchase behaviour towards recycled products. The results established that a positive and significant relationship exists between the intention to purchase and the

actual purchase of recycled products. In another study, Prakash and Pathak (2017) used the TRA to propose a framework to identify major antecedents of eco-designed packaging behaviour among consumers. The findings of the study confirmed that, among other variables, attitudes and norms significantly influence consumers' willingness to pay for eco-friendly packaging. Further, the TRA has also been used to predict consumers' intention of staying in green hotels (Sukhu & Scharff 2018).

Thus, the TRA has been quite useful in predicting behavioural intentions in the context of human consumption (Brodowsky, Stewart & Anderson 2018; Minton et al. 2018; Mishra, Akman & Mishra 2014). However, the TRA is a generic theory and has, at times, failed to significantly predict intentions (Ajzen 2012). Therefore, before attempting to predict a behaviour based on the TRA, it is important to identify and understand some of its limitations.

2.2.2. Limitations of the Theory of Reasoned Action

The TRA is a popular theoretical framework to predict intentions in a wide variety of human behaviours, including those related to health issues, online behaviour, environmentally friendly products and even violent human behaviours. However, there are situations where the TRA has failed to accurately predict human intentions, especially in situations where the intended behaviour is beyond volitional control. Therefore, this section will discuss some of the established limitations of the TRA.

Comparing the TRA and the TPB, Chang (1998) found that the absence of a variable to study the role of volitional control made the TRA a weaker predictor of moral intentions (e.g., illegal copying of software) compared to the TPB. A similar comparison conducted in the United States (US) involving the TRA and an extended version of the TPB by Kurland (1995) found that the modified version of the TPB explained insurance agents' ethical intentions better. Similarly, Özer and Yilmaz (2011) carried out a stepwise regression analysis to predict accountants' intention to use information technology and found that the TPB has greater predictive power than the TRA. Similar results have also been reported in the domain of consumer purchase intentions by Hansen,

Jensen and Solgaard (2004), who compared the TRA and the TPB's ability to predict consumers' online grocery buying intention. The results suggest that the TPB provided the best fit to the data and explained the highest percentage of variation in online grocery purchase intentions. These results are supported by the findings of Yousafzai, Foxall and Pallister (2010), who also found the TRA to be lacking in terms of predicting consumers' behaviour in the context of internet banking.

Meta-analytic reviews of the TRA, such as those by Sheppard, Hartwick and Warshaw (1988), affirm the TRA's ability to predict behavioural intentions through attitudes and SNs. However, this particular meta-analysis also points out that individuals are likely to take into account many other factors when actually performing a behaviour. Kim and Damhorst (2016) have also voiced similar concerns, saying that the TRA does not support the link between behavioural attitude and actual behaviour. They attribute this to the limited availability of green alternatives and low accessibility in the US apparel marketplace. Therefore, highlighting the role of factors such as availability and accessibility that are beyond the consumers' volitional control but are not addressed by the TRA.

Further, while discussing the applicability of the TRA, the original proposers of the TRA (Fishbein & Ajzen 1975) concede that intentions are likely to result in actions only when the behaviour is under volitional control. The TRA's design only allows it to address issues purely under volitional control, and it fails to account for the need to have the required resources and opportunities to perform the behaviour (Ackermann & Palmer 2014). The omission of certain non-volitional factors for determining human behaviours (e.g., resources, availability and time) restricts the applicability of the TRA (Han, Hsu & Sheu 2010; Paul, Modi & Patel 2016). For example, certain consumers may view sustainable products favourably but may not be able to purchase them due to financial constraints or a lack of product availability (Paul, Modi & Patel 2016; Ramayah, Lee & Mohamad 2010).

Thus, in the context of green consumer behaviour, consumers' actual purchase behaviour cannot be accurately predicted by the mere formation of

intention. The inability of the TRA to account for issues beyond volitional control makes it ineffective in such a context. Hence, an additional variable in the form of behavioural control provides information about constraints perceived by consumers and improves the theory's predictive power (Ajzen 1985; Ajzen 2014). The resulting framework was labelled as the TPB. The next section will discuss how the addition of the PBC variable improves the predictive power of the model and how it is a sound theoretical framework to study consumers' purchase intentions of green products.

2.3. Theory of Planned Behaviour

Icek Ajzen, one of the original authors of the TRA, extended the TRA and proposed the TPB as a model that can more accurately predict and explain human behaviour, including in situations where it is beyond our volitional control. Many human behaviours in everyday life may be considered under volitional control because people can easily perform these behaviours if they are inclined to do so. For example, under normal circumstances, most people can, if they so desire, go to the cinema to watch a movie in the evening, fly on an aeroplane or go shopping with friends when a sales promotion is on. However, closer scrutiny reveals that even routine activities that can usually be performed (or not performed) at will are at times subject to the influence of forces beyond one's control. For example, a person who intends to spend the evening watching a game in a stadium may be disappointed to find that all tickets have been sold out when he arrives at the stadium. Similarly, a person who intends to fly might not be able to do so if the flight gets cancelled due to bad weather, or the person who has a favourable attitude towards sales promotions and enjoys shopping with friends might not be able to go shopping if they are not aware that a sales promotion is on. Thus, every planned act is a goal whose accomplishment is subject to some degree of uncertainty. Therefore, we might be able to rely on attitudes towards behaviour and subjective norms to predict human intentions only and not the performance of the actual behaviour. As discussed in Chapter 1, past studies have found that intentions do not always result in actual purchases (Moon & Bardi 2019; Witek 2019). This phenomenon is more pronounced in the case of green products

and is often referred to as the intention–behaviour gap (Doksaeter & Nordman 2019; Yamoah & Acquaye 2019). Therefore, the inability of the TRA to account for the influence of volitional control in shaping intentions makes it a weak theoretical framework for this study. Hence, this research uses the TPB, which is a validated social-cognitive model of human behaviour that is well suited to determine significant beliefs that affect intention and behaviour (de Leeuw et al. 2015; Han & Stoel 2017; Moghimehfar, Halpenny & Walker 2017).

The TPB addresses the shortcomings of the TRA through the addition of another variable, namely, PBC (Ajzen 1985; Ajzen 2014). PBC measures the non-volitional control factors to predict intentions (Ajzen 1985). PBC accounts for the ease or difficulty of performing the target behaviour based on an individual's perceptions of resources in terms of the availability of finances and time (Ajzen 1985). Therefore, after the addition of PBC to measure the influence of non-volitional factors, the performance of a behaviour as per the TPB is predicted by the following three variables:

- (i) attitudes towards the behaviour (i.e., the global positive or negative evaluations about performing the target behaviour, such as purchasing a product)
- (ii) SNs about a given behaviour (i.e., an individual's perception of the social pressures put on them to perform or not perform the behaviour in question)
- (iii) PBC, which is often labelled 'self-efficacy' (i.e., the perceptions regarding the ease or difficulty of performing the target behaviour).

Figure 2 shows a diagrammatic representation of the TPB.

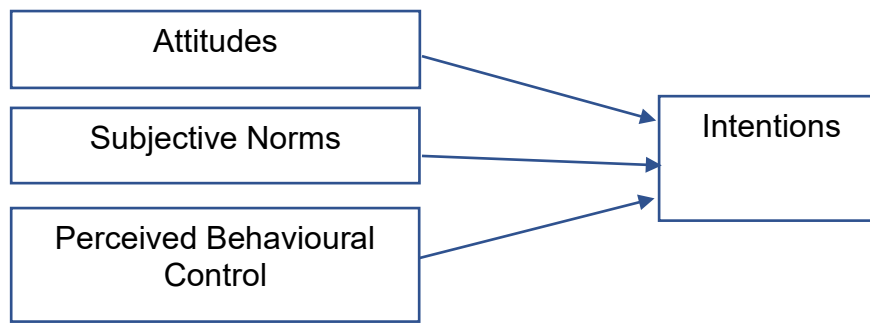


Figure 2: Theory of Planned Behaviour (Ajzen (1985))

Collectively, all three variables lead to the formation of the intention towards a behaviour, which finally affects the behaviour (Ajzen 1985; Ajzen 2014). This means that the behavioural performance will be affected by the behavioural intention, and the individual's behavioural intention will be stronger if they have a more positive attitude, feel greater pressure from SNs or feel that they have more control over their ability to buy something (Ajzen 1985; Ajzen 2014). These concepts are discussed in more detail later in this chapter. Nevertheless, the core argument of the TPB is that human behaviour is an outcome of rational choices rather than wilful action and that it is influenced by SNs (i.e., judgment about other people's potential attitude towards the target behaviour), attitudes towards the act (i.e., evaluation of the target behaviour) and PBC (i.e., the perceived ability to perform the target behaviour), which all affect their behavioural intentions (Ajzen 1985; Ajzen 2014).

Thus, the TPB allows us to examine the influence of personal determinants and social surroundings as well as non-volitional determinants on intention (Han & Stoel 2017). This ability makes the TPB quite feasible for studying green consumer behaviour (Armitage & Conner 2001).

2.3.1. Applications of the Theory of Planned Behaviour to predict human intentions

This section will demonstrate the suitability of TPB to predict human intentions with a focus on predicting GPIs.

The TPB has been widely and effectively used by researchers to study consumer purchases. The TPB has been applied both to a specific group of products and behaviours or to a more general environmental orientation. For

example, the TPB has been used to study the general attitudes towards green products (Cerri, Testa & Rizzi 2018; Jaiswal & Kant 2018; Yadav & Pathak 2017), and the intentions towards creative tourism (Huang, Chang & Backman 2018), organic restaurants (Shin et al. 2018), green hotels (Verma & Chandra 2017), green skin care products (Hsu, Chang & Yansritakul 2017), energy-efficient household electrical appliances (Tan, Ooi & Goh 2017), and green buildings (Wu, Fan & Chen 2016).

Apart from consumer behaviour, the TPB has also been used extensively to study a diverse range of human behaviours. For example, Hall, Turner and Kilpatrick (2019) employed the TPB to identify and study factors affecting farmers' decisions to engage in extension activities. The researchers found a lack of PBC to be a factor responsible for farmers perceiving extension activities as confronting. Similarly, Norman, Webb and Millings (2019) conducted a study to test the effectiveness of using an intervention strategy based on the TPB to target new university students' binge drinking intentions. The researchers found that participants who were targeted with the intervention were found to have weaker intentions to engage in binge drinking behaviour and weaker attitudes towards this behaviour, descriptive norms and self-efficacy in relation to binge drinking, than those who did not receive the intervention.

Another area where the TPB has been effectively used to predict human intentions is the health sector. For example, in a systematic meta-analysis, Joyal-Desmarais et al. (2019) examined whether four individual-level measures of socio-economic status (occupation, income, education and ethnicity) moderate the relationships between the TPB variables and different health-promoting dietary behaviours in adults. The study reported that all TPB variables were significantly and positively associated with both health-promoting dietary behaviours, with intention having the strongest correlation with behaviour. Similarly, a study based on the TPB that aimed to assess the determinants of oral hygiene behaviour (OHB) among patients with moderate and severe periodontitis concluded that the TPB model facilitates the evaluation of psychosocial determinants of OHB among patients with periodontitis (Patel et al. 2019). Likewise, De Vivo and Mills (2019) found that

the TPB has a high predictive utility in explaining pregnant women's physical activity intentions and behaviour. The study also found that parents and adolescents may bidirectionally influence each other's health intentions or behaviours, which is in sync with similar findings reported by Joyal-Desmarais et al. (2019), based on the TPB. Further, Feakes et al. (2019) used the TPB to identify if contextually relevant attitudes and self-ratings influence student intentions for career paths in veterinary sectors. The study found that attitude and self-efficacy (i.e., PBC) contribute greatly to career sector intentions for veterinary students. Similarly, Alzahrani, Hall-Phillips and Zeng (2019) found that using the TPB was an effective approach to identifying attitudes, and social and control factors influencing Tasmanian dairy farmers' adoption of pasture measuring and management practices.

Another area of research where the TPB has been widely used is in the prediction of human intentions to perform environmentally sustainable behaviours. For example, Judge, Warren-Myers and Paladino (2019) applied the TPB to investigate the factors predicting homebuyers' intentions to purchase a dwelling with a sustainability certification. Attitudes, SNs, PBC and green consumer identity each independently predicted consumers' intentions to purchase sustainability-certified accommodation. Similarly, Olya, Bagheri and Tümer (2019) applied the TPB in the context of the green lodging industry and found that the three dimensions of the TPB (i.e., attitudes, SNs and PBC) formulated hotel visitors' behavioural responses.

Further, the TPB has been found to demonstrate a reasonable level of generalisability, as researchers have also successfully used the TPB to identify critical and context-specific influencers of intentions among consumers of different geographic regions. For example, a study aimed at evaluating the determinants of green purchase behaviour in the European Union (EU) by applying the TPB revealed that in all the EU countries, SNs had the biggest influence on green purchase behaviour (Liobikienė, Mandravickaitė & Bernatoniene 2016). Similarly, Bong Ko and Jin (2017) found that the TPB was able to significantly predict consumers' purchase intentions towards sustainable cloth products in China and the US. Interestingly, the SNs were

found to have the greatest direct influence on purchase intentions in both countries.

Researchers have also used an extended version of the TPB to predict intentions. For example, Passafaro, Livi and Kotic (2019) extended the TPB model to understand the effects of spatial proximity on recycling intentions. The researchers found that local norms are adjunctive predictors of behavioural intentions and that their effects on intentions can vary as a function of the spatial proximity to a person's place of residence. Similarly, Mufidah et al. (2018) found that the extended TPB can significantly explain the behavioural intentions of using sustainable products among citizens of developing (e.g., Indonesia) and developed countries (e.g., Taiwan). Similar findings were also reported by Maichum, Parichatnon and Peng (2016), who used an extended framework of the TPB to investigate Thai consumers' purchase intentions of green products. The findings of the study indicate that consumer attitudes, SNs and PBC have a significant and positive influence on consumers' purchase intentions towards sustainable products. Likewise, Tan, Ooi and Goh (2017) applied an extended TPB framework to investigate the green gap between consumers' intentions and the actual purchase of energy-efficient household appliances. The study found that consumers' favourable attitudes towards energy-efficient household appliances and PBC significantly influence consumers' purchase intentions for such products.

In addition to the above, during the past two decades, the TPB has also been the subject of meta-analytic reviews conducted by different researchers. These meta-analytic reviews involving diverse applications of the TPB, such as on sustainable foods, alcohol consumption and socially responsible consumer behaviour, have also found the TPB to be a sound theoretical framework for predicting human intentions. For example, Nuttavuthisit and Thøgersen (2017) conducted a meta-analytic review to examine the studies that applied the TPB as a theoretical framework to predict consumers' intentions to buy organic food within a sustainable consumption context. This meta-analysis involving 23 different studies and a total sample of 11,349 participants assessed the strength of the relationships between attitudes, SNs, PBC and intentions, as well as between intentions and behaviour. The results

confirmed the significant influence of attitudes in shaping buying intention, followed by SNs and PBC. Similarly, the findings of a systematic review and meta-analysis involving 40 studies conducted by Cooke et al. (2016) also support the utility of the TPB when applied to study alcohol consumption and intentions. In addition to the above, the results of meta-analytic reviews of the TPB conducted by Han and Stoel (2017) and Armitage and Conner (2001) also found medium to strong sample-weighted mean correlations between purchase intentions and predictor variables.

The above discussion has clearly established the superiority of the TPB when compared to the TRA while also highlighting its suitability to study consumers' GPIs. Therefore, the foundations of the theoretical framework of this current study will be based on the TPB. The next sections will discuss the individual variables that form part of the TPB and how they are well suited to predict GPIs.

2.3.2. Attitudes and green purchase intentions

According to Jung (1971), attitude is a psychological construct 'shaped by cognition (thought), values (beliefs) and affection (emotions) towards a particular object'. For example, a person may believe that buying green products (behaviour) reduces environmental pollution (outcome). The attitude towards a behaviour (e.g., buying green products) is shaped by beliefs about the outcomes of performing that behaviour (e.g., a decrease in environmental pollution) weighted by the favourable or unfavourable evaluation of each of those outcomes. Hence, beliefs about the consequences of an action shape consumers' attitudes towards performing that action, which, in this study, is the intention to purchase green products.

A review of the literature involving consumers' GPIs clearly shows that consumer attitudes have consistently been found to be a strong indicator of GPIs. For example, in their attempt to operationalise the relationship of cognitive factors influencing GPIs, Jaiswal and Kant (2018) found that GPIs were significantly and directly driven by a person's attitudes towards green products. Similarly, the results of a study to explore the antecedents of

sustainable consumption among young urban consumers found that attitudes and PCE have a significant and direct influence on consumer behaviour (Taufique & Vaithianathan 2018). Similar findings have been reported in Nepal (Ghimire), Pakistan (Salam, Smith & Mehboob 2021), and India (Kumar, Prakash & Kumar 2021).

Further, the SEM-based results of a study by Verma and Chandra (2017) found that attitudes, SNs and PBC were positively and significantly related to young consumers' green hotel visit intentions. Similarly, Sreen, Purbey and Sadarangani (2018) also found that attitudes towards green products, SNs and PBC significantly explain the variation in GPIs. In their study on respondents' intentions to pay an additional tax to the regional government to help develop local noise abatement, Sánchez et al. (2018) found that green attitudes and perceived control were the main determinants of a willingness to pay.

Thus, a positive attitude towards green products is essential to ensure the consumption of such products. Hence, attitude is an integral part of the TRA and the TPB theories. Further, prior research has also consistently identified attitude as one of the most significant influencers on intentions across a diverse range of human behaviours and geographical locations. This provides strong evidence in support of the relevance and fit of attitudes in a green consumer behaviour theoretical model. Figure 3 presents a diagrammatic representation of the relationship between attitudes and intentions.

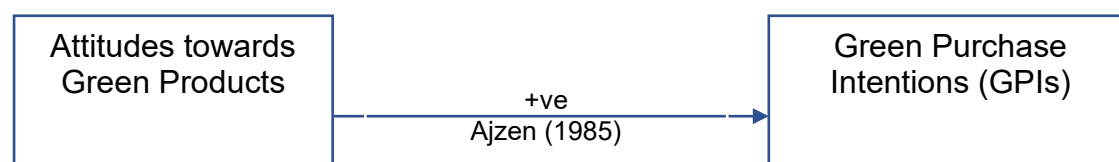


Figure 3: Relationship between attitudes and intentions.

Therefore, the current study will endeavour to identify if a positive and significant relationship exists between attitudes towards green products and GPIs in Pakistan and hence, the following hypothesis is proposed:

Hypothesis 1 (H1): Attitudes towards green products have a positive and significant influence on GPIs.

2.3.3. Subjective norms and green purchase intentions

SNs refer to the perceived social pressure to perform or not perform a behaviour (Ajzen 1985). They represent the beliefs of individuals about how they would be viewed by their reference groups if they perform a certain behaviour. Therefore, if an individual's spouse, kids, colleagues, or best friends despise an environmentally polluting product, then they will, at best, avoid or, at least, minimise its use, no matter what the incentives or motivations to use that product may be. Thus, if consumers believe that 'important others' view green products favourably, then those consumers will have a greater intention to buy the products. This has been found to be true by Judge et al. (2019), who found SNs to be the strongest predictor of purchase intentions for green housing, as buying a house often involves taking other people's views into consideration, and houses come with a high degree of identity symbolism.

SNs have a significant effect on behavioural intention, and a strong relationship between SNs and intentions has been shown in consumer behaviour literature (Brodowsky, Stewart & Anderson 2018; Shin et al. 2018). SNs have also been found to be an important predictor of consumer intentions across a range of green consumer products. For example, a study conducted by Alzahrani, Hall-Phillips and Zeng (2019) to identify the factors that drive Saudi citizens' intention to adopt hybrid electric technology found both SNs and attitudes to be significant factors in explaining Saudi consumers' intentions. Similarly, using the TPB to study consumers' adoption of hybrid electric vehicles in China, Wang et al. (2014) found that SNs have the greatest impact on the adoption of hybrid electric vehicles. Similar findings were also reported by Maichum, Parichatnon and Peng (2016), who investigated Thai consumers' intention to purchase green products and found that SNs significantly influence their purchase intention. Further, Sreen, Purbey and Sadarangani (2018) found that there is a positive and significant relationship between SNs and GPIs. Likewise, Carfora et al. (2019) also found that SNs

are a significant predictor of Italian consumers' intention to purchase organic milk.

The TPB is a fairly generalisable framework. Therefore, its variables, such as SNs, have also been reported as significant predictors of consumer intentions across different geographic regions. For example, a study that applied the TPB to evaluate the determinants of green purchase behaviour in the EU revealed that in all the EU countries, SNs have the greatest influence on green purchase behaviour (Liobikienė, Mandravickaitė & Bernatoniene 2016). Similarly, Bong Ko and Jin (2017) found that SNs have the greatest direct influence on purchase intentions towards green clothing products in China and the US.

Apart from green consumption, SNs have also been found to positively influence other prosocial behaviours. For example, Moghimehfar, Halpenny and Walker (2017) found that to promote an environmentally friendly campground culture, educational and interpretive programs that target family and group values (i.e., SNs) are quite helpful. Similarly, Olya, Bagheri and Tümer (2019) applied the TPB in the context of the green lodging industry and found SNs to be an important influencer in formulating hotel visitors' behavioural responses.

The above discussion clearly establishes that SNs have a significant influence on intentions across a diverse range of human behaviours and geographical locations. This provides strong evidence in support of the relevance and fit of SNs in a green consumer behaviour theoretical model. Therefore, the current study proposes the following hypothesis:

Hypothesis 2 (H2): SNs have a positive and significant influence on GPIs.

Figure 4 shows a diagrammatic representation of the relationship between SNs and GPIs.

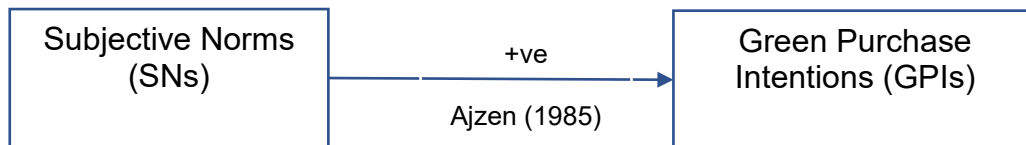


Figure 4: Relationship between subjective norms and intentions (Ajzen 1985)

2.3.4. Perceived behavioural control and purchase intentions

PBC refers to the degree of control that an individual perceives over performing a behaviour (Ajzen 1991). Thus, individuals who perceive a higher degree of personal control tend to have a stronger behavioural intention to engage in a certain behaviour (Ajzen 1991). For example, although an individual has favourable attitudes towards green products, and the important people around them (i.e., SNs) also view green products favourably, they might still not end up buying green products due to reasons such as availability, time and purchasing power. This has been found to be true by Judge, Warren-Myers and Paladino (2019), who found PBC to be the reason for low levels of green housing purchasing intentions. The study found green housing to be increasingly out of reach for many people in Australia, and sustainability certifications are not necessarily included in the marketing communications for dwellings. This indicates that the lack of information and buying power, which are non-volitional elements, prevent the formation of purchase intentions. Interestingly, the research also identified high prices as another non-volitional barrier towards purchase, even when some consumers have favourable intentions.

Another element that can, at times, be beyond an individual's volitional control is time. When consumers believe they have more resources, such as money, time and skills, their perception of control is high, and hence, their behavioural intentions increase (Yeon Kim & Chung 2011). Conversely, an individual may have a favourable attitude towards a certain behaviour, but they might not have the intention of accomplishing the behaviour due to perceived difficulties (Chen 2007). Therefore, Ajzen (1985) added PBC to the TRA model to improve its predictability, and the resulting model was labelled the TPB.

Research has established a positive relationship between PBC and consumer intentions (Lim & An 2021; Moon 2021; Tsai & Tiwasing 2021). In their research involving Australian consumers' GPIs, Grimmer and Miles (2017) found that behavioural control and environmental involvement moderate the relationship between implementation intentions and behaviour. Further, Tan, Ooi and Goh (2017) found that consumers' more-favourable attitudes towards energy-efficient household appliances and PBC significantly influence consumers' intention to purchase such products.

In the case of green housing, an individual might have favourable intentions towards a behaviour but may not actually execute those intentions if the behaviour is not under the individual's volitional control (Judge, Warren-Myers & Paladino 2019). Similar findings were reported by Litvine and Wüstenhagen (2011), who reported that, for Swiss consumers, price is not the only barrier to purchasing green electricity and that the lack of reliable information also acts as a barrier towards the purchase of green electricity. Therefore, it can be concluded that the intention to buy green consumer products is greater when consumers perceive more control in terms of their own ability to buy these products.

Thus, it has been established that PBC plays an important role in predicting GPIs across a diverse range of human behaviours, including pro-environmental consumption. This provides strong evidence in support of the relevance and fit of PBC in a green consumer behaviour theoretical model. Therefore, the current study proposes the following hypothesis:

Hypothesis 3 (H3): PBC has a positive and significant influence on GPIs.

2.5. Chapter Summary

This chapter has discussed and clearly demonstrated the diverse and successful application of the TPB to meaningfully explain various environmental behaviours, and this supports the view that the TPB provides a sound framework for researching consumers' GPIs. Further, the role of

individual TPB components (i.e., attitudes, SNs and PBC) in shaping intentions was also discussed. However, as mentioned in Chapter 1, the TPB is a generic framework, which needs to be adapted by adding context-relevant variables to better predict intentions.

Therefore, the TPB, courtesy of its ability to incorporate the influence of non-volitional factors, such as buying power, availability, and information, appears to be the most suitable theoretical framework to study green consumption. Hence, it is the most relevant theoretical framework that meets the requirements of the current research. Therefore, the theoretical foundations of this research will be based on the TPB.

Chapter 3. Modification of the Theory of Planned Behaviour

3.1. Introduction

Past researchers have successfully extended the TPB framework by introducing additional variables to it, and this has resulted in models with better predictive power that are able to explain higher levels of variance (Nigbur, Lyons & Uzzell 2010; Pakpour et al. 2014; Yazdanpanah & Forouzani 2015). This result is also supported by Icek Ajzen, the original author of the TPB (Ajzen 1991; de Leeuw et al. 2015). Therefore, based on a review of the literature, this chapter will explore the usefulness of the TPB extension to study green consumption. This chapter will also identify and propose suitable variables to extend the TPB in the context of green consumption in Pakistan.

3.2. Extension of the Theory of Planned Behaviour

This section will justify the need for theory modification and discuss how the addition of context-relevant variables improves the TPB's predictive power. Although the TPB is a generic framework for predicting human intentions, it has been found to predict intentions better with the addition of context-relevant variables. For example, in their attempt to predict blood donation intentions and behaviour among Australian blood donors, Masser et al. (2009) found that the extended TPB provided a better fit to the data than the basic TPB. Similarly, a study on Pakistani citizens' money donation intentions found that the extended TPB was able to significantly predict intentions (Kashif & De Run 2015).

Green consumer research has also benefited from this research practice, which has resulted in the development of models with better predictive power. For example, in their research involving consumer intentions to participate in a kerbside recycling program, Nigbur, Lyons and Uzzell (2010) found that the addition of variables to the original TPB model resulted in a strengthening of the predictive power of the subsequent model. Similarly, Han, Hsu and Sheu

(2010) found that the inclusion of additional variables significantly increased the predictive power of the model when examining customers' intentions to revisit a green hotel. Further, Yadav and Pathak (2017) reported that the inclusion of additional constructs (i.e., perceived value and the willingness to pay a premium) in the TPB model resulted in the improved predictive power of the theoretical framework that explained consumers' GPIs and behaviour. In addition, a study on Taiwanese consumers' intentions to visit green hotels found that the extended TPB model has significant explanatory power (Chen & Tung 2014). Similarly, when applied to a study on Pakistani consumers' GPIs, the extended TPB was able to explain a greater amount of variance (Muzaffar 2015).

Moreover, the TPB model explains a higher percentage of variance when pro-environmental behaviours are analysed. For example, the extended model explained 69.55% of the variance in the study conducted by Paul, Modi and Patel (2016). Similarly, in their research on consumers' purchase intentions towards organic food, the extended model explained a higher percentage of the variance, which implies the suitability of the extended TPB model to represent this type of phenomenon (Teng & Wang 2015). In addition, a study of German residents' intentions towards environmental conservationism reported that, post-extension, the TPB model's ability to explain variance in intention improved from 70% to 92% (Kaiser 2006).

Table – 1 below summarizes some of the recent research involving successful extension of the TPB to predict green intentions.

Table 1: Highlight of the Green Consumption Research utilizing Extended TPB

Study	Title	Context	Findings
(Wang et al. 2021)	Extending theory of planned behaviour in household waste sorting in China: the moderating effect of knowledge, personal involvement, and moral responsibility	Energy saving behaviours	The additional of variable significantly increases the explanation power of the TPB model.

(Shalender & Sharma 2021)	Using extended theory of planned behaviour (TPB) to predict adoption intention of electric vehicles in India	Household waste sorting	The findings of study suggest that extended TPB model is appropriate in predicting the adoption intention of the customers towards the EVs.
(Moon 2021)	Investigating beliefs, attitudes, and intentions regarding green restaurant patronage: An application of the extended theory of planned behaviour with moderating effects of gender and age	Green restaurant patronage	The findings support the inclusion of past behaviour and confirm the moderating effects of gender and age.
(Du & Pan 2021)	Examining energy saving behaviours in student dormitories using an expanded theory of planned behaviour	Energy saving behaviours in student dormitories	The additional variable "personal moral norm" significantly increases the explanation power of the TPB model.
(Ahmed et al. 2021)	Purchase intention toward organic food among young consumers using theory of planned behaviour: role of environmental concerns and environmental awareness	Purchase intention toward organic food	Addition of the construct environmental concern helped predict young consumers' intentions towards organic food.
(Ru, Qin & Wang 2019)	Young people's behaviour intentions towards reducing PM2. 5 in China: Extending the theory of planned behaviour	Intentions towards reducing emissions	The results validated the appropriateness of the extended theory of planned behaviour for exploring young people's PM2.5 reduction intention
(Moon, Mohel & Farooq 2019)	I green, you green, we all green: Testing the extended environmental theory of planned behaviour among the university students of Pakistan	Green purchase intentions	Extended environmental theory of planned behaviour explained a considerable amount of variance in green purchase intentions.

(Yarimoglu & Gunay 2020)	The extended theory of planned behaviour in Turkish customers' intentions to visit green hotels	Intention towards green hotels	The results of the study supported the usage of the extended theory of planned behaviour in the context of green hotels.
(Sánchez et al. 2018)	An Extended Planned Behaviour Model to Explain the Willingness to Pay to Reduce Noise Pollution in Road Transportation	Willingness to Pay to Reduce Noise Pollution	The study found extended TPB to be useful in predicting willingness to pay while highlighting the importance of psychological aspects, attitudes, and values.
(Yadav & Pathak 2017)	Determinants of Consumers' Green Purchase Behaviour in a Developing Nation: Applying and Extending the Theory of Planned Behaviour	Consumers ' Green Purchase Behaviour	Inclusion of additional constructs was supported in the TPB as it has improved the predicted power of the TPB framework in predicting consumer green purchase intention and behaviour
(Gao et al. 2017)	Application of the extended theory of planned behaviour to understand individual's energy saving behaviour in workplaces	Individual's energy saving behaviour	The results support the usefulness of the extended TPB model, as it has increased the explanatory power of the original TPB model
(Yadav & Pathak 2016)	Young consumers' intention towards buying green products in a developing nation: Extending the theory of planned behaviour	Intention towards buying green products	The result supported the applicability of including additional constructs in TPB, as it has improved the predictive utility of the proposed model
(Wang et al. 2016)	Predicting consumers' intention to adopt hybrid electric vehicles: using an extended version of the theory of planned behaviour model	Intention to adopt hybrid electric vehicles	The results confirm the extended TPB model has good explanatory power in predicting consumers' intention to adopt hybrid electric vehicles.
(Si et al. 2020)	Understanding intention and behaviour toward sustainable usage of bike sharing by	Dock less bike sharing	Moreover, the empirical results ascertained that the extended model has stronger interpretation

	extending the theory of intentions planned behaviour	ability than the original model in predicting dock less bike sharing users' sustainable usage behaviour.
(Savari & Gharechaei 2020)	Application of the extended theory of planned behaviour to predict Iranian farmers' safe use of chemical fertilizers. intention for safe use of fertilizers.	Most importantly, the extended TPB increases the model's ability to explain farmers' safe behavioural intention

Based on the above discussion, and findings of the prior research summarized in Table – 1 it can be safely concluded that modifying the TPB model by including additional context-relevant constructs will most likely contribute to enhancing our understanding of the theoretical mechanism of the model and increasing the model's ability to predict individuals' intentions and behaviour in that specific context. This modification process is known as theory broadening and deepening (Ajzen 1991; Han, Hwang & Kim 2014). The next sections in this chapter will explore and include additional variables to explain consumers' green purchase behaviour.

3.2.1. Perceived consumer effectiveness

Recent studies suggest that consumers' response to environmental appeals is also dependent on the belief that their individual choices can positively influence and contribute to the solution of environmental problems (Ghvanidze et al. 2016; Jaiswal & Kant 2018; Zhao et al. 2018). Therefore, it is reasonable to expect that individuals who have a strong belief that their purchase of environmentally sustainable products will result in positive environmental outcomes are more likely to have favourable purchase intentions towards such products. The particular belief that one can make a positive difference to the environmental problem by purchasing environmentally sustainable products is referred to as PCE (Jaiswal & Kant 2018).

The lack of consumer confidence to make a major environmental contribution through their individual actions has also been identified as a contributing factor to the attitude–behaviour gap. For example, Do Paço and Raposo (2008) found that despite their support for policies focused on environmental conservation, Portuguese consumers do not always translate their concerns into environmentally friendly actions. The results suggest that Portuguese consumers who are concerned about the environment will only display a corresponding behaviour if they feel that their individual action will meaningfully contribute to solving environmental problems. Similarly, Huang, Zhang and Deng (2006) found that it might be difficult to increase PCE among Chinese consumers. This has been explained by Zhao et al. (2014), who found that Chinese consumers believe environmental problems are so complex that the responsibility for their management lies with the government and enterprises. This, again, highlights the importance of the consumers' belief that their individual actions will result in major and favourable environmental outcomes (i.e., PCE).

3.2.1.1. Perceived consumer effectiveness and attitudes

PCE has been found to directly affect not just intentions but also actual sustainable consumption (Vermeir & Verbeke 2008; Webb, Mohr & Harris 2008). Kinnear, Taylor and Ahmed (1974) first studied PCE as an element of personality variables to predict environmental concerns. In a later study, Roberts (1996) employed it as one of the attitudinal variables in predicting ecologically conscious consumer behaviour and reported it to be a better predictor than environmental concern. Subsequent studies have also shown that PCE is a significant predictor for a range of ecologically conscious and pro-environmental goods, such as textile and apparel (Kang, Liu & Kim 2013), food (Nurse Rainbolt, Onozaka & McFadden 2012), milk (Zhao et al. 2018) and electricity (Diaz-Rainey & Ashton 2011). Further, researchers studying green consumption across different markets have found that PCE positively influences consumers' attitudes towards green products. Examples of such studies include the studies by Wesley, Lee and Kim (2012) in South Korea, Tan (2011) in Malaysia and Trivedi, Patel and Acharya (2018) in India.

Thus, PCE is the consumers' beliefs about the effectiveness of their actions in contributing to an environmental cause (Jaiswal & Kant 2018), and since beliefs shape our attitudes (Jung 1971), and this premise is supported by prior research (Tan 2011; Trivedi, Patel & Acharya 2018; Wesley, Lee & Kim 2012), the current study proposes the following hypothesis:

Hypothesis 4a (H4a): PCE has a positive and significant influence on attitudes towards green products.

Figure 5 shows a diagrammatic representation of the relationship between PCE and attitudes.

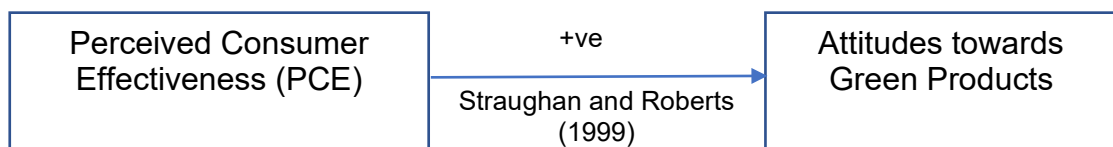


Figure 5: Relationship between perceived consumer effectiveness and attitudes

Further, attitudes positively influence consumers' GPIs (Ajzen 1985). Therefore, in line with the findings of Kang, Liu and Kim (2013), it is also expected that attitudes mediate the effect of PCE on GPIs. Hence, this study proposes the following hypothesis:

Hypothesis 4b (H4b): Attitudes towards green products significantly mediate the relationship between PCE and GPIs.

3.2.1.2. Perceived consumer effectiveness and green purchase intentions

Drawing on the discussion in Section 3.2.1.1, it is also expected that the greater the consumers' perception of the effectiveness of their actions (i.e., buying green) in contributing to the environmental cause, the greater their GPIs will be. For example, an empirical study involving consumers from the US, Spain, Mexico and Brazil found that PCE and motivation are the most

important variables in explaining pro-environmental behaviour (Vicente-Molina, Fernández-Sáinz & Izagirre-Olaizola 2013). Similarly, Jaiswal and Kant (2018) found that Indian consumers' GPIs are significantly and directly driven by PCE. Another study involving a comparative analysis of consumers from Korea, the US and China found that PCE significantly affects intentions to purchase environmentally sustainable textiles and apparel (Kang, Liu & Kim 2013). Similar studies in other countries—such as the studies by Albayrak, Aksoy and Caber (2013) on customers in Turkey; Kautish and Soni (2012) on customers in India; Nurse Rainbolt, Onozaka and McFadden (2012) on customers in the US, the United Kingdom (UK) and Germany; and Cho et al. (2013) on customers in South Korea and the US—found that PCE positively influences GPIs. In addition, research has also reported that PCE alleviates consumers' willingness to pay a higher price for green products (Diaz-Rainey & Ashton 2011).

Thus, a review of the literature clearly establishes that PCE has a significant influence on intentions across a diverse range of product categories and geographical locations. This provides strong evidence in support of the relevance and fit of PCE in a green consumer behaviour theoretical model. However, despite the importance and relevance of PCE in the context of green consumption, barring Saleem, Eagle and Low (2018), there is a lack of significant research attempting to establish the role of PCE in shaping Pakistani consumers' GPIs. Figure 6 shows a diagrammatic representation of the relationship between PCE and GPIs.



Figure 5: Relationship between perceived consumer effectiveness and green purchase intentions

At this juncture, it is pertinent to note that PCE is also dependent on an individual's knowledge and direct or indirect experiences. Therefore, PCE is expected to differ from individual to individual because of the diversity of their life experiences and knowledge. While individuals are expected to believe that their actions have wide-ranging consequences, others may have little trust in their abilities to make any difference (Albayrak et al. 2011). Therefore, it is important that the unique role of PCE in shaping Pakistani consumers' intentions and actual purchases be studied before generalisations can be made. Hence, the current study proposes the following hypothesis:

Hypothesis 4c (H4c): PCE has a positive and significant influence on GPIs.

3.2.2. Religiosity

Durkheim and Swain (2008, p. 70) define religion as:

A unified system of beliefs and practices relative to sacred things, that is to say, things set apart and forbidden beliefs and practices which unite into one single moral community called a Church, all those who adhere to them.

Similarly, Hill et al. (2000) define religion as an adherence to a belief system and practices associated with a tradition and community in which there is agreement about what is believed and practiced. These definitions clearly recognise the fundamental role of beliefs and practices in any religion. Therefore, religiosity can be defined as the degree to which an individual follows or adheres to the beliefs and practices propagated by their religion (Waite 2017).

Acting as a belief system, religion is one of the key determinants of one's core values (Minton, Kahle & Kim 2015). According to Chai and Tan (2009), religion affects individual behaviour in two ways. First, religion creates obligations and rules that directly influence all human behaviour. In a study on religious evolution, Whitehouse (2016) listed moral obligations as part of a cross-culturally recurrent religious repertoire. For example, Islam requires its followers to pay the zakat, which is compulsory, and each resourceful Muslim

must pay it once a year with the objective of reducing income inequity, keeping social justice and alleviating poverty (Senturk 2007, pp. 7-11). Secondly, religion acts as a social institution or phenomenon that strongly influences human behaviour (Fox 2018). Therefore, religion clearly influences society in many ways.

Research has also shown that a belief in gods as moralistic, punitive and knowledgeable beings who are aware of human intentions and behaviours results in reduced rule-breaking behaviours that benefit society (Purzycki et al. 2017). Therefore, the higher the degree of religiosity, the greater the chances of prosocial behaviours, such as purchasing environmentally sustainable products. Because of the importance given to prosocial behaviours in most religions (Norenzayan et al. 2016), it has been found that religious people tend to be prosocial and helpful (Hardy & Carlo 2005; Umair et al. 2021). Hence, it is likely that if a religion promotes prosocial goals, such as the protection of the environment, it will result in the development of positive attitudes towards pro-environmental products among its adherents.

Despite Pakistan having a large and highly religious Muslim population (Zaman 2018), there has only been limited research employing the TPB to understand the role of religiosity in influencing green consumption among Pakistani consumers (Hameed, Waris & ul Haq 2019; Razzaq, Ansari, et al. 2018; Razzaq, Razzaq, et al. 2018). In addition, a critical review of the few studies that have been conducted in this area identified major theoretical and methodological weaknesses along with reporting discrepancies (see Appendix A). Therefore, the next sections of this chapter will explore how religiosity influences green consumption and will propose a hypothesis to study the role of Pakistani consumers' religiosity in shaping their response towards green products.

3.2.2.1. Religiosity and attitudes

Religiosity is an important value that can influence a religious person's behaviour (Sharma, Newaz & Fam 2016). Since values serve as a base for the formation of attitudes (Schuitema & De Groot 2015), and religion is one of the key determinants of a religious person's core values (Minton, Kahle & Kim

2015), religiosity is also likely to influence attitudes towards prosocial behaviours, such as buying green products. Research has found that an individual's religiosity may affect their perceptions regarding different worldly affairs (Leelavanichkul et al. 2018; Lin 2002). Similarly, in a study involving participants from 11 different countries, Wang et al. (2017) found that religion has a significant influence on consumers' perceptions of controversial advertising.

This relationship is also confirmed in the case of green products. For example, Bhuian et al. (2018) found that the influence of environmental attitudes on GPIs can be augmented by the extent of the religiosity possessed by Muslim consumers. Similarly, Graafland (2017) found that religiosity increases positive attitudes towards green products, while Chai and Tan (2009) found that the intrinsic religiosity of Malaysian consumers significantly influences their attitudes towards green products. Further, research has also established that religiosity indirectly influences prosocial intentions through its influence on consumers' attitudes (Davari, Iyer & Strutton 2017; Wang et al. 2019). Figure 7 shows a diagrammatic representation of the relationship between religiosity and attitudes towards green products.

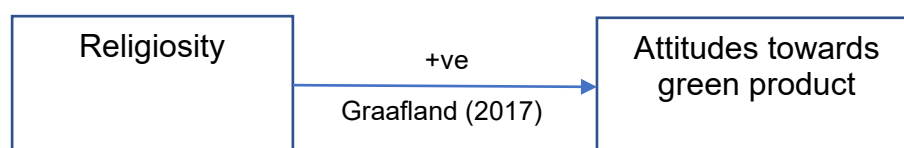


Figure 6: Relationship between religiosity and attitude towards green products.

In a study involving 300 Pakistani consumers, Hameed, Waris and ul Haq (2019) found that religiosity has a positive and significant influence on attitudes towards green products. However, there has only been limited research on the influence of religiosity on consumers' attitudes towards green products. Therefore, further research is required to establish the generalisability of the findings for different markets such as Pakistan, which has a considerably large and highly religious population (Zaman 2018). Thus, this research will attempt to identify if a positive and significant relationship

exists between Pakistani consumers' religiosity and attitudes towards green product purchases. Hence, based on the above discussion, the current study proposes the following hypothesis:

Hypothesis 5a (H5a): Religiosity has a positive and significant influence on attitudes towards green products.

Further, as discussed earlier in Section 2.3.3, attitudes positively influence consumers' GPIs (Ajzen 1985). Therefore, in line with the findings of Graafland (2017), it is also expected that attitudes will mediate the effect of religiosity on GPIs. Hence, this study proposes the following hypothesis:

Hypothesis 5b (H5b): Attitudes towards green products significantly mediate the relationship between religiosity and GPIs.

3.2.2.2. Religiosity and perceived consumer effectiveness

In Section 3.2.2, the positive role of PCE in shaping GPIs was discussed, and PCE was defined as consumers' beliefs that their individual choices can positively influence and contribute to the solution of environmental problems (Ghvanidze et al. 2016). Research has also shown that deeply religious individuals experience higher levels of self-efficacy (Abdel-Khalek & Lester 2017). Theoretically, in a way, self-efficacy is similar to PCE. As defined by Bandura, Freeman and Lightsey (1999), self-efficacy is the belief in one's capabilities to organize and execute the courses of action required to produce given attainments. However, the two concepts are also slightly different because PCE measures the effectiveness of their actions (e.g., purchasing, recycling and energy conservation) in terms of making an environmental contribution, while self-efficacy measures effectiveness only in terms of an individual's ability to perform an action, not its environmental consequences. However, researchers have found that religiosity positively influences self-efficacy (Abdel-Khalek & Lester 2017; Wills et al. 2003). Nevertheless, to the best of the researcher's knowledge, no research thus far has attempted to study the influence of religiosity on PCE. Therefore, in the context of the relationship between religiosity and self-efficacy, and the similarities between

PCE and self-efficacy, this research finds it reasonable to expect that religiosity will also enhance an individual's feelings of PCE and thus, favourably contribute towards GPIs. Hence, this study proposes the following hypothesis:

Hypothesis 5c (H5c): Religiosity has a positive and significant influence on PCE.

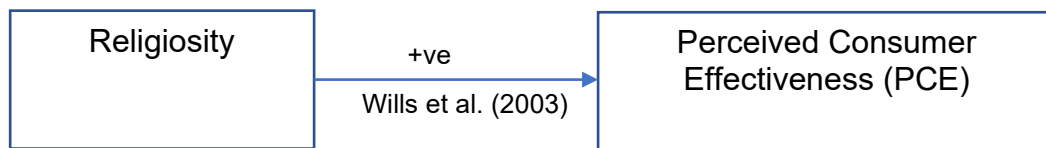


Figure 7: Diagrammatical representation of the relationship between religiosity and perceived consumer effectiveness

Further, as discussed earlier in Section 3.2.2.1, PCE positively influences consumers' GPIs (Kang, Liu & Kim 2013). Therefore, in line with the earlier discussion in this section, it is also expected that PCE will mediate the effect of religiosity on GPIs. Hence, this study proposes the following hypothesis:

Hypothesis 5d (H5d): PCE significantly mediates the relationship between religiosity and GPIs.

3.2.2.3. Religiosity and green purchase intentions

Section 3.2.3.1 and Section 3.2.3.2 discussed the positive influence of religiosity in shaping attitudes and PCE, respectively, while Section 2.4.1 and Section 3.2.2 have already discussed the positive influence of attitudes and PCE on GPIs, respectively. This clearly emphasises the important but indirect ways in which religiosity influences green consumption. However, to fully understand the role of religiosity in the extended TPB framework, it is necessary to also study the direct influence of religiosity on GPIs. Therefore, along the lines of Davari, Iyer and Strutton (2017) and Wang et al. (2019), the current research will also study the direct relationship between religiosity and GPIs. Hence, this study proposes the following hypothesis:

Hypothesis 5e (H5e): Religiosity has a positive and significant influence on GPIs.

Figure 9 shows a diagrammatic representation of the relationship between religiosity and GPIs.

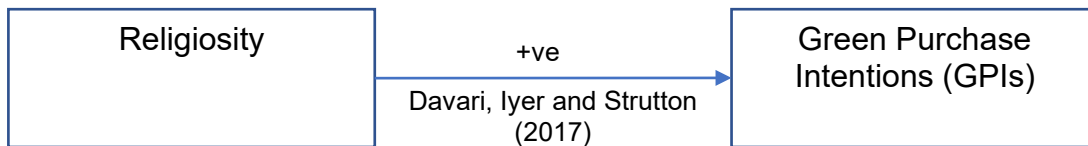


Figure 8: Relationship between religiosity and green purchase intentions

3.2.3. Perceived price

Consumers weigh the cost versus the benefit of a behaviour before performing the behaviour (Cheng, Lam & Hsu 2006). Price is one of the most important costs that a consumer pays, and, in return, good quality is one of the important benefits that a consumer expects. Since price is what consumers must give up for the reward, it is generally believed that for consumers who are price and value-conscious, higher price has a negative influence on their purchase intentions (Zhang, Geng & Sun 2017).

Research has shown that consumers' perception of price can often be biased against green products. For example, the results of an experimental study conducted by Haws, Reczek and Sample (2016) on consumers from the US show that in the absence of detailed information about product attributes, consumers consistently rate green products to be more expensive. Similarly, a meta-analysis involving 79 studies published between 2000 and 2014 found that price is the major perceived barrier to purchasing sustainably sourced food (Aschemann-Witzel & Zielke 2017).

Since perceptions can be different from reality (Beres 1960), adverse consumer perceptions of the price of green products might be a possible contributor towards the attitude–behaviour gap. Therefore, researchers have suggested that green businesses focus on changing consumer perceptions of

price, as it is an important factor to consider to encourage more consumers to buy green (Aschemann-Witzel & Zielke 2017).

Additionally, since green products are generally associated with high prices (Rana & Paul 2017), consumers, especially the price-conscious ones, may see green products as costly alternatives to non-green products. This is especially relevant in the case of green products whose rewards are often reaped in the future (Gleim et al. 2013).

However, contrary to the above claims, consumers who understand the environmental implications of products and services may actually consider going green despite the higher price (Parsa et al. 2015). Research has also established that committed environmentalists are more likely to purchase products based on their environmental contributions, with price being less of a factor in the purchase decision (Chekima et al. 2015; Mohd Suki 2016). This translates into the customer's willingness to pay a little more if they know that products are healthier, safer or better for the environment. Further, several studies have shown that price has a positive role in the purchase process in certain cases, such as in the purchase of prestige products and in scarcity situations (Shewmake & Viscusi 2015; Zhao et al. 2014). Hence, some consumer segments might be willing to pay a higher perceived price if they consider green products as a luxury and use their consumption as a status symbol (Line & Hanks 2015).

Nevertheless, the above discussion clearly shows that the relationship between price and GPIs is complicated because of the contradictory findings reported by several researchers. For instance, Khan and Mohsin (2017) found that price is a primary driver of green product consumer choice in Pakistan, where the consumer evaluates the product in terms of the price paid against the benefits obtained. However, there is a lack of substantial research in this area involving Pakistani green consumers, especially from the perspective of the TPB. Therefore, in light of the existence of contradictory findings and the limited studies available in the context of Pakistani consumers' green consumption, there is a need for further research to study the role of perceived

price in shaping GPIs. Hence, this research proposes the following hypothesis:

Hypothesis 6 (H6): Perceived price has a negative and significant influence on GPIs.

Figure 10 shows a diagrammatic representation of the proposed relationship between perceived price and GPIs.

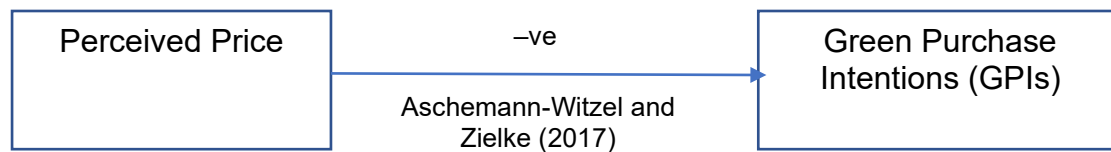


Figure 9: Relationship between perceived price and green purchase intentions

3.2.4. Perceived quality

Research suggests that businesses need to develop products that possess not only greenness but also high perceived value to enhance purchase intentions (Chen & Chang 2012). One of the ways to enhance value perceptions is through enhancing perceptions of product quality (Chen & Dubinsky 2003; Sánchez-Fernández & Iniesta-Bonillo 2007).

Perceived quality is defined as the customer's evaluation of a product's entire superiority or excellence (Bittner & Hubbert 1994; Zeithaml 1988). Therefore, positive consumer perceptions of product quality can strengthen the perceived value of the product by consumers (Nitiwanakul 2014; Rungtrakulchai 2013). Interestingly, when it comes to the quality perceptions of green products, researchers have found that green enhancements lead buyers to assume that the business diverted resources away from product quality, which, in turn, results in a reduction in purchase intentions (Newman, Gorlin & Dhar 2014). This is also supported by the findings of D'Souza, Taghian and Khosla (2007), who found that consumers perceive green products as expensive low-quality

products in comparison to traditional products, and this negatively affects their purchase intentions of such products.

The results of a meta-analysis examining the role of consumers' perceptions of environmentally friendly products in shaping their behavioural intentions found that perceived quality is one of the important variables influencing behavioural intentions (Gao, Mattila & Lee 2016). Similar findings have been reported by researchers from around the world, such as Konuk (2018) in Turkey; Ariffin et al. (2016) in Malaysia; Smith and Paladino (2010) in Australia; and Gil and Jacob (2018) in India. This highlights the importance of quality when going green. Figure 11 shows a diagrammatic representation of the proposed relationship between perceived quality and GPIs.

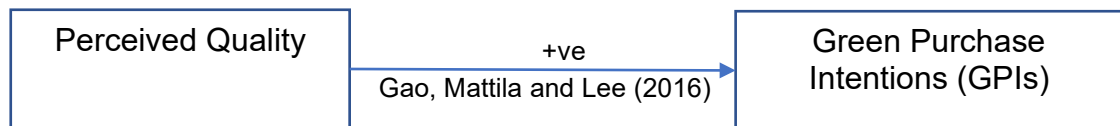


Figure 10: Relationship between perceived quality and green purchase intentions

Thus, green businesses must demonstrate to their consumers that their products are of good quality and that they have not compromised on quality to achieve greenness. Hence, taking into consideration consumers' scepticism towards green product quality and research findings supporting the influence of perceived quality on GPIs, the current research proposes the following hypothesis:

Hypothesis 7: Perceived higher quality has a positive and significant influence on GPIs.

3.2.5. Green purchase intentions and actual green purchases

The current research defines AGPs as the consumption of green products. One of the goals of this research is to identify predictors of GPIs and to rely on the resulting measure of GPIs to study the relationship between GPIs and

AGPs. Thus far, based on a review of the literature, this chapter has identified several variables (i.e., attitudes, SNs, PBC, PCE, quality and price) that are expected to influence Pakistani consumers' GPIs. However, research has also found that these variables influence AGPs through their indirect effect on GPIs (Chan 2001; Jaiswal & Kant 2018; Yadav & Pathak 2016). Supported by the literature, this section will propose a hypothesis to test the mediating role of intentions. Further, this section will also discuss the usefulness of studying the intention–behaviour relationship to understand green consumption.

According to Ajzen (2011), behavioural intentions are indications of a person's readiness to perform a behaviour. The readiness (i.e., intention) to perform a behaviour can be operationalised by asking whether consumers intend to engage in the behaviour, expect to engage in the behaviour, are planning to engage in the behaviour or will try to engage in the behaviour (Ajzen 2011). The current research follows this approach by operationalising GPIs and AGPs, and measuring these using a survey questionnaire. Section 3.2.1 has already discussed how an extended TPB is best suited to predict intentions in the context of green consumption. Green consumer research has also consistently found intentions to be a reliable predictor of actual behaviour (Emekci 2019; Jaiswal & Kant 2018; Trivedi, Patel & Acharya 2018). Further, a meta-analysis specifically focused on the use of the TPB to predict environmental behaviours found that there is, indeed, a positive correlation between sustainable intentions and sustainable behaviours (Schwenk & Möser 2009). Therefore, it can be concluded that intentions are significantly able to predict actual purchases of green products. Hence this study proposes the following hypothesis:

Hypothesis 8 (H8): GPIs have a positive and significant influence on AGPs.

Figure 12 shows a diagrammatic representation of the proposed relationship between GPIs and AGPs.

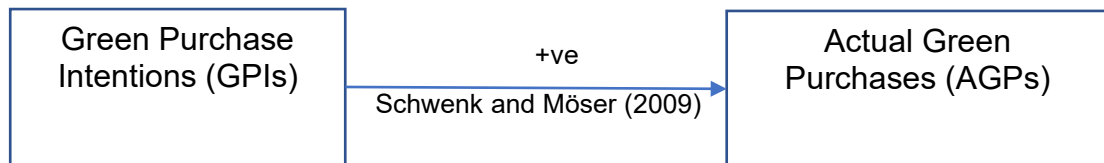


Figure 11: Relationship between green purchase intentions and actual green purchases

3.3. Role of Socio-Demographic Characteristics

Demographic segmentation involves segmenting consumers based on demographic characteristics, such as age, income, family size and socio-economic status (Reid & Bojanic 2009). According to Baker and Hart (2008), demographic segmentation assumes that consumers with similar demographic profiles will exhibit similar motivations, interests and lifestyles and that these characteristics will translate into similar product/brand preferences. Generally, the variables considered for demographic segmentation are personal, social and economic factors, such as age, gender, education, geography and income (Agudo-Peregrina, Chaparro-Peláez & Hernández-García 2018; Gómez & Pérez 2018; Saleem, Eagle & Low 2018).

Demographic segmentation is a method that is often favoured by many market research companies because it is easier to target demographic segments than groups of people divided along attitudinal lines (Morrison & Beer 2017). D'Souza et al. (2007) concluded that demographic analysis is useful in three ways: it can be used in trend analysis, used as market segment descriptors, and it can also provide helpful information for policy questions related to macro marketing. Hence, the ability to identify segments and trends between demographic variables and pro-environmental purchase behaviour will add to theoretical knowledge and assist businesses.

Green consumption researchers have also frequently used demographics in the past. An analysis of the green consumer research domain within sustainability literature for eight five-year periods (1975–2014) identified behavioural intentions, demographics and marketing strategy as the top three research subjects in the domain (Kumar & Polonsky 2017). This approach has

been the focus of green researchers primarily because it helps in the identification and targeting of potential consumer groups. For example, Delafruez and Moghaddam (2017) suggested segmenting consumers along demographic, psychological and behavioural patterns to help businesses understand consumers' purchasing behaviours better and to help them formulate better marketing strategies in the increasingly competitive green product market. Similarly, other researchers have also found demographic segmentation useful in identifying and targeting green consumers. These include studies by Diamantopoulos et al. (2003) in the UK, and Paul and Rana (2012) in India.

Using this approach, green consumption researchers have been able to successfully differentiate unique consumer segments. For example, a demographic comparison between green and non-green Malaysian consumers found education level and gender to be moderating factors for the relationship between intentions and purchase behaviour. Malaysian green consumers were predominantly female consumers with higher disposable income (Chekima et al. 2016). González et al. (2015) also attempted to identify important consumer segments among Mexican consumers based on their pro-environmental behaviours. The chi-square distributions of the data revealed significant differences between the segments for gender, marital status, and income. Further, Do Paco and Raposo (2009) profiled Portuguese green consumers and found them to be in the age ranges of between 25 and 34, and between 45 and 54. Most hold a university qualification, work in highly qualified roles and earn high incomes.

Thus, segmenting green consumers is expected to provide useful theoretical and practical implications for the identification and targeting of unique consumer segments. Therefore, it seems prudent to study not only the psychographic variables but also the relevant socio-demographics that can help in profiling green consumers. In addition, age, gender and education are the most useful criteria to differentiate different green segments (Chekima et al. 2016; Do Paco & Raposo 2009; González et al. 2015). Income is another useful tool to segment consumers. However, less than 1.5 % of Pakistanis file their income tax returns. While, asking someone to reveal their salary is a

taboo in most societies (Cullen & Perez-Truglia 2018). Furthermore, in a collectivist society like Pakistan (Raza & Siddiqui 2021) there can be only one breadwinner for ten individuals which makes it complicated to understand the level of disposal income compared to the actual income. Hence, the next sections in this chapter will focus on exploring the usefulness of age, gender, and education as demographic criteria to segment Pakistani green consumers.

3.3.1. Education

Education is an important demographic variable that influences consumer behaviour. It increases the knowledge and awareness of the advantages and risks of performing a behaviour. It is usually assumed that education plays an important role in encouraging change and that educated consumers are more socially responsible. A good example of this can be observed in Qingdao, China. The Qingdao metropolitan area includes five cities and seven urban districts, where the government has implemented programs, such as developing green communities and enterprises, and promoted environmental awareness among its citizens. Researchers have found that education level is the most important demographic variable influencing green consumer behaviour among the residents of Qingdao (Zhao et al. 2014). Similarly, Jeong et al. (2014) and Hu, Parsa and Self (2010) examined the dynamics of green restaurant patronage and reported that frequent customers are those with higher levels of education.

Similar findings have been reported in other parts of the globe. In Hungary, for instance, Zsóka et al. (2013) found that university students who have a higher level of environmental knowledge are also highly sensitive towards environmental issues when compared to high school students, and these university students are therefore more likely to respond favourably to pro-environmental products. While investigating Chinese students' awareness of sustainability and their perceptions of higher education for sustainable development, Yuan and Zuo (2013) found that a higher level of education increases awareness of environmental issues and is likely to result in sustainable consumption under favourable circumstances.

The above discussion indicates that individuals with higher levels of education are more likely to possess high levels of knowledge, develop positive attitudes and PCE, and purchase environmentally friendly products. However, other researchers have reported conflicting findings to those reported above. For example, Nittala (2014) found that university teachers' level of education does not reflect in their willingness to purchase green products. Similarly, in the case of urban respondents in India, an inverse relationship is reported between education level and socially responsible consumer behaviour (Singh 2009).

Interestingly, Pinto et al. (2011) found that respondents with only primary education are more environmentally conscious, while respondents with secondary and tertiary education do not seem to attribute as much importance to these activities. This inverse relationship identified by some of the researchers can be a result of the higher socio-economic status associated with higher education, which may be giving them a sense of false protection from general environmental problems (Nittala 2014; Pinto et al. 2011). Thus, conflicting conclusions exist, and the question remains unanswered.

3.3.2. Gender

The literature suggests that men and women have differing views on environmental issues and green behaviour due to hereditary causes and gender-based tendencies (Kalamas, Cleveland & Laroche 2014; Matthes, Wonneberger & Schmuck 2014; Zelezny, Chua & Aldrich 2000). This is also related to the different ways the two genders absorb and evaluate information on different issues (Iversen & Rundmo 2002). Similarly, Zelezny, Chua and Aldrich (2000) conducted a comparative study covering 14 countries regarding gender differences in attitudes towards sustainability, and their findings show a significant difference between the genders in behaviour patterns and environmental attitudes, and women were found to more pro-environment than men.

Further, researchers have found that women are not just likely to participate in pro-environmental behaviour but also have greater intention to purchase

green products (Kalamas, Cleveland & Laroche 2014; Matthes, Wonneberger & Schmuck 2014). In a study involving a sample of 3,000 US hotel patrons, Han et al. (2011) found that gender differences in purchase intentions towards green hotels exist and that female hotel customers show greater willingness to visit a green hotel, recommend it to others and even to pay more for it. Similarly, a study on consumers' purchase intentions towards a value-added product (i.e., furniture) and a non-value-added product (i.e., plywood) found that female customers and those familiar with the concept of environmental certification were more likely to prefer green products in both value-added and non-value-added forms (Thompson et al. 2010).

Contrary to the findings discussed above, in a study involving Malaysian consumers, Chen and Chai (2010) found that there were no significant differences between the two genders in their GPIs. In their study, Diamantopoulos et al. (2003), following an interdisciplinary review of the literature, found that men have more knowledge about environmental issues than women, and therefore, they act more responsibly towards the environment. This indicates that male and female consumers respond differently to pro-environmental stimuli in different geographic regions. However, contradictory findings exist as to which gender group exhibits higher levels of GPIs. Hence, the current research will differentiate between Pakistani male and female consumers based on their GPIs to identify which gender exhibits higher levels of GPIs.

3.3.3. Age

Age is another important demographic measure, which can assist in understanding the demographic profile of green consumers, as established by de Medeiros, Ribeiro and Cortimiglia (2016). In a study on the automotive and furniture sectors in Brazil, de Medeiros, Ribeiro and Cortimiglia (2016) observed that gender and age positively affect purchase intentions towards green products. Further, Namkung and Jang (2017) found significant differences in the willingness to pay for green restaurants among different age groups, identifying those green customers to be younger than non-green ones. Similarly, Chen and Chai (2010) found age to be significantly correlated with

Malaysian consumers' behaviour, and they also reported that younger individuals are likely to be more sensitive to environmental issues.

The discussion thus far has clearly identified younger people as being more environmentally aware than older people, mainly because the young grew up in an era of greater environmental awareness. However, other researchers have found older people to exhibit pro-environmental behaviour (Laroche, Bergeron & Barbaro-Forleo 2001). Similarly, in their attempt to answer the research questions, 'Who are the most pro-environmental in their purchasing behaviour? Is it the young, middle-aged or older consumers?' Morrison and Beer (2017) found that higher levels of environmental awareness are characteristic of the middle-aged consumer while a relatively lower percentage of the young exhibits pro-environmental behaviour. Further, Pinto et al. (2011) found that green consumers tend to be older and have lower levels of education. The researchers attribute this to the higher susceptibility of young people to perform wasteful activities, while seniors are more careful in reducing waste. One potential explanation put forward by Pinto et al. (2011) is that seniors are more concerned about future generations. As they possibly have children or grandchildren, they can be more sensitive to environmental appeals.

Although the above review of the literature indicates that consumers from different age groups differ in terms of their GPIs, there is a distinct lack of consensus among scholars on which age group exhibits higher levels of GPIs. Hence, this study will attempt to establish if Pakistani consumers' GPIs differ based on their age.

Thus, age, gender and education are the most commonly used socio-demographic criteria for segmenting green consumers' income (Kumar & Polonsky 2017). Researchers have also been able to differentiate among consumers based on their GPIs and the socio-demographic group they belong to, according to their age (Morrison & Beer 2017), gender (Sreen, Purbey & Sadarangani 2018), and education (Nittala 2014). However, the applicability of these findings is not generalisable, as different socio-demographic consumer groups from different markets have not been found to exhibit consistent GPIs.

Further, in the case of Pakistan, apart from Saleem, Eagle and Low (2018), there has not been any significant research done that has focused on demographically differentiating Pakistani consumers in terms of their GPIs. Therefore, in light of the existence of conflicting research findings and a lack of research concerning demographic differences among Pakistani green consumers, this research will attempt to identify if Pakistani green consumers differ based on socio-demographic criteria, such as age, gender and education. Hence, this study proposes the following hypotheses:

- Hypothesis 9a: Pakistani consumers' GPIs differ significantly based on their level of education.
- Hypothesis 9b: Pakistani consumers' GPIs differ significantly based on their gender.
- Hypothesis 9c: Pakistani consumers' GPIs differ significantly based on their age.

3.4. Summary of Hypotheses

Based on a review of the green consumer literature discussed in Chapter 2 and Chapter 3, this research proposes 26 hypotheses organised around nine variables. The hypotheses are summarised in Table 2.

Table 2: Summary of the proposed hypotheses

Theory of Planned Behaviour	
<i>Attitudes</i>	
H1	Attitudes towards green products have a positive and significant influence on GPIs.
<i>Subjective norms</i>	
H2	Subjective norms have a positive and significant influence on GPIs.
<i>Perceived behavioural control (PBC)</i>	
H3	PBC has a positive and significant influence on GPIs.
Extended Theory of Planned Behaviour	
<i>Perceived consumer effectiveness (PCE)</i>	
H4a	PCE has a positive and significant influence on attitudes towards green products.

H4b	Attitudes towards green products significantly mediate the relationship between PCE and GPIs.
H4c	PCE has a positive and significant influence on GPIs.
<i>Religiosity</i>	
H5a	Religiosity has a positive and significant influence on attitudes towards green products.
H5b	Attitudes towards green products significantly mediate the relationship between religiosity and GPIs.
H5c	Religiosity has a positive and significant influence on PCE.
H5d	PCE significantly mediates the relationship between religiosity and attitudes.
H5e	Religiosity has a positive and significant influence on GPIs.
<i>Perceived price</i>	
H6	Perceived price has a negative and significant influence on GPIs.
<i>Perceived quality</i>	
H7	Perceived quality has a positive and significant influence on GPIs.
<i>Green purchase intentions (GPIs)</i>	
H8	GPIs have a positive and significant influence on AGPs.
<i>Socio-demographics</i>	
H9a	Pakistani consumers' GPIs differ significantly based on their level of education.
H9b	Pakistani consumers' GPIs differ significantly based on their gender.
H9c	Pakistani consumers' GPIs differ significantly based on their age.

3.5. Proposed Model of the Extended Theory of Planned Behaviour

Based on the review of literature, a conceptual model for this study has been developed and is presented in Figure 13. The proposed model represents the independent variable, mediators, and the dependent variable. The model also depicts the direction of the relationships while the position of each variable in the model represents its role as an independent, mediator and/or dependent variable.

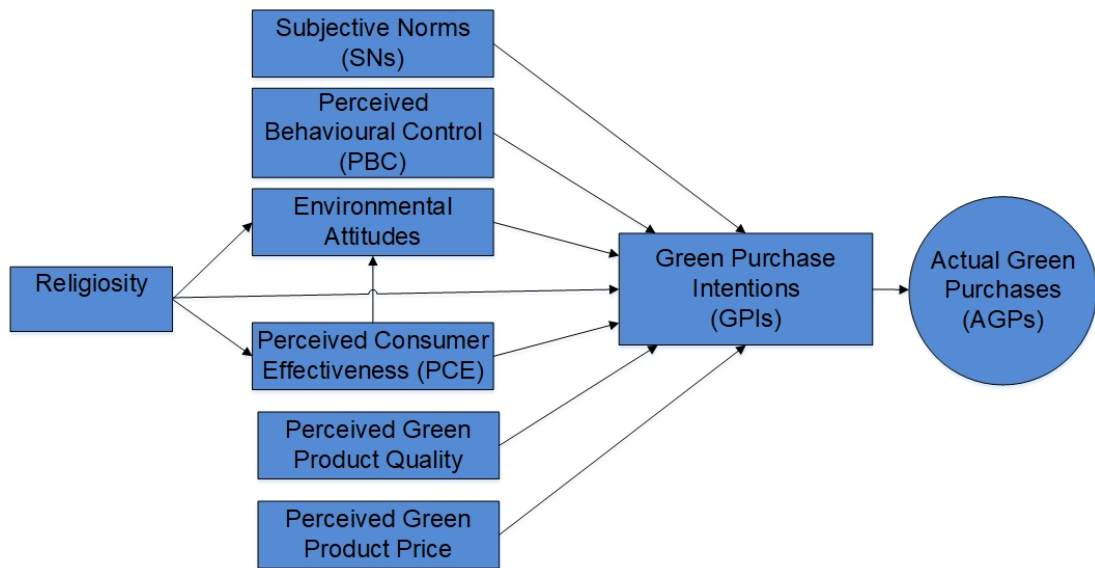


Figure 12: Proposed conceptual model

3.6. Chapter Summary

Based on a review of literature, this chapter has explored different variables for TPB theory extension and identified PCE, perceived quality, perceived price and religiosity as the variables that are most suited to the needs of the current research. Further, this chapter also identified age, education and gender as the most relevant socio-demographic variables that can help to achieve the study objective of profiling green consumers demographically. The comprehensive review of the literature performed in this chapter will form the foundation of this study and determine the factors that influence GPIs, which will help in understanding the relationship between GPIs and AGPs.

Chapter 4. Methodology

4.1. Introduction

The objective of this chapter is to provide a detailed explanation and justification of the methodology used in this study. This chapter commences with a discussion on the selection of the research paradigm and the research approach best suited to the requirements of the current study. This is followed by a justification of the selection of the research design and data collection methods. This chapter concludes with a discussion on the methodological and ethical considerations of this study.

4.2. Research Paradigm

A research paradigm is the set of common beliefs and agreements shared between scientists about how problems should be understood and addressed (Kuhn 1962). The three most commonly cited research paradigms are positivism, realism and constructionism (Bryman & Bell 2015; Saunders, Lewis & Thornhill 2007; Sekaran & Bougie 2016). Realism believes that there is a real world to discover even though it is only imperfectly apprehensible (Molloy 2003) while constructionism believes that reality is invented, constructed largely out of meanings and values of the observer (Allen 1994). The current research follows a positivist epistemological position, which advocates for the application of the methods of the natural sciences to the study of social reality (Bryman & Bell 2015; McGregor & Murnane 2010; Sekaran & Bougie 2016). As per the positivist paradigm, the world operates by laws of cause and effect, and a phenomenon could be understood using a scientific method to research (Sekaran & Bougie 2016). Although there have been numerous objections to the use of this method, however it remains the predominant method in natural, social, and business sciences (Sekaran & Bougie 2016). Under a positivist paradigm, the world operates by laws of cause and effect, and a phenomenon can be understood by applying a scientific method to research (Sekaran & Bougie 2016). A positivist ontology assumes that there is an objective reality,

which, epistemologically, can be studied with knowable levels of certainty using objective scientific methods (Hanson & Grimmer 2007).

Further, the two approaches followed in scientific research are induction, and deduction. Induction is the logical process of establishing a general proposition based on observation of particular facts while deduction is the logical process of deriving a conclusion about a specific instance based on a known general premise or something known to be true. (Zikmund et al. 2012). Positivist epistemology assumes that the only way people can be certain that knowledge is true is if it were created using the scientific method (McGregor & Murnane 2010). This is achieved using deductive reasoning to put forward hypotheses that can be tested by means of a fixed research design and objective measures (Sekaran & Bougie 2016). Further, the scientific method typically emphasises the use of a wide range of statistical measures to establish reliability and validity (Bryman & Bell 2015; McGregor & Murnane 2010). Finally, the goal of research conducted in this manner is replication and theory testing, which leads to control, prediction and explanation (Bryman & Bell 2015; McGregor & Murnane 2010).

The objectives of the current research are to propose and test hypotheses to extend a theory, which, in this case, is the TPB. Further, the current research uses a fixed systematic research design involving a structured survey questionnaire and a two-step sampling technique to collect data for statistical analysis. Finally, the current research uses validated scales to measure phenomena, while the data collected through these scales are statistically tested for reliability. Therefore, the current research adopts a scientific approach to achieve its objectives, as propagated by a positivist research paradigm.

4.3. Research Approach

The two most commonly used approaches to research are deduction and induction (Bryman & Bell 2015; Saunders, Lewis & Thornhill 2007; Sekaran & Bougie 2016). Inductive approach involves collecting and analysing data in order to develop theory (Saunders, Lewis & Thornhill 2007). On the other

hand, the deductive approach, based on a review of the existing literature and theoretical consideration, deduces hypotheses that are then subjected to empirical scrutiny (Bryman & Bell 2015). The current research uses the deductive approach in that it deduces hypotheses from theory, which, in this case, is the TPB. Further, it operationalises the hypotheses for measurement using a structured survey questionnaire. Finally, it subjects the hypotheses to empirical testing using various statistical tools to recommend theory confirmation or modification.

4.4. Research Design

A research design is a blueprint or plan for the collection, measurement and analysis of data and is created to answer the research questions of a study (Sekaran & Bougie 2016). According to Malhotra (2015), there are three basic research designs, which include causal research, exploratory research and descriptive research (Cooper & Schindler 2006). Descriptive research aims to answer the questions of 'who', 'what', 'where', 'when' and 'how'. The current research uses a descriptive research design to identify the factors that influence Pakistani consumers' GPIs and to examine if Pakistani consumers' GPIs lead to AGPs. In addition, descriptive research describes aspects of the environment when the hypotheses are tentative and speculative in nature (Neuman 2012). The current study also proposes hypotheses to predict the relationships among the constructs, such as the relationship between religiosity and PCE, and the effect of religiosity and PCE on attitudes (see Section 3.4).

Moreover, descriptive research is conducted when some preliminary investigations have already been conducted regarding the research problem. As evident from the earlier chapters, consumers' green purchase behaviour has been an area of interest among researchers for some time; therefore, it is very clear that preliminary investigations in the form of exploratory research have already been conducted. Further, the current research proposes to test, modify, and extend a theory. Therefore, the research purpose of the current study is descriptive in that it commences with the study of a well-defined issue (i.e., GPIs) and attempts to produce a more accurate and detailed

conceptualisation of this issue (Neuman 2012). Hence, to meet its research objectives, this study employs a descriptive research design.

Since an appropriate research design has been identified, the next sections will discuss elements of the research design, including the extent of researcher interference, study setting, unit of analysis and time horizon.

4.4.1. Study setting

Descriptive research is conducted in non-contrived settings, and such studies can also be field studies, as they are conducted in the same natural environment where the subjects normally function (Ghauri & Grønhaug 2005; Sekaran & Bougie 2016). Considering the descriptive research design, and the fact that the data collection related to the shopping intentions, and actual shopping behaviours, therefore the data collection for the current research was conducted in a natural environment, and the data was collected from the visitors to various shopping malls under routine circumstances.

4.4.2. Unit of analysis and time horizon

It is necessary to decide on the unit of analysis since choices for data collection methods and sample size are guided by this. The unit of analysis for the current study is individual visitors to various shopping malls in Pakistan. Further, in line with the descriptive design of this study, the current research uses a cross-sectional approach by surveying the visitors at various shopping malls at a single point in time (Ghauri & Grønhaug 2005; Sekaran & Bougie 2016).

4.5. Methods

Methods are the techniques and procedures used to obtain and analyse data (McGregor & Murnane 2010; Saunders, Lewis & Thornhill 2007). The following sections will describe the data collection, instrumentation, scaling and sampling methods that were used in this study.

4.5.1. Data collection

The methods of data collection commonly used within a descriptive research design are surveys, case studies and observation-based methods (Malhotra 2015). Considering that the theoretical foundations of the current research are based on the TPB framework, quantitative data collected through a survey-based instrument were used to test the hypotheses.

4.5.2. Survey instrument

This study uses a four-page survey that is printed double-sided on A4 paper. This includes the information sheet, spanning two pages, and the actual questionnaire, spanning two pages as well. The survey questionnaire consists of 30 questions. To ensure the validity of the items in the scale, all the items were adapted from pre-existing scales that have a proven track record of validity and reliability. The language for the items was slightly modified to suit the context of green consumption and for ease of understanding from the perspective of a Pakistani reader. Further, the survey questionnaire and the information sheet were peer-reviewed by fellow researchers at the Tasmanian School of Business and Economics and the supervisory team. Subsequently, the survey questionnaire and the information sheet were submitted to the Tasmanian Social Sciences Human Research Ethics Committee (TSS-HREC) for approval, and this approval was granted with the approval number HERC # H0018125 (see Appendix B for the questionnaire and Appendix C for the information sheet).

The survey questionnaire is in English, which is one of the two official languages in Pakistan and is a compulsory subject in school and college. This approach had been successfully used by studies researching green consumption in Pakistan before (Al-Swidi et al. 2014; Khan & Mohsin 2017; Konuk, Rahman & Salo 2015). Further, all the original measures adapted from previous research to develop the survey questionnaire were also in English. The decision to use English as the language of the questionnaire was discussed in detail in Section 1.8. Nevertheless, before administering the

questionnaire, the researcher asked respondents a preliminary question to ascertain that they could read English.

Consumers who agreed to participate in this study were provided with a cover sheet with a brief explanation of the purpose of the study, an introduction to the research team, contact details of the research team, and the HREC approval and number. The information sheet also informed the participants regarding their rights to stay anonymous and their right to refuse to participate or withdraw at any time without providing a reason (see Appendix C for the information sheet). Finally, the information sheet provided a brief explanation of the term 'environmentally friendly'. Once the survey was completed, the researcher thanked the respondents for their cooperation. The constructs and items used in the survey questionnaire will be explained further at this juncture.

Consumers' *attitudes* towards green consumer goods were measured using three items (i.e., Item 01 to Item 03 in the questionnaire), which were adapted from the work of Ajzen and Fishbein (1969).

SNs were measured using three items (i.e., Item 04 to Item 06), which were adapted from the work of Ajzen and Fishbein (1969) and Al-Swidi et al. (2014)

PBC was measured using three items (i.e., Item 07 to Item 09), which were adapted from the work of Ajzen (1991) and Al-Swidi et al. (2014)

PCE was measured using three items (i.e., Item 10 to Item 12), which were adapted from the work of Roberts (1996) and Straughan and Roberts (1999).

Perceived price was measured using three items (i.e., Item 13 to Item 15), which were adapted from the work of Sweeney and Soutar (2001):

Perceived quality was measured using three items (i.e., Item 16 to Item 18), which were adapted from the work of Washburn and Plank (2002).

GPIs were measured using three items (i.e., Item 19 to Item 21), which were adapted from the work of Ajzen and Fishbein (1969) and Al-Swidi et al. (2014).

Religiosity was measured using three items (i.e., Item 22 to Item 24), which were adapted from the work of Worthington Jr et al. (2003).

AGPs were measured using three items (i.e., Item 25 to Item 27), which were adapted from the work of Roberts (1996).

Table – 3 below lists the individual items used to measure each of the variables:

Table – 3: Scale items

Variable	Item
Attitude 1	For me, buying environmentally friendly products is good.
Attitude 2	For me, buying environmentally friendly products is pleasant.
Attitude 3	For me, buying environmentally friendly products is attractive.
Subjective Norms 1	The trend of buying environmentally friendly products among people around me is increasing.
Subjective Norms 2	People around me generally believe that it is better for one's health to use environmentally friendly products.
Subjective Norms 3	My close friends and family members would appreciate it if I bought environmentally friendly products.
Perceived Behavioural Control 1	I can afford to buy environmentally friendly products.
Perceived Behavioural Control 2	I have complete information regarding where to buy environmentally friendly products.
Perceived Behavioural Control 3	Environmentally friendly products are easily available where I live.
Perceived Consumer Effectiveness 1	I feel that I can help solve natural resource problems by conserving water and energy.
Perceived Consumer Effectiveness 2	I can protect the environment by buying products that are friendly to the environment.
Perceived Consumer Effectiveness 3	I feel that I am capable of helping to solve environmental problems by buying environmentally friendly products.
Perceived price 1	Environmentally friendly products offer value for money.
Perceived price 2	The price of environmentally friendly products is reasonable.
Perceived price 3	The price of environmentally friendly products is affordable.
Perceived quality 1	The likely quality of environmentally friendly products is extremely high.
Perceived quality 2	The likelihood that environmentally friendly products are functional is very high.
Perceived quality 3	The likelihood that environmentally friendly products are reliable is very high.
Green Purchase Intentions 1	I am willing to buy environmentally friendly products in the future.

Green Purchase Intentions 2	I plan to buy environmentally friendly products on a regular basis.
Green Purchase Intentions 3	I would look for specialty shops to buy environmentally friendly products.
Religiosity	I spend time trying to grow in understanding of my faith.
Religiosity	Religion is especially important to me because it answers many questions about the meaning of life.
Religiosity	Religious beliefs influence all my dealings in life.
AGPs	I have regularly bought environmentally friendly products in the last month.
AGPs	I have often bought environmentally friendly products in the last week.
AGPs	I often buy environmentally friendly products whenever I can.

The survey questionnaire also contained one item each for three related socio-demographic variables. The following items were used for *age group* (i.e., Item 28), *gender* (i.e., Item 29) and *education qualification* (i.e., Item 30), respectively:

- What is your age group?
- What is your gender?
- What is your level of education?

4.5.3. Scaling

Scaling is the procedure of assigning numbers to the property of an object (Cooper & Schindler 2006). The current research employs quantitative methods within a descriptive research design, which requires data to be collected on a scaled instrument to test hypotheses. Therefore, after creating an item pool for the survey instrument, it is necessary to identify a suitable scale to collect quantifiable responses.

One of the most commonly used scales in consumer research to collect quantifiable responses is the Likert scale (Aaker 2016). Developed by Rensis Likert, this scale is used to provide an ordinal measure of a person's attitude (Likert 1932). According to Neuman (2012), Likert scales are simple, which

makes them easy for respondents to use, and the scales are also quick, efficient and inexpensive for data collection. Likert scales are particularly suitable for studies on attitudes as they do not expect a simple 'yes' or 'no' answer from the respondent but rather allow for degrees of opinion (Cooper & Schindler 2006). Consequently, the responses thus generated are quantifiable and can be subjected to computation for statistical analysis.

The current quantitative study also seeks quantifiable opinions regarding the degree to which certain factors affect consumers' intentions to purchase green products. Further, since the survey instrument has at least three items for each construct, the summation of the items through a Likert scale allowed the generation of a quantified total score for the respondents (Aaker 2016; Sekaran & Bougie 2016). The quantifiable data thus collected made it possible to test the hypotheses using statistical tools, such as correlation and regression. Further, since the current study adapted its instrument from earlier studies that had also used the Likert scale, as per the recommended best practice, the original scales were used (Heggestad et al. 2019; Juniper 2009). Based on the requirements of the current study and the research precedence, Likert scales were thus identified as the most appropriate scale to measure the constructs. A five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used for Item 01 to Item 27. Different scale poles were used to measure socio-demographic variables, including three-point ordinal scales for age and education, while a three-point nominal scale was used for gender (see Appendix B).

4.6. Population and Sample

The population refers to the entire group of people, events or things of interest that the researcher wishes to investigate (Sekaran & Bougie 2016). The population of this study was the consumers in Pakistan. The importance and relevance of studying Pakistani consumers' purchase behaviour towards green products were justified in Chapter 1. Pakistan is the world's sixth-most populous country, with a population of 192 million (UNCTAD 2018). Following the recommendation of Sekaran and Bougie (2016) in the case of large population, a sample of Pakistan's population was interviewed.. Section 4.6.1

and Section 4.6.2 will justify the selected sampling technique, the corresponding sample size and how they met the requirements of the current research to help realise its objectives.

4.6.1. Sampling technique

Pakistan, with a total area of approximately 88,000 km² is the thirty-third largest nation in the world by total area. This makes it next to impossible for a researcher to travel to all the states and territories to collect data, especially considering resource constraints, specifically time and financial limitations. Therefore, a two-step sampling mechanism was adopted. In the first step, four major metropolitan cities were identified, and in the second step, convenience sampling was used to approach the respondents in these cities. In consumer research involving large populations, it is usual to target consumers in metropolitan cities, as done by He et al. (2016) in China and Madureira et al. (2015) in France and Portugal. Hence, convenience sampling focusing on four metropolitan cities—Lahore, Islamabad, Rawalpindi and Sargodha—was used to select the participants.

Convenience sampling involves approaching the most easily accessible members in the population (Sekaran & Bougie 2016). In this current study, the researcher administered mall intercept surveys to visitors of different shopping malls in the target cities. The mall intercept process started with the researcher randomly intercepting a mall visitor, introducing himself and explaining the purpose of the research. The researcher asked two screening questions to establish if the respondent is 18 years of age or older, and if they can read, and understand English language. The researcher then asked for the respondent's consent to participate in the survey. Respondents who agreed to participate, answered the questionnaires based only on their personal opinions without any assistance and/ interference of the researcher. Shopping malls are a useful location for collecting data regarding consumers' purchase behaviour as they are shopping in a natural environment. Past researchers, such as Prakash, Singh and Yadav (2018) and Awuni and Du (2016), have successfully used the mall intercept survey technique in a green context while soliciting data from consumers located in multiple geographical

regions. No other socio-demographic or geo-demographic screening criteria were used.

4.6.2. Sample size

A total of 450 survey questionnaires were distributed. The sample size of 450 is comparable to past research employing structural equation modelling to test TPB based hypotheses in the context of green consumption, such as the study done by Botetzagias, Dima and Malesios (2015), who used data from 293 respondents to study how an individual's SNs and demographic characteristics interacted with TPB predictors in an environmental context. Similarly, Chekima et al. (2016) used data from 405 respondents to study motivational factors that influence GPIs. In another study, Han and Hyun (2017) used data from 429 respondents to study the applicability of a combined version of the TPB and the Norm Activation Theory in an environmentally responsible museum context. Other research studies that were able to achieve significant statistical outcomes with similar sample sizes include the study done by Hsu, Chang and Yansritakul (2017) in the context of green skincare products (with a sample size of 305) and the study conducted by Jaiswal and Kant (2018) in the context of cognitive factors influencing GPIs (with a sample size of 351). Therefore, to achieve the research objectives, the use of convenience sampling using a survey-based instrument to collect data from 450 respondents is justified. By the end of the data collection exercise, out of the 450 questionnaires circulated, 431 questionnaires were successfully collected. Based on the recommendation of (Kim 2005) the final sample size of 431 is adequate for hypothesis testing using structural equation modelling. All the questionnaires were allocated a unique case number between 1 and 431. Data from the 431 questionnaires was manually entered by the researcher in an excel file. Finally, the data entered in the excel was matched with every 20th case to ensure the accuracy of the excel file.

4.7. Methodological Considerations

The data for the current study was collected through self-report survey questionnaires only, which can result in issues such as common method variance (CMV), socially desirable bias (SDB) researcher interference and unengaged respondents. Therefore, this section will explain the steps that were taken to address and minimise the effect of these issues.

4.7.1. Common method variance

According to Podsakoff (2003, p. 879), CMV is the 'variance that is attributable to the measurement method rather than to the constructs the measures represent'. CMV can be a problem with self-report surveys, as this method can 'create false correlations if the respondents have a propensity to provide consistent answers to survey questions that are otherwise not related' (Chang, Van Witteloostuijn & Eden 2010, p. 178).

The current study took several measures to address this issue. For example, as recommended by Chang, Van Witteloostuijn and Eden (2010, p. 179), this current study used differently ordered questionnaires to reduce the likelihood of CMV. This was achieved by reordering the questions to create two different versions of the same survey questionnaire. Additionally, collinearity diagnostics, using linear regression, were performed using the Statistical Package for the Social Sciences (SPSS) software to calculate variance inflation factor (VIF) scores for all the variables, which helps identify issues with regards to CMV. Finally, past researchers have also suggested the use of complicated specifications of regression models to reduce the likelihood of CMV (Chang, Van Witteloostuijn & Eden 2010, p. 179). The current research achieved this by using SEM, which is a regression-based second-generation data analysis technique (Byrne 2013).

4.7.2. Social desirability bias

Social desirability bias (SDB) results from a respondent's tendency to answer a survey in a way that may be viewed favourably by others, that is, by over-reporting good behaviour and under-reporting bad behaviour (Lavrakas 2008).

The current research minimises the likelihood of SDB by taking multiple measures to remove and/or reduce the social pressure on the respondents. For example, participation in the survey was voluntary, and the participants were also informed of their rights, including the right to stop answering the questions at any time without having to provide a reason. Further, the participants themselves marked their responses on a printed sheet, and no personally identifiable questions were asked, and this reduced the likelihood of SDB.

4.7.3. Unengaged responses

It is important for the data to be free from unengaged responses because their presence 'biases observed scores from achievement tests and surveys in practically and statistically significant ways' (Soland, Wise & Gao 2019, p. 151). The current research identified and removed unengaged responses by following the practice of identifying unengaged responses using standard deviations (Geraghty, Doleman & De Leo 2019; Nadhim et al. 2018).

4.7.4. Researcher interference

Descriptive research is conducted in a natural environment with minimal interference to the normal flow of events (Sekaran & Bougie 2016). In the current study, the researcher's influence on the routine purchase behaviour of mall visitors was kept to a minimum, as consumers were not handed survey questionnaires while they were inside a store. In this case, beyond administering a questionnaire to mall visitors while they were entering or leaving the mall, the researcher did not interfere with the normal activities of the shoppers.

4.8. Ethical Considerations

This study was conducted after obtaining due approval from the Tasmania Social Sciences Human Research Ethics Committee (TSS-HREC, with the approval number H0018125 (see Appendix C). The information sheet attached to every survey questionnaire informed the respondents about their rights,

such as voluntary participation, the right to withdraw without providing a reason and the fact that no personal information will be sought or retained.

Further, the information sheet also provided the respondents with the contact information of the researcher, the academic supervisory team and the TSS-HREC. None of the participants contacted either the researcher or the academic supervisors with any query or concern. Similarly, no issues were raised with the TSS-HREC by those approached to fill the survey questionnaire, nor by any of the eventual respondents.

Finally, the information sheet informed the respondents that the completed questionnaires would be stored in a locked cabinet for five years at the University of Tasmania, Sandy Bay, Hobart. At the expiration of the five-year minimum data storage requirement, the researchers will review the need for the continued storage of the data and will ensure that any further storage continues to be in a securely locked University of Tasmania facility. Should the researchers, at any point after the initial five-year minimum, decide that the data should no longer be usefully retained, they will, in consultation with the heads of their organisational units, destroy the survey questionnaires through shredding in a manner that leaves no traces behind, in accordance with the University of Tasmania data retention and destruction policies and procedures.

4.9. Chapter Summary

This chapter started with a discussion of the research paradigm and research approach, which identified the positivist research paradigm and the deductive approach, which were best suited to the needs of the current study. Subsequently, the chapter discussed the major components of the research design, including the measurement scale and sampling technique. Finally, methodological and ethical considerations were addressed towards the end of the chapter.

Chapter 5. Data Analysis and Results

5.1. Introduction

This chapter presents the results of the data analysis. This chapter begins with an explanation of the data preparation and screening process, and the results of preliminary analyses, including tests of the data for assumptions of linearity, normality, multicollinearity and homoscedasticity. This chapter then discusses the steps taken to address the issue of common method variance and socially desirable responses. This is followed by the setting up of measurement and structural models as part of SEM to test the hypotheses. Finally, the analysis of variance (ANOVA) is used to test for significant differences in GPIs based on different socio-demographic characteristics. This chapter concludes with a table summarising the results of the hypothesis testing.

5.2. Data Preparation and Screening

This section describes how the data were screened to ensure that they were useable, reliable and valid for testing the causal theory (Cook 1977). Since the current research uses SEM, which is a regression-based technique, for hypothesis testing (Byrne 2010, p. 3), this section will also describe how the data met the regression assumptions, which are normality, linearity, homoscedasticity, multicollinearity, and the absence of influential multivariate outliers (Osborne & Waters 2002a). Additionally, since missing data can create major problems when running SEM-based analyses (Bentler & Chou 1987; McCulloch 1985), it was important to remove entries that contain a significant amount of missing data. Hence, questionnaires with a significant number of unanswered questions (i.e., five or more) were excluded from the dataset. This resulted in the exclusion of six questionnaires, which brought the sample size to 431. Further, the missing values in the remaining data were imputed using SPSS through the series mean method, which involved replacing missing values with the mean for the entire series (Lomax & Schumacker 2004). None of the items had missing values exceeding 2.02%, which was below the acceptable threshold of 10% (Kline 1998, p. 75).

5.2.1. Removing unengaged respondents

SEM requires a certain number of data points to compute estimates. Therefore, it was important that unengaged respondents, who responded using the same response category for all or many items, be removed from the dataset. Following the practice of identifying unengaged responses using standard deviations, two cases with a standard deviation of ≤ 0.5 were removed, bringing the sample size to 429 (Geraghty, Doleman & De Leo 2019; Nadhim et al. 2018).

5.2.2. Testing for regression assumptions

Following the recommendations of Osborne and Waters (2002a), the data were tested for the assumptions of normality, multicollinearity, linearity, homoscedasticity and the absence of influential multivariate outliers.

First, to test for multivariate normality, Cook's distances for all the predictors of AGPs and GPIs were observed using a scatter plot in SPSS. As a result, two cases with a Cook's distance of 0.043 and 0.053 for AGPs and one case with a Cook's distance of 0.085 for GPIs were deleted to help strengthen the observed regressions (Schumacker & Lomax 2010). The deletion of the influential outliers brought the sample size to 426. Further, skewness and kurtosis scores for all the individual items were in the acceptable range of ± 1.5 (Kline 2004, pp. 49-50; Schumacker & Lomax 2012, p. 62). This range is especially true in the case of studies with a large sample size ($N \geq 300$) (Kim 2013, p. 53). Table – 4 below presents the skewness, and kurtosis scores for the items:

Table – 4: Skewness and kurtosis

Item	Skewness	Kurtosis
A1	–1.416	2.183
A2	–1.133	1.579
A3	–.784	.314
SN1	–.150	–.548
SN2	–.706	–.023
SN3	–.568	–.246

PBC1	-.680	.217
PBC2	-.054	-.713
PBC3	.040	-.921
PCE1	-.896	.468
PCE2	-1.081	.938
PCE3	-.570	.162
PP1	-.410	-.167
PP2	-.082	-.483
PP3	-.182	-.342
PQ1	-.258	-.273
PQ2	-.190	-.486
PQ3	-.532	.069
PI1	-1.256	1.799
PI2	-.513	-.183
P13	-.509	-.068
R1	-.496	-.091
R2	-1.422	1.620
R3	-1.157	.916
PB1	.000	-.716
PB2	.445	-.926
PB3	.607	-.165

Note: Standard error of skewness = 0.118; standard error of kurtosis = 0.236; $N = 426$; A1, A2, A3 = Attitude; SN1, SN2, SN3 = Subjective Norms; PBC = Perceived Behavioural Control; PCE = Perceived Consumer Effectiveness; PP = Perceived Price; PQ = Perceived Quality; PI = Green Purchase Intentions; R1, R2, R3 = Religiosity; PB = Actual Green Purchases

Second, multicollinearity makes some variables statistically insignificant when they should be significant (Daoud 2017). It exists when two or more independent variables in the regression model are correlated. Multicollinearity was assessed using the VIF. The VIF values for all the predictor variables were less than 1.60, and the tolerance values were greater than 1.4. This indicates that there were no issues with regard to multicollinearity (Kock 2015, p. 8; O'brien 2007, p. 685). Table – 5 presents the collinearity diagnostics for the variables:

Table – 5: VIF scores for assessing multicollinearity

Predictor	Tolerance	VIF
Subjective norms	.719	1.391
Perceived consumer effectiveness	.625	1.599
Perceived behavioural control	.802	1.248
Religiosity	.796	1.257
Perceived quality	.802	1.247
Perceived price	.812	1.231
Attitude	.597	1.674
Purchase intentions	.584	1.712

Third, the deviation from linearity scores obtained through the ANOVA test in SPSS was used to assess linearity. The F-values for deviation from linearity for none of the predictor variables were found to be significant ($p \geq 0.05$), indicating that all the relationships with the dependent variable can be assumed to be linear.

Fourth, according to (Osborne & Waters 2002b) homoscedasticity indicates that the variance of errors is the same across all levels. The absence of homoscedasticity can seriously weaken the analysis, thus increasing the possibility of a Type I error. Therefore, homoscedasticity was assessed using scatter plots with fit lines created through SPSS. The fit line plotted in the scatter plots for all the predictors of GPIs and AGPs showed that the amount of distance of responses from the fit line stayed consistent throughout, therefore indicating no issues with homoscedasticity (Osborne & Waters 2002b).

Appendix D shows the scatter plots of the Cook's distances for GPIs and AGPs, skewness and kurtosis scores, results of collinearity diagnostics and results of ANOVA for deviation from linearity.

5.2.3. Common method variance

The issue of common method variance was partially addressed in Chapter 4 (see Section 4.7.1), as the researcher used differently ordered versions of the

same survey questionnaire. Additionally, collinearity diagnostics using linear regression were performed in SPSS to calculate VIF scores for all the variables, which help to identify the CMV. The VIF scores for all the variables were less than 3.3 (see Appendix H), indicating that the model can be considered free from CMV (Kock 2015, p. 8). Finally, using the SEM technique, the current research used complicated specifications of regression models, which helped to reduce the likelihood of common method variance (Chang, Van Witteloostuijn & Eden 2010, p. 179).

5.2.4. Conclusion to data preparation and screening

Using multiple statistical techniques, this section has sufficiently demonstrated that the data were screened for missing values and multivariate outliers, and that it met the regression assumptions. Table – 6 below presents the means, and standard deviations for the individual items, and the variables for the final sample of 426 respondents:

Table – 6: Descriptive statistics for the sample:

Item	Mean	Standard Deviation
A1	4.22	0.93
A2	4.07	0.90
A3	3.98	0.94
Attitude	4.09	0.79
SN1	3.39	1.00
SN2	3.81	1.03
SN3	3.63	1.05
Subjective Norms	3.61	0.79
PBC1	3.69	0.99
PBC2	3.05	1.13
PBC3	2.98	1.20
Perceived Behavioural Control	3.24	0.83
PCE1	3.85	1.04
PCE2	4.04	0.98
PCE3	3.77	0.92
Perceived Consumer Effectiveness	3.89	0.80
PP1	3.59	0.98
PP2	3.11	1.06

PP3	3.16	1.03
Perceived Price	3.29	0.81
PQ1	3.44	0.96
PQ2	3.45	0.95
PQ3	3.52	0.95
Perceived Quality	3.47	0.76
PI1	4.10	0.93
PI2	3.65	1.01
P13	3.66	0.96
Purchase Intentions	3.80	0.75
R1	3.66	0.97
R2	4.25	0.99
R3	4.06	1.03
Religiosity	3.99	0.76
PB1	2.25	0.82
PB2	2.58	1.33
PB3	2.38	1.05
Actual Purchase Behaviour	2.41	0.91

5.3. Validity and Reliability

It is important to assess the construct validity and reliability of the data before conducting further analysis for hypothesis testing. This study assessed validity using average variance extracted (AVE) and maximum shared variance (MSV) measures and factor loadings obtained through confirmatory factor analysis (CFA), while reliability was assessed using Cronbach's alpha (α) and composite reliability (CR) scores. Table 7 lists the α scores of the variables and the factor loadings for the items in the scale.

Table 7: Cronbach's alpha and factor loadings for the scale

Scale items	Factor loadings
Attitude 1	0.85
Attitude 2	0.83
Attitude 3	0.67
Attitudes	$\alpha = 0.82$
Perceived behavioural control 1	0.39 (item deleted)
Perceived behavioural control 2	0.81
Perceived behavioural control 3	0.62
Perceived behavioural control (PBC)	$\alpha = 0.70$

Scale items	Factor loadings
Perceived consumer effectiveness 1	0.70
Perceived consumer effectiveness 2	0.76
Perceived consumer effectiveness 3	0.64
Perceived consumer effectiveness (PCE)	$\alpha = 0.74$
Perceived price 1	0.34 (item deleted)
Perceived price 2	0.83
Perceived price 3	0.88
Perceived price (PP)	$\alpha = 0.85$
Perceived quality 1	0.62
Perceived quality 2	0.64
Perceived quality 3	0.75
Perceived quality (PQ)	$\alpha = 0.70$
Green Purchase Intentions 1	0.69
Green Purchase Intentions 2	0.61
Green Purchase Intentions 3	0.60
Green purchase intentions (GPIs)	$\alpha = 0.67$
Subjective norms 1	0.57
Subjective norms 2	0.69
Subjective norms 3	0.63
Subjective norms (SNs)	$\alpha = 0.66$
Religiosity 1	0.39 (item deleted)
Religiosity 2	0.89
Religiosity 3	0.66
Religiosity (Rel)	$\alpha = 0.75$
Actual green purchases 1	0.79
Actual green purchases 2	0.68
Actual green purchases 3	0.82
Actual Green Purchases (AGPs)	$\alpha = 0.78$

Following the guidelines of Hair (1995, p. 641), three items (i.e., Religiosity1, Purchase Price1 and Perceived Behavioural Control 1 in Table 7) were removed, as they were found to adversely affect the validity and reliability, as identified by their factor loadings and α scores (see Appendix I for a diagrammatic representation of the initial CFA, depicting the factor loadings of

the original scale). The revised scale obtained after the item deletions met the criteria for scale validity with factor loadings of ≥ 0.6 (Kline 2004, p. 178) except for SN1, which was only marginally low at 0.57 but was acceptable for a large sample ($N \geq 150$) (Hair 1995, p. 385). Similarly, the revised scale met the requirements for scale reliability with $\alpha \geq 0.7$ (Hair 1995, p. 641; Kline 2004, p. 59) except for SNs (0.66) and purchase intentions (0.67), which were only marginally low. Researchers such as Hinton et al. (2004, p. 363) consider $\alpha \geq 0.6$ as sufficient, especially for a scale with three or fewer items (Netemeyer, Bearden & Sharma 2003, p. 58). However, to fulfil the requirements of rigour, and as recommended by Pallant (2013, p. 23), it is advisable to study the mean inter-item correlations for the items when there are fewer than 10 items in the scale. Similarly, Briggs and Cheek (1986) suggest addressing this issue by studying the corrected item-total correlation. Therefore, the current research incorporated both the suggestions by observing the mean inter-item correlations, corrected item-total correlations and improvement in Cronbach's alpha (if item deleted) were obtained (see Table 8 and Table 9).

Table 8: Mean inter-item correlations for subjective norms

	Mean inter-item correlation			Corrected item-total correlation	Cronbach's alpha if item deleted
	SN1	SN2	SN3		
SN1	1.000			.464	.580
SN2	.399	1.000		.486	.551
SN3	.380	.408	1.000	.472	.570

Note: SN = Subjective norm; inter-item correlations are presented below the diagonal.

Table 9: Mean inter-item correlations for green purchase intentions

	Mean inter-item correlation			Corrected item-total correlation	Cronbach's alpha if item deleted
	GPI1	GPI2	GPI3		
GPI1	1.000			.461	.606
GPI2	.424	1.000		.522	.524
GPI3	.355	.435	1.000	.470	.595

Note: GPI = Green purchase intention; inter-item correlations are presented below the diagonal.

In line with the guidelines of Briggs and Cheek (1986), the mean inter-item correlation values meet the satisfactory threshold of 0.2 to 0.4. Similarly, the corrected item-total correlation also meets the recommended threshold of 0.30 to 0.70 (Ferketich 1991). Therefore, Cronbach's alphas for SNs and purchase intentions are deemed satisfactory for further analysis.

In addition to Cronbach's alpha (Cronbach 1951) and factor loadings, further measures (CR, AVE, MSV and square roots of AVE) were also obtained to establish validity and reliability. Based on the results and following the guidelines of Hair (1995, p. 641), two items (i.e., GPI1 and PCE3) were found to be adversely affecting the reliability and validity of the extended TPB model and were removed. The items for SNs (i.e., SN1, SN2 and SN3) continued to demonstrate issues in terms of validity and reliability ($\alpha = 0.66$, CR = 0.66 and AVE = 0.40), which indicated possible issues with its compatibility and relevance in the current study setting (i.e., on Pakistani consumers). To confirm this, SNs were deleted from the measurement model for the extended TPB, and the resulting model demonstrated superior validity and reliability, where all the variables also met the minimum acceptable thresholds for reliability and validity (see Table 10). Similar issues involving SNs were also identified by Hummel et al. (2018), who compared the construct and predictive validities of three different instruments based on the TPB to measure intentions using SEM and found SNs to be the only variable across the three different scales to be uncorrelated to intentions. Similarly, a meta-analysis with the objective to test the predictive validity of the TPB found SNs to be the weakest link, as it was typically found to have the least effect on the prediction of intentions (Hagger, Chatzisarantis & Biddle 2002a).

Nevertheless, to satisfy the requirements of rigour, i.e., the items are not being only for statistical reasons to achieve a better model fit, the measurement and structural models for the original TPB model i.e., prior to item deletion comprising of attitudes, PBC and SNs were set up to ascertain the role of Pakistani consumers' SNs in shaping their GPIs. The resulting measurement

model demonstrated adequate validity and reliability. Similarly, the resulting structural model also satisfied the goodness-of-fit requirements (see Appendix K for the results of the structural model of the original TPB framework) which establishes that the items were not deleted to achieve better model fit. The model also found that attitudes ($\beta = 0.52^{***}$) and PBC ($\beta = 0.17^{**}$) positively and significantly influence Pakistani consumers' GPIs. However, SNs ($\beta = 0.02$) were not found to significantly influence Pakistani consumers' GPIs (see Appendix K). A possible explanation is the relevance of SNs to the context of Pakistani green consumption Ali, Ullah, et al. (2019). Furthermore, item deletion under these circumstances is also consistent with the recommendation of Hair (1995, p. 641). Therefore, owing to the issues of validity and reliability, and a lack of significant influence on GPIs, as identified through the structural model of the original TPB, SNs were not included in the extended TPB model. Nevertheless, this issue will be acknowledged in the limitations of the research (see Section 6.6), and recommendations will be made to conduct further research to confirm the findings of this study (see Section 6.7).

Table 10 lists the CR, AVE, MSV and square roots of AVE (reported in bold in the diagonal) for the final model.

Table 10. CR, AVE, MSV and square roots of AVE

	CR	AVE	MSV	01	02	03	03	04	05	06	07
01 PCE	0.72	0.56	0.39	0.75							
02 Att	0.83	0.62	0.37	0.61 ^{***}	0.79						
03 AGP	0.81	0.59	0.20	0.15 [*]	0.19 ^{**}	0.77					
04 Price	0.85	0.75	0.22	0.071	0.13 [*]	0.19 ^{**}	0.86				
05 Qual	0.67	0.51	0.25	0.43 ^{***}	0.39 ^{***}	0.26 ^{***}	0.30 ^{***}	0.71			
06 Rel	0.77	0.64	0.21	0.46 ^{***}	0.43 ^{***}	0.10†	0.10†	0.19 ^{**}	0.80		
07 PBC	0.70	0.54	0.22	0.11	0.13 [*]	0.44 ^{***}	0.46 ^{***}	0.31 ^{***}	−0.05	0.74	
08 GPI	0.61	0.44	0.39	0.63	0.56	0.34	0.22	0.50	0.45	0.24	0.66

Note: PCE = Perceived consumer effectiveness; Att = Attitude; AGP = Actual green purchases; Price = Perceived price; Qual = Perceived quality; Rel = Religiosity; PBC = Perceived behavioural control; GPI = Green purchase intentions; Significance of correlations: † $p < 0.100$, * $p < 0.050$, ** $p < 0.010$, *** $p < 0.001$.

CR is a measure of internal consistency (Netemeyer, Bearden & Sharma 2003), and a CR of ≥ 0.6 is considered adequate (Awang 2012, p. 63; Bagozzi & Yi 1988, p. 80), especially in the context of TPB-based research (Muzaffar 2015; Teo & Zhou 2014; Wong, Chung & Huang 2010). Further, AVE is a measure for assessing both convergent validity and construct reliability (internal consistency) (Netemeyer, Bearden & Sharma 2003, pp. 153-154). AVE scores for all the variables except intentions (AVE = 0.44) are above the acceptable threshold of 0.5 (Fornell & Larcker 1981). However, AVE is considered a conservative estimate, and AVE scores below 0.50 are acceptable when CR scores are adequate (Fornell & Larcker 1981, p. 46). To quote Fornell and Larcker (1981, p. 46), 'AVE is a more conservative measure than CR. On the basis of CR alone, the researcher may conclude that the convergent validity of the construct is adequate'.

Similarly, the square root of AVE for all the variables is greater than the inter-construct correlations, which establishes discriminant validity (Netemeyer, Bearden & Sharma 2003, p. 120). Finally, the AVE scores for all the variables are greater than MSV, which also establishes convergent validity (AVE > MSV) (Hair et al. 1998).

Since certain items have been deleted from the original scale to refine the study model, as recommended by Gefen, Rigdon and Straub (2011, p. ix), the model fit indices of the CFA model, pre- and post-item deletion, for the extended TPB were compared. A comparison of the model indices for the initial and revised measurement models indicates only slight variations (see Tables 11, and 12). Further, the model fit for the extended TPB was established comfortably and without having to add any covariance paths between error terms. This further confirms that item deletion had not compromised the content validity of the scale through over-fitting (Gefen, Rigdon & Straub 2011, p. ix). Further, similar studies focused on predicting intentions based on the TPB and using SEM were able to contribute significant findings using less than three items (De Bruijn et al. 2007; Hagger, Chatzisarantis & Biddle 2002b; Kothe, Mullan & Butow 2012; Muzaffar 2015; Zhou, Romero & Qin 2016). Therefore, based on the above discussion, it can

be concluded that the data meet the requirements of validity and reliability, and hence, the measurement model can now be established.

5.4. Structural Equation Modelling

The current research uses SEM for data analysis to test the hypotheses. The SEM technique is a two-step process that involves establishing the measurement model, followed by the structural model. The current research uses SEM because of its superiority over similar multivariate analysis techniques such as multiple regression, discriminant analysis and other similar methods. The common limitation of all these methods is that they can examine only a single dependent variable at a time (Schumacker & Lomax 2010, p. 3). However, the current research deals with multiple dependent variables—for example, the effect of religiosity on multiple dependent variables such as attitudes, PCE and intentions. Further, the research also considers the mediated effect of religiosity on GPIs through PCE, and attitudes. Since SEM can examine a series of dependent relationships simultaneously, it allows this research to examine all the research questions using a single comprehensive model.

The second major advantage of SEM is its ability to account for measurement errors, compared with alternative regression-based methods, which are incapable of either assessing or correcting measurement errors. Hence, SEM improves statistical estimation by considering the error variance parameters when reporting the regression coefficients (Byrne 2013, p. 3; Hair 1995, p. 617).

Further, SEM has been successfully used in many areas of research, including marketing, demography, sociology, biology, management, education, organisational behaviour and even genetics (Hair 1995, p. 617). SEM is growing in popularity among green consumer researchers because it can be used to answer multiple interconnected questions, provide improved estimations by accounting for measurement error, and compare latent and observed variables using a single model (Bloise et al. 2020; Chen et al. 2020; Tong et al. 2020). Similarly, SEM has been successfully used to test models

based on the TPB (Guerin et al. 2018; Guo et al. 2019; Zhou, Romero & Qin 2016). Therefore, the current research uses SEM due to its ability to answer multiple interconnected research questions with superior statistical accuracy.

The SEM for the current research constitutes the measurement model, followed by the structural model. The measurement model represents the theory and specifies how measured variables come together to represent latent factors (Hu & Bentler 1999, p. 114). This is followed by the structural model, which represents the theory specifying how constructs are related to other constructs in the model (Hu & Bentler 1999, p. 114).

5.4.1. Measurement model

The measurement model specifies the indicators for each construct while depicting the links between the latent variables and their observed measures. It then assesses the reliability of each construct for estimating the causal relationships (Byrne 2013, p. 13; Hair 1995, p. 620). The issue of the deletion of items adversely affecting the validity based on the CFA (identified through low factor loadings) has already been discussed in Section 5.3.

Figure 14 below shows the measurement model based on the revised CFA for the extended TPB, which specifies the indicators for each variable, accounts for error variance in the measurement of each indicator and specifies the pattern by which each measure loads on a variable:

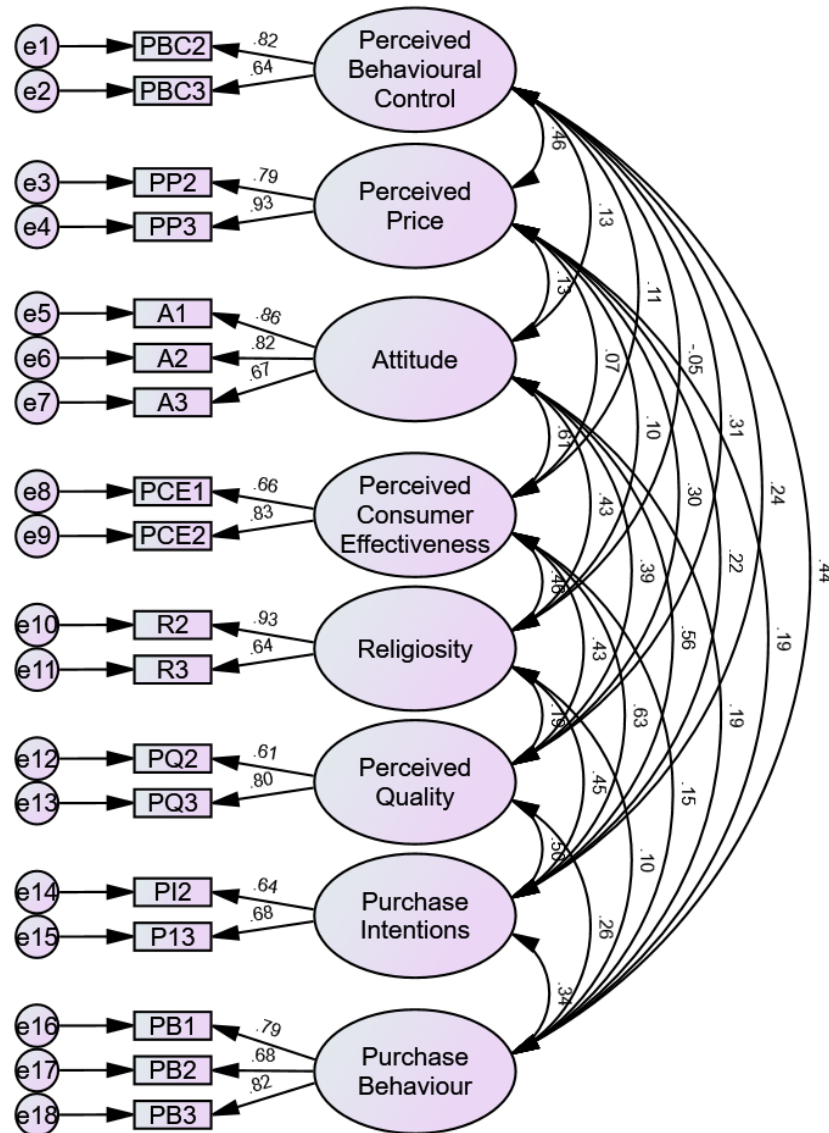


Figure 13: Measurement model for the extended Theory of Planned Behaviour

Note: Squares represent the scale items, circles represent the error terms for the items (e1 to e18), and ellipses represent the variables. Values on the arrows from ellipses to squares represent factor loadings, and values on the double-headed arrows between variables represent inter-construct correlations. Purchase Intentions = Green Purchase Intentions, Purchase Behaviour = Actual Green Purchases

After setting up the measurement model for the study, the next step is to assess it for goodness of fit.

5.4.2. Assessing the model fit of the measurement model

The most critical test for any sound hypothesised model based on SEM is the extent to which it adequately describes the sample data, and this is often referred to as model fit. Therefore, having obtained the parameter estimates for the measurement model, the next step is to determine how well the data fit the model. One of the strengths of SEM is its ability to allow for the evaluation of model fit based on a variety of criteria that assesses model fit from a diversity of perspectives. Table 11 lists the model fit assessment criteria, along with acceptable thresholds. Further, it compares the initial CFA and the revised CFA (after item deletion) based on the acceptable thresholds for each criterion. Following discussion highlights the strengths of some of the most widely used parameters for assessing model fit to be used in this research for both measurement, and structural models:

5.4.2.1 Ratio of Chi-Square to Degree of Freedom

Use of Chi-square is one of the most widely used approach to hypothesis testing. However, instead of solely relying on Chi-Square (χ^2) as a measure of an acceptable fit between the hypothetical model and the sample data, Wheaton et al. (1977) suggest the use of relative chi-square ($\chi^2/\text{degrees of freedom}$). This addresses the limitation of Chi-Square which is sensitive to sample size because as sample size increases, the Chi-Square statistic has a tendency to indicate a significant probability level. This ratio is represented as the CMIN/DF in AMOS output which is the minimum discrepancy, divided by its degrees of freedom. Researchers suggest that a $1 < \chi^2/df < 3$ indicates a good fit (Browne & Cudeck 1993; Hu & Bentler 1999).

5.4.2.2 Standardised Root Mean Square Residual (SRMR)

The root mean square residual (RMR) is a measure of the average residual value derived from the fitting of the variance–covariance matrix for the hypothesized model when compared to the same for the sample data (Hu & Bentler 1999). However, being relative to the sizes of the observed variances and covariances, makes its interpretation complicated (Hu & Bentler 1995; Joreskog & Sorbom 1989). Therefore, researchers recommend the use of the standardized RMR, which represents the average value across all standardized residuals with $SRMR < 0.05$ indicating good fit (Hu & Bentler 1999; Joreskog & Sorbom 1989).

5.4.2.3 Goodness-of-Fit Index (GFI) and Adjusted Goodness-of-Fit Index (AGFI):

The GFI measures the relative amount of variance and covariance in sample while the AGFI adjusts the GFI for the number of degrees of freedom in the specified model. AGFI also deals with the problem of parsimony by including a penalty for the additional parameters. Since the GFI and AGFI compare the hypothesized model with no model at all, therefore they are categorized as absolute indices of fit with values close to 1.00 being indicative of good fit (Steiger 1980).

5.4.2.4 Parsimony Goodness-of-Fit Index (PGFI)

Introduced by James, Mulaik and Brett (1982) PGFI considers the complexity of the model by considering the number of estimated parameters used in the hypothesized model to assess overall model fit with $PGFI > 0.5$ indicating a good fit (Hu & Bentler 1999; Pallant 2013).

5.4.2.5 Comparative Fit Index (CFI)

Proposed by Hu and Bentler (1999) the CFI is an outcome of the comparison of a hypothesized model with the null model. It provides a measure of complete covariation in the data with $CFI > 0.95$ indicating good fit (Hu & Bentler 1999; Joreskog & Sorbom 1989).

5.4.2.6 Tucker-Lewis Index (TLI)

TLI, developed by Tucker and Lewis (1973), has the ability to compare alternative models or to compare a hypothesized model against a null model. It also imposes a penalty for additional parameters with $TLI > 0.95$ indicating good fit (Hu & Bentler 1999; Joreskog & Sorbom 1989).

5.4.2.7 Root mean square error of approximation (RMSEA)

Initially proposed by Ferketich (1991) and refined by Hinton et al. (2004, pp. 137-138) RMSEA is recognized as one of the most informative standards for evaluating model fit in covariance-based structure modelling Hu and Bentler (1999, p. 194). While taking into consideration the error of approximation in the population, RMSEA seeks to identify “How well would the model, with unknown but optimally chosen parameter values, fit the population covariance matrix if it were available?” (Hinton et al. 2004, pp. 137–138). Since it is expressed per degree of freedom, it compensates for the effect of model complexity. Researchers suggest that $RMSEA < 0.05$ indicates good fit (Hu & Bentler 1999, p. 194)

RMSEA becomes a very useful tool when assessed in sync with the confidence interval and closeness of fit. AMOS reports the RMSEA value with a 90% confidence interval to evaluate its precision which provides further assistance in assessment of model fit. Similarly, the “closeness of fit” reported

by AMOS as PCLOSE, tests the hypothesis that the RMSEA is “good” in the population (i.e. $< .05$). Researchers consider $PCLOSE > 0.05$ to be good for this test Hu and Bentler (1999, p. 81).

Based on the above discussion, Table – 7 below summarizes the model fit assessment criteria, and compares the extended TPB based on the acceptable thresholds for each criterion:

Table 11: Model fit statistics of the measurement model for the initial CFA (pre-item deletion)

Parameter	Threshold	Initial CFA	Literature support
ChiSq/DF	$1 < \text{ChiSq/D}$ $F > 3$	2.22	Byrne (2013, p. 77); Carmines (1981)
SRMR	< 0.08	0.07	Schumacker and Lomax (2010, p. 154); Byrne (2013, p. 194)
GFI	> 0.90	0.90	Schumacker and Lomax (2010, p. 76)
AGFI	> 0.90	0.87	Schumacker and Lomax (2010, p. 76)
PGFI	> 0.5	0.68	Byrne (2013, p. 78) Mulaik et al. (1989)
CFI	> 0.95	0.90	Byrne (2013, p. 78); Hu and Bentler (1999)
TLI	> 0.95	0.89	Schumacker and Lomax (2010, p. 76)
RMSEA	< 0.06	0.05	Schumacker and Lomax (2010, p. 76); Byrne (2013, p. 80)
PCLOSE	> 0.05	0.14	Byrne (2013, p. 81)

Note: ChiSq/DF = Chi-square/degree of freedom; SRMR = Standardised root mean square; GFI = Goodness-of-fit index; AGFI = Adjusted goodness-of-fit index; PGFI = Parsimony goodness-of-fit index; CFI = Comparative fit index; TLI = Tucker–Lewis index; RMSEA = Root-mean-square error of approximation; PCLOSE = Closeness of fit.

Table 12: Model fit statistics of the measurement model for the revised CFA model (Post item deletion)

Parameter	Threshold	CFA (Revised model)	Literature support
ChiSq/DF	1 < ChiSq/DF > 3	1.62	Byrne (2013, p. 77); Carmines (1981)
SRMR	< 0.08	0.04	Schumacker and Lomax (2010, p. 154); Byrne (2013, p. 194)
GFI	> 0.90	0.96	Schumacker and Lomax (2010, p. 76)
AGFI	> 0.90	0.93	Schumacker and Lomax (2010, p. 76)
PGFI	> 0.5	0.60	Byrne (2013, p. 78) Mulaik et al. (1989)
CFI	> 0.95	0.97	Byrne (2013, p. 78); Hu and Bentler (1999)
TLI	> 0.95	0.96	Schumacker and Lomax (2010, p. 76)
RMSEA	< 0.06	0.04	Schumacker and Lomax (2010, p. 76); Byrne (2013, p. 80)
PCLOSE	> 0.05	0.97	Byrne (2013, p. 81)

Note: ChiSq/DF = Chi-square/degree of freedom; SRMR = Standardised root mean square; GFI = Goodness-of-fit index; AGFI = Adjusted goodness-of-fit index; PGFI = Parsimony goodness-of-fit index; CFI = Comparative fit index; TLI = Tucker–Lewis index; RMSEA = Root-mean-square error of approximation; PCLOSE = Closeness of fit.

Table 12 indicates that an adequate model fit has been achieved. Similarly, the comparison of the model fit statistics for the CFA (pre- and post-item deletion) showed no significant changes, which indicates that item deletion had not compromised the content validity of the scale through over-fitting (Gefen, Rigdon & Straub 2011, p. ix).

5.4.3. Structural model

Once the measurement model has been established, the next step is to create the structural model. The structural model defines relations among the unobserved endogenous and observed exogenous variables. It specifies how particular latent variables directly or indirectly influence changes in the values of certain latent variables in the model (Byrne 2013, p. 13).

Figure below 15 depicts the path diagram that diagrammatically represents the relationships between the endogenous and exogenous variables in the extended TPB.

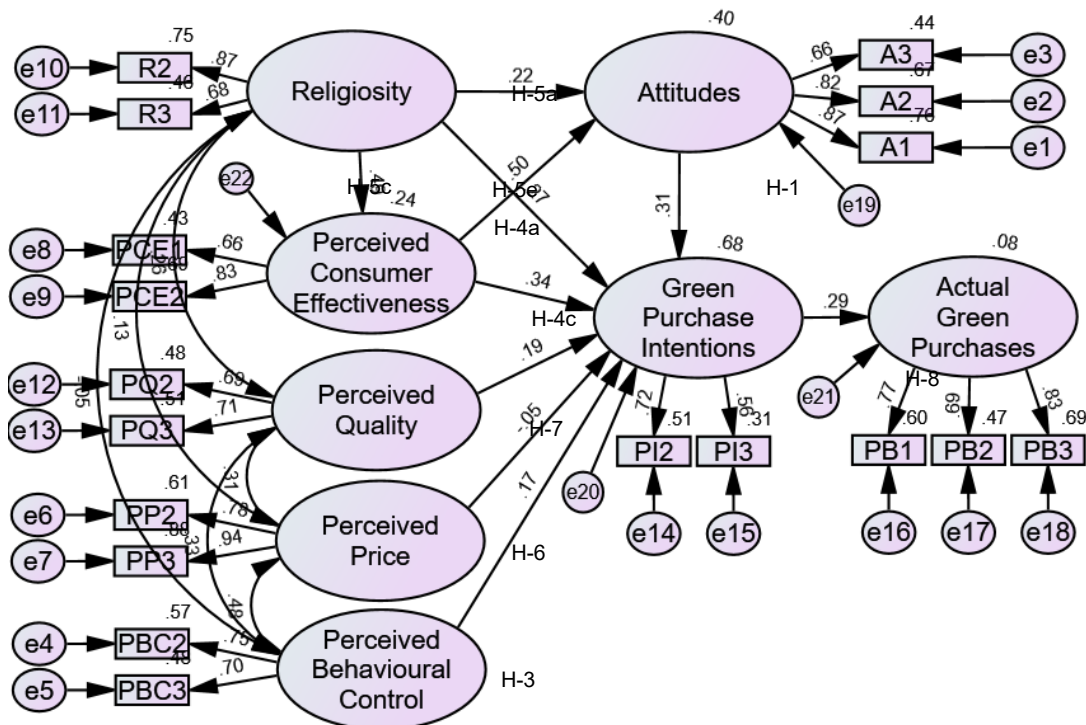


Figure 14: Structural model for the extended Theory of Planned Behaviour

Note: Squares represent the items; circles represent the error terms for the items, and the variables; ellipses represent the variables; values on the single-headed arrows from one variable to another represent the standardised beta; values on the single-headed arrows from ellipses to squares represent factor loadings; values on the double-headed arrows between variables represent inter-construct correlations; H1 to H8 represent the hypothesised relationships as per the conceptual model.

5.4.4. Assessing the model fit of the structural model

The final step in the SEM process involves assessing the structural model for goodness of fit. Based on the criteria for assessing model fit explained earlier in Section 5.4.2, Table 13 compares the model fit statistics of the extended TPB model against the set criteria.

Table 13: Model fit statistics of the structural model for the extended Theory of Planned Behaviour

Parameter	Threshold	Extended TPB	Literature support
ChiSq/DF	1 < > 3	2.20	Byrne (2013, p. 77); Carmines (1981)
SRMR	< 0.08	0.07	Schumacker and Lomax (2010, p. 154); Byrne (2013, p. 194)
GFI	> 0.90	0.94	Schumacker and Lomax (2010, p. 76)
AGFI	> 0.90	0.91	Schumacker and Lomax (2010, p. 76)
PGFI	> 0.5	0.65	Byrne (2013, p. 78); Mulaik et al. (1989)
CFI	> 0.95	0.95	Byrne (2013, p. 78); Hu and Bentler (1999)
TLI	> 0.95	0.93	Schumacker and Lomax (2010, p. 76)
RMSEA	< 0.06	0.05	Schumacker and Lomax (2010, p. 76); Byrne (2013, p. 80)
PCLOSE	> 0.05	0.27	Byrne (2013, p. 81)

Table 13 indicates that the extended TPB meets all the model fit criteria, except the Tucker–Lewis Index, and is considered acceptable.

5.5. Hypothesis Testing

Once model fit for the structural model has been established, the ultimate objective of testing the hypotheses based on the structural model can be pursued. This section presents the results of the hypothesis testing based on the direct and indirect relationships among the variables.

Table 14 presents the results of the tests for the significance of the direct relationships between the predictor variables and the predicted variables.

Table 14: Results of the path analysis for the direct relationships

Path	Std β	<i>t</i> -value	<i>p</i>
Rel → PCE	0.49	6.37	0.001
PCE → Att	0.50	6.87	0.001
Att → GPIs	0.31	3.88	0.002
PBC → GPIs	0.17	2.19	0.030
SNs → GPIs	0.02	0.20	0.840
Price → GPIs	−0.05	−0.81	0.420
Qual → GPIs	0.19	2.51	0.010
GPIs → AGP	0.29	4.53	0.001
R ² (Intentions)	0.68		

Note: PCE = Perceived consumer effectiveness; Att = Attitude; AGP = Actual green purchases; Qual = Perceived quality; Rel = Religiosity; PBC = Perceived behavioural control; GPIs = Green purchase intentions. Results for SNs are reported based on the original TPB model.

Table 15 presents the results of the tests for the significance of the mediating relationships between the predictor variables and the predicted variables. Following the recommendations of Zhao, Lynch Jr and Chen (2010), 95% bias-corrected bootstrap confidence intervals (CIs) involving 2,000 bootstrap samples were employed to test the significance of the indirect effects of the mediating variables.

Table 15: Results of the mediation analysis

	Indirect effect	CIs 95%	<i>t</i> -value	<i>p</i>	Direct effect	<i>t</i> -value	<i>p</i>	Total effect	<i>t</i> -value	<i>p</i>
Rel→PC	0.24	0.157/0.369	4.44	0.001	0.22	2.75	0.008	0.47	5.80	0.001
E→Att										
PCE→Att	0.15	0.064/0.266	2.94	0.003	0.34	3.80	0.001	0.49	4.80	0.001
→GPI										
Rel→Att	0.31	0.182/0.471	4.31	0.001	0.27	3.34	0.016	0.58	6.74	0.001
→GPI										

Note: PCE = Perceived consumer effectiveness; Att = Attitude; AGP = Actual green purchases; Qual = Perceived quality; Rel = Religiosity; PBC = Perceived behavioural control; GPIs = Green purchase intentions.

5.5.1. Attitudes (Hypothesis 1)

The results of the hypothesis testing for the relationship between attitudes and GPIs produced a beta weight (β) of 0.31 ($t = 3.88$, $p < 0.05$), indicating a positive and significant relationship. Therefore, H1 is supported.

5.5.2. Subjective norms (Hypothesis 2)

The results of the hypothesis testing for the effect of SNs on GPIs based on the original TPB model produced a beta weight (β) of 0.02 ($t = 0.20$, $p > 0.05$), indicating a non-significant relationship. Therefore, H2 is not supported. This result will be further discussed in Section 6.2.5 in light of earlier research concerning consumers' GPIs.

5.5.3. Perceived behavioural control (Hypothesis 3)

The results of the hypothesis testing for the relationship between PBC and GPIs produced a beta weight (β) of 0.17 ($t = 2.19$, $p < 0.05$), indicating a positive and significant relationship. Therefore, H3 is supported.

5.5.4. Perceived consumer effectiveness (Hypotheses 4a–4c)

The results of the hypothesis testing for the relationship between PCE and attitudes (see Table 14) produced a beta weight (β) of 0.50 ($t = 6.87$, $p < 0.05$), indicating a positive and significant relationship. Therefore, H4a is supported. Further, the result of the analysis of the mediating effect of attitudes on the impact of PCE on GPIs is shown in Table 15. The total effect of PCE on GPIs was found to be $\beta = 0.49$, and the direct effect after controlling for the mediator was $\beta = 0.34$. To determine the significance of the mediation, 95% bias-corrected bootstrap CIs from 2,000 bootstrap samples (Hayes 2013) were used, with mediation being statistically significant when the CI did not include zero. The mediating effect of attitude on the impact of PCE on intentions was found to be statistically significant (CI = 0.064/0.266). Therefore, H4b is supported.

Finally, the results of the hypothesis testing for the relationship between PCE and GPIs (see Table 14) produced a beta weight (β) of 0.34 ($t = 3.80$, $p < 0.05$), indicating a positive and significant relationship. Therefore, H4c is supported.

5.5.5. Religiosity (Hypotheses 5a–5e)

The results of the hypothesis testing for the relationship between religiosity and attitudes (see Table 14) produced a beta weight (β) of 0.22 ($t = 2.75$, $p < 0.05$), indicating a positive and significant relationship. Therefore, H5a is supported.

Further, the result of the analysis of the mediating effect of attitudes on the impact of religiosity on GPIs is shown in Table 15. The total effect of religiosity on GPIs was found to be $\beta = 0.58$, and the direct effect after controlling for the mediator was $\beta = 0.27$. To determine the significance of the mediation, 95% bias-corrected bootstrap CIs from 2,000 bootstrap samples (Hayes 2013) were used, with mediation being statistically significant when the CI did not include zero. The mediating effect of attitude on the impact of religiosity on intentions was found to be statistically significant (CI = 0.182/0.471). Therefore, H5b is supported.

The results of the hypothesis testing for the relationship between religiosity and PCE (see Table 14) produced a beta weight (β) of 0.49 ($t = 6.37$, $p < 0.05$), indicating a positive and significant relationship. Therefore, H5c is also supported.

The result of the analysis of the mediating effect of PCE on the impact of religiosity on attitudes is shown in Table 15. The total effect of religiosity on attitudes was found to be $\beta = 0.47$, and the direct effect after controlling for the mediator was $\beta = 0.22$. To determine the significance of the mediation, 95% bias-corrected bootstrap CIs from 2,000 bootstrap samples (Hayes 2013) were used, with mediation being statistically significant when the CI did not include zero. The mediating effect of PCE on the impact of religiosity on intentions was found to be statistically significant (CI = 0.157/0.369). Therefore, H5d is supported.

Finally, the results of the hypothesis testing for the relationship between religiosity and GPIs (see Table 14) produced a beta weight (β) of 0.27 ($t = 3.34, p < 0.05$), indicating a positive and significant relationship. Therefore, H5e is supported.

5.5.6. Perceived price (Hypothesis 6)

The results of the hypothesis testing for the relationship between price and GPIs (see Table 14) produced a beta weight (β) of -0.05 ($t = -0.81, p > 0.05$), indicating a non-significant relationship. Therefore, H6 is not supported. This result will be further discussed in Section 6.2.4.

5.5.7. Perceived quality (Hypothesis 7)

The results of the hypothesis testing for the relationship between perceived quality and GPIs (see Table 14) produced a beta weight (β) of 0.19 ($t = 2.51, p < 0.05$), indicating a positive and significant relationship. This shows that Pakistani consumers' perceptions of green product quality are an important contributor towards their intentions to purchase green products. Therefore, H7 is supported.

5.5.8. Green purchase intentions (Hypothesis 8)

The results of the hypothesis testing for the relationship between GPIs and AGPs (see Table 14) produced a beta weight (β) of 0.29 ($t = 4.53, p < 0.05$), indicating a positive and significant relationship. This indicates that Pakistani consumers' GPIs are a positive and significant predictor of their actual purchase behaviour. Therefore, H8 is supported.

5.6. Demographic Trends Through the Analysis of Variance

In this section, the results of between-groups ANOVA analyses will be discussed to investigate the individual and joint effects of demographic characteristics on purchase intentions. Table 16 presents the sample

characteristics of the three demographic variables (i.e., gender, education and age).

Table 16: Sample characteristics

	%	N
<i>Gender</i>		
Male	58.0	249
Female	41.0	175
Other	0.01	2.0
<i>Education</i>		
College or lower	4.5	19
Bachelor's	67.0	287
Master's or higher	28.1	120
<i>Age</i>		
30 years or less	72.0	307
31 to 40 years	20.5	87
41 years or more	7.5	32

Table 16 shows that the sample is reasonably and diversely distributed across different categories according to age, gender and education. The data were collected through mall intercept surveys; hence, there was no sure way to ensure equal representation of all the demographic categories. Nevertheless, the male (59%) to female (41%) representation was comparable to similar studies conducted in Pakistan addressing the issue of green consumption (Al-Swidi et al. 2014; Ali, Danish, et al. 2019; Ali, Ullah, et al. 2019; Hameed, Waris & ul Haq 2019; Moon, Mohel & Farooq 2019).

In terms of education, there were only 19 respondents with college-level education or lower. Since college is equivalent to 12 years of education, and with the trend of early school enrolments at age three in Pakistan, most teenagers are now finishing year 12 when they are less than 18 years of age. However, as per the guidelines of ethical conduct, the researcher could only invite individuals to participate in the survey after verbally confirming that they were 18 years old or above. Further, as mentioned in Section 1.8, which discusses the use of English as the language of the survey questionnaire, individuals who had not attended at least Grade 10 were likely to be excluded,

as they only have a limited ability to read and respond to a survey in English. Therefore, the researcher was able to intercept only a small number of individuals who had qualifications at the 'college or lower' level (i.e., lower than the bachelor's degree level), were not minors (i.e., they were 18 years or older), were able to read and understand English, and most importantly, were also willing to participate in the survey.

Finally, the relatively high representation of individuals who at least had a bachelor's level of education is explained by the complicated National Qualifications Framework of Pakistan,¹ which classifies all post-college (i.e., after 12 years of schooling) qualifications involving either two, three or four years as equivalent to a bachelor's degree.

An ANOVA requires that there be no missing data nor any category with a very small sample size (Pallant 2013, p. 229). Only two respondents selected 'other' for gender, which created a very small third category; therefore, these two cases were removed from the data. Similarly, there were only 19 respondents (i.e., 4.3%) with an education level of 'college or lower', which created a very small additional category for education. Therefore, this category was collapsed and merged with the education category 'bachelor's or lower, which brought the number of the respondents in the category to 306.

5.6.1. One-way analysis of variance for education

A one-way between-groups ANOVA was conducted to explore the effect of gender, age and education on consumers' GPIs. Participants were divided into two groups according to their level of education (Group 1: Bachelor's level or lower; Group 2: Master's level and above). The value for Leven's statistic (0.151) based on means was not significant ($p = 0.697$), therefore indicating that the homogeneity of variances assumption had not been violated (Pallant 2013, p. 278). The results of the ANOVA found that there was no statistically significant difference among the two education categories based on their purchase intention scores: $F(1, 422) = 2.87$, and $p = 0.091$. Therefore, H9a

¹ <https://www.hec.gov.pk/english/services/universities/pqf/Pages/default.aspx>

(i.e., Pakistani consumers' GPIs differ significantly based on their level of education) is not accepted.

5.6.2. One-way analysis of variance for gender

A one-way between-groups ANOVA was conducted to explore the effect of gender on consumers' GPIs. Participants were divided into two groups according to their gender (Group 1: Male; Group 2: Female). The value for Leven's statistic (0.318) based on means was not significant ($p = 0.573$), therefore indicating that the homogeneity of variances assumption had not been violated (Pallant 2013, p. 278). The results of the ANOVA found that there was a statistically significant difference among the two gender categories based on their purchase intentions scores: $F(1, 422) = 10.6$, and $p = 0.001$, with male respondents ($M = 3.90$, $SD = 0.72$) exhibiting higher levels of GPIs than female respondents ($M = 3.67$, $SD = 0.74$). Therefore, H9b (i.e., Pakistani consumers' GPIs differ significantly based on their gender) is accepted.

5.6.3. One-way analysis of variance for age groups

Since the demographic measure 'age' consists of more than two categories, a one-way ANOVA was used to compare the variance of scores for purchase intentions across different age groups. Respondents were divided into three groups according to their age (Group 1: 30 years or less, $N = 306$; Group 2: 31 to 40 years, $N = 87$; Group 3: 41 years or more, $N = 31$). The value for Leven's statistic (1.12) based on means was not significant ($p = 0.327$), therefore indicating that the homogeneity of variances assumption had not been violated (Pallant 2013, p. 278). The results of the ANOVA found that there was no statistically significant difference among the three age categories based on their purchase intentions scores: $F(2, 420) = 1.022$, and $p = 0.361$. Therefore, H9c is not accepted.

5.7. Chapter Summary

This chapter presented the results of the data analysis using SEM and the ANOVA for hypothesis testing. The chapter began with an explanation of the data preparation, followed by preliminary analyses to satisfy the regression assumptions and the requirements of reliability and validity. Then, the measurement model was established and tested for goodness of fit. Finally, the structural model was created and tested for goodness of fit. This chapter concludes with a summary of the results of the hypothesis testing (see Table 17).

Table 17: Summary of the results of hypothesis testing

	Hypothesis	Finding
<i>Attitudes</i>		
H1	Attitudes towards green products have a positive and significant influence on GPIs.	Supported
<i>Subjective norms</i>		
H2	Subjective norms have a positive and significant influence on GPIs.	Not supported
<i>Perceived behavioural control (PBC)</i>		
H3	PBC has a positive and significant influence on GPIs.	Supported
<i>Perceived consumer effectiveness (PCE)</i>		
H4a	PCE has a positive and significant influence on attitudes towards green products.	Supported
H4b	Attitudes towards green products significantly mediate the relationship between PCE and GPIs.	Supported
H4c	PCE has a positive and significant influence on GPIs.	Supported
<i>Religiosity</i>		
H5a	Religiosity has a positive and significant influence on attitudes towards green products.	Supported
H5b	Attitudes towards green products significantly mediate the relationship between religiosity and GPIs.	Supported
H5c	Religiosity has a positive and significant influence on PCE.	Supported
H5d	PCE significantly mediates the relationship between religiosity and attitudes.	Supported

H5e	Religiosity has a positive and significant influence on GPs.	Supported
<i>Perceived price</i>		
H6	Perceived price has a negative and significant influence on GPs.	Not supported
<i>Perceived quality</i>		
H7	Perceived quality has a positive and significant influence on GPs.	Supported
<i>Green purchase intentions (GPIs)</i>		
H8	GPIs have a positive and significant influence on AGPs.	Supported
<i>Socio-demographics</i>		
H9a	Pakistani consumers' GPIs differ significantly based on their level of education.	Not supported
H9b	Pakistani consumers' GPIs differ significantly based on their gender.	Supported
H9c	Pakistani consumers' GPIs differ significantly based on their age.	Not supported

Chapter 6. Discussion and Conclusion

6.1. Introduction

This chapter provides a discussion of the results of the data analysis. By extending the TPB, the current research attempted to identify the factors influencing Pakistani consumers' GPIs, and the relationship between intentions and actual purchase behaviour. The following three research questions and two sub-research questions were proposed for the research:

- Research Question 1: *What factors influence Pakistani consumers' GPIs?* This question was designed to identify factors that lead to GPIs. The following two sub-research questions were also offered: (i) Research Question 1a: *To what extent do religiosity and PCE, through their influence on consumers' attitudes, predict the GPIs of Pakistani consumers?* and (ii) Research Question 1b: *To what extent does green perceived value, in terms of quality and price, predict the GPIs of Pakistani consumers?*
- Research Question 2: *Do Pakistani consumers' GPIs lead to AGPs?*
- Research Question 3: *Do Pakistani consumers differ in terms of their GPIs based on personal socio-demographic characteristics?*

To answer the above research questions, this study sought to identify the factors that influenced consumers' GPIs and to examine the nature of the relationship between purchase intentions and actual purchase behaviour. The study set out to identify the direct and indirect effects of multiple predictors of purchase intentions. Further, the study sought to establish if various socio-demographic variables significantly explained the variance in GPIs. Based on the results of the hypothesis testing, this chapter will address the three main and two sub-research questions. Finally, the revised conceptual model is presented, followed by a discussion on the contribution of the study to theory, the implications for practice and policy, the limitations of the study and directions for future research.

6.2. Findings of the Research

Considering the results of the data analysis, this section will discuss the major findings of the current research. It will also compare the findings with those of earlier research.

6.2.1. Religiosity

Religiosity is the degree to which an individual follows (or adheres to) the beliefs and practices propagated by their religion (Waite 2017). The current study hypothesised that religiosity is an important value that positively influences purchase intentions by shaping attitudes and PCE. The results of the hypothesis testing found that religiosity influences Pakistani consumers' attitudes towards green products in a positive and significant manner. This shows that religious individuals have a favourable attitude towards green products. This relationship concurs with the findings by (Singh et al. 2021), Bhuian et al. (2018) and Graafland (2017), who reported that religiosity increases positive attitudes towards green products.

Similarly, this study initially proposed that a positive and significant relationship exists between religiosity and PCE. The results of the data analysis supported this hypothesis, as it found that religiosity had a positive and significant influence on Pakistani consumers' levels of PCE. This relationship had also been identified by other researchers, who found that highly religious individuals have more favourable perceptions regarding the effectiveness of their actions (Hutter et al. 2013; Kang, Liu & Kim 2013; Wesley, Lee & Kim 2012). Although PCE is one of the major contributors to consumers' intentions to purchase green products, no research to date had attempted to explore if religiosity can enhance consumers' perceptions of the effectiveness of their environmental actions. Therefore, this is an important finding in the context of green consumption research, as it can be a stepping stone for future research to further explore how religiosity, through its influence on PCE, can help in the diffusion of green products.

Further, the results of the hypothesis testing found that Pakistani consumers' level of religiosity positively and significantly influences GPIs. Additionally, this

study also proposed that consumers' level of religiosity indirectly affects their purchase intentions towards green products. The results of the data analysis support this hypothesis as religiosity was found to have a significant indirect effect on purchase intentions through its influence on consumers' attitudes. This relationship is supported by Yong et al. (2017) and Kabadayı et al. (2015), who found that religiosity has a positive and significant influence on purchase intentions. The above discussion clearly establishes that religiosity plays an important role in influencing GPIs through its effect on attitudes and PCE. Therefore, religiosity is an important and useful addition to the extended TPB framework.

6.2.2. Attitudes

The current study set out to predict Pakistani consumers' GPIs by extending the TPB to the context of Pakistani consumers. This study proposed that the consumers' attitudes towards green products are fundamental in the development of GPIs. An attitude is a psychological construct, which is shaped by cognition (thought), values (beliefs) and affection (emotions) towards a particular object (Jung 1971). Hence, beliefs (favourable or unfavourable) about an action shape consumers' attitudes towards performing or not performing that action, which, in this case, is the intention to purchase green products. Researchers have consistently found attitudes to be one of the most reliable predictors of intentions (Ajzen & Fishbein 1969; Sánchez et al. 2018; Taufique & Vaithianathan 2018; Zaremohzzabieh et al. 2021). The results of the hypothesis testing found that Pakistani consumers' attitudes towards green products positively and significantly influence GPIs. Additionally, the current study hypothesised that attitudes mediate the effect of religiosity and PCE on GPIs. The results of the hypothesis testing found this to be true, as attitudes were found to mediate the effect of religiosity on purchase intentions. Similarly, attitudes were found to significantly mediate the positive relationship between PCE and purchase intentions. These findings are in line with those of Kang, Liu and Kim (2013) and Morrison (1979), who found that attitudes mediate the positive relationship between PCE and GPIs. The above findings of the current research, when observed in the context of the β scores

for attitudes (see Table 14), establish attitude to be the most influential predictor of purchase intentions along with PCE (see Table 15). These findings are in line with the findings of Al-Swidi et al. (2014) and Muzaffar (2015), who found that attitudes have a positive and significant effect on GPIs. Therefore, based on the findings of the current research, which is supported by the findings of earlier research, a positive attitude towards green products is one of the most critical factors that can result in intention to purchase green products. Hence, it can be concluded that Pakistani consumers' attitudes towards green products play an important role in shaping their purchase intentions of such goods.

6.2.3. Perceived behavioural control

PBC is part of the original TPB framework. PBC refers to the degree of control that an individual perceives over performing a behaviour (Ajzen 1991). Individuals who perceive a higher degree of personal control tend to have stronger behavioural intentions to engage in a certain behaviour (Ajzen 1991). The current study hypothesised that PBC has a positive and significant influence on Pakistani consumers' GPIs. The results of the SEM for the extended TPB model establish that a positive and significant relationship exists between PBC and purchase intentions. This shows that Pakistani consumers are more likely to buy a green product when they are confident that their individual act of purchasing that product will meaningfully contribute to the greater environmental cause. This finding is also in line with prior research (Reichl et al. 2021), including research involving Pakistani consumers' GPIs (Ali, Ullah, et al. 2019; Muzaffar 2015). Therefore, it can be reasonably expected that Pakistani consumers are more likely to purchase green products when they perceive more control over resources such as money, time and skills.

6.2.4. Perceived price

The original TPB model included the effect of PBC, which, among other factors, deals with an individual's buying power. According to (Ajzen 1991), individuals who perceive a higher degree of personal control tend to have a

stronger behavioural intention of engaging in a certain behaviour. For example, an individual may have favourable attitudes towards green products, and their significant others (SNs) view green products favourably, but they still might not end up buying green products due to reasons such as availability, time and purchasing power (Grimmer, Kilburn & Miles 2016). However, as evident from the above discussion, PBC does not consider the specific role of price perceptions, although it is highly likely that consumers with high buying power might still not buy green products if they are perceived as not being good value-for-money purchases.

Since perceptions can be different from reality (Beres 1960), research has shown that consumers' perceptions of price, irrespective of the actual price, can often be biased against green products—that is, the price of green products is perceived as high (Aschemann-Witzel & Zielke 2017; Haws, Reczek & Sample 2016). The results of the SEM established that price perceptions did not significantly influence consumers' purchase intentions ($p > 0.05$). This finding is supported by (Chekima et al. 2015; Grankvist & Biel 2001; Mohd Suki 2016). However, Grimmer and Bingham (2013) found that price perceptions significantly affect consumers' GPIs. The current study has found that price perceptions do not significantly influence Pakistani consumers' intentions to buy green. This is inline with the findings of (Parsa et al. 2015) who found that consumers who understand the environmental implications of products and services may consider going green despite the higher price. Similarly, other researchers have also established that committed environmentalists are more likely to purchase products based on their environmental contributions, with price being less of a factor in the purchase decision (Chekima et al. 2015; Mohd Suki 2016). This translates into the customer's willingness to pay a little more if they know that products are healthier, safer, or better for the environment. Further, several studies have shown that price has a positive role in the purchase process in certain cases, such as in the purchase of prestige products and in scarcity situations (Shewmake & Viscusi 2015; Zhao et al. 2014). Hence, some consumer segments might be willing to pay a higher perceived price if they consider green products as a luxury and use their consumption as a status symbol

(Line & Hanks 2015). Additionally, this finding can also be explained by considering the findings regarding PBC which among other studies affordability of green products and has been found to significantly influence intentions. Therefore, the influential factor here is green product affordability, as measured through PBC, and not their price perceptions.

Nevertheless, as discussed in Appendix A, only a limited number of comparable studies exist concerning the role of price perceptions from the perspective of Pakistani green consumers. Therefore, considering contradictory findings by other researchers such as Grimmer and Bingham (2013), further investigation to reconfirm this finding, especially from the perspective of Pakistani green consumers, would be useful to establish the generalisability of the findings.

6.2.5. Subjective norms

SNs are the third and final variable of the original TPB. SNs refer to the perceived social pressure to perform or not perform a behaviour (Ajzen 1985). The current study hypothesised that there is a positive and significant influence of SNs on GPIs.

As discussed in Section 5.3, owing to the issues of reliability and validity, SNs were removed from the final model of the extended TPB. However, its effect on intentions was still observed using the original TPB model (attitudes, PBC, and SNs). Although the original TPB model found that both attitudes and PBC influence Pakistani consumers' GPIs positively and significantly (see Appendix K), SNs were not found to significantly ($p > 0.05$) influence Pakistani consumers' GPIs (see Appendix K). This is consistent with findings from other researchers who have reported that the intention to buy green products depends more on personal motivations and is less dependent on the influence of relevant others (Botetzagias, Dima & Malesios 2015; Paul, Modi & Patel 2016; Shen et al. 2003). Similarly, a meta-analysis, which was done with the objective of testing the predictive validity of the TPB, found SNs to be the weakest link, as it is typically found to have the least effect on the prediction of intentions (Armitage & Conner 2001). This finding is also in line with the

findings of Ali, Ullah, et al. (2019), who found that SNs do not have a significant influence on Pakistani consumers' GPIs. Nevertheless, this finding has been acknowledged in the limitations of the study, and the future research sections. Due to the limited availability of comparable research findings involving Pakistani consumers, further research is required to establish the replicability of these findings in Pakistan.

6.2.6. Perceived quality

Perceived quality is another variable introduced as part of the extended TPB framework. Perceived quality is the customer's evaluation of a product's superiority or excellence (Zeithaml 1988). It has frequently been cited as an important factor contributing towards purchase intentions (Ariffin et al. 2016; D'Souza, Taghian & Khosla 2007; Yan et al. 2019; Zhuang, Luo & Riaz 2021). However, when it comes to the quality perceptions of green products, researchers have found that consumers often assume that businesses divert resources away from product quality, which results in a reduction in consumers' purchase intentions (D'Souza, Taghian & Khosla 2007). Therefore, the current study proposed that a positive and significant relationship exists between Pakistani consumers' perceptions of green product quality and GPIs. The results of the hypothesis testing found that Pakistani consumers' perceptions of green product quality positively and significantly influence GPIs. This finding concurs with the findings of Ali, Danish, et al. (2019) and (Wasaya et al. 2021), who also found that Pakistani consumers' perceptions of quality positively and significantly influence GPIs. This is an important finding as quality perceptions can sometimes be different from reality and thus, need to be continuously monitored and managed very carefully. Therefore, Pakistani businesses need to develop products that possess not only greenness but also high perceived value by enhancing product quality to enhance Pakistani consumers' GPIs. An important observation is that, from a theoretical perspective, none of the variables in the generic TPB model addressed the issue of quality, which is indeed an important and almost universal consideration for consumers. Therefore, perceived quality is a valuable addition to the TPB model.

6.2.7. Perceived consumer effectiveness

PCE was introduced in the extended TPB model, as it has frequently been found to be a positive and significant predictor of purchase intentions (Kang, Liu & Kim 2013; Nurse Rainbolt, Onozaka & McFadden 2012; Zhao et al. 2018). The belief that one can make a positive difference towards environmental problems by purchasing environmentally sustainable products is referred to as PCE (Jaiswal & Kant 2018). The current study proposed that a positive and significant relationship exists between Pakistani consumers' PCE and their attitudes towards green products. The results of the hypothesis testing found a positive and significant relationship between Pakistani consumers' PCE and their attitudes towards green products. This finding concurs with the findings by Roberts (1996), who found that consumers' beliefs (i.e., PCE) also shape their attitudes. PCE is an important tool to counter consumers' scepticism towards the meaningfulness of environmental actions, such as buying green consumer goods.

The current study also hypothesised that PCE mediates the effect of religiosity on attitudes. This was also supported, as PCE was indeed found to significantly mediate the positive effect of religiosity on attitudes. As discussed earlier in this section, when compared to the standardised beta scores, PCE and attitudes were found to be the most influential variables on purchase intentions in the extended TPB framework. This finding will also help managers in prioritising areas for resource allocation for various business functions, such as marketing. In light of the findings of the current research and as found in prior research (Jaiswal & Kant 2018; Zhao et al. 2018), PCE is a valuable addition to the original TPB model.

6.2.8. Green purchase intentions

From the perspective of the TPB, the current study set out to predict intentions. Since the TPB is a generic theory, the current study extended the TPB to the context of Pakistani green consumers to predict their intentions. This resulted in the inclusion of religiosity, PCE, perceived quality and perceived price in the extended TPB model. The results of the hypothesis

testing found that religiosity, attitudes, PBC, PCE and perceived quality positively and significantly influence GPIs, while perceived price and SNs were found not to significantly influence GPIs.

6.2.9. Actual green purchases

One of the aims of the current research was to establish if GPIs can significantly predict Pakistani consumers' AGPs. The results of the SEM-based hypothesis testing found that a positive and significant relationship exists between Pakistani consumers' GPIs and their AGPs. This is an important finding not just in the context of Pakistani green consumers but also because the TPB is limited to predicting intentions only. However, the current study goes a step further by incorporating the consumers' actual purchase behaviour into the model to establish if Pakistani consumers' GPIs lead to AGPs.

These findings are in line with prior research internationally (Wang, McCarthy & Kapetanaki 2021) and also in Pakistan Muzaffar (2015). However, considering the limited studies available that investigated the relationship between Pakistani consumers' GPIs and AGPs, further research to confirm the findings of the current study would be helpful.

6.2.10. Socio-demographic differences

Researchers have successfully used socio-demographic variables such as age (Laroche, Bergeron & Barbaro-Forleo 2001; Morrison & Beer 2017), gender (Kalamas, Cleveland & Laroche 2014; Matthes, Wonneberger & Schmuck 2014) and education (Jeong et al. 2014; Zhao et al. 2014) to differentiate consumers based on their green attitudes and behaviour. The results of the hypothesis testing for differences based on gender revealed that Pakistani consumers differ significantly in terms of their purchase intentions, with men exhibiting higher levels of GPIs compared to women. This is in line with the findings of Saleem, Eagle and Low (2018), who found that Pakistani consumers' green intentions differ based on their gender. However, the results for the hypothesis testing for the effect of age and education could not establish if Pakistani consumers differ significantly in terms of their purchase intentions, based on these socio-demographic characteristics. Therefore, it can be concluded that although Pakistani men and women differ significantly in terms of their GPIs, Pakistani consumers do not differ in their purchase intentions and purchase behaviour based on education and age. Similar

findings are not uncommon, as other researchers have reported that education and age are not able to significantly differentiate GPIs (Anuar, Adam & Omar 2012; Anvar & Venter 2014). However, these findings will be considered with caution. As discussed earlier in the delimitations of the scope (see Section 1.8) and methodology (see Chapter 4), and later in the section on limitations (see Section 6.6), this study was restricted to respondents in four metropolitan cities and to those who were able to read and understand English, which means they all had studied at least till college, thus reducing the probability of respondents exhibiting differences based on education as their education levels were largely similar. Therefore, further research involving a survey instrument in the other official language i.e., Urdu is recommended to confirm the findings of the current investigation.

6.3. Conclusions to the Research Questions

Considering the findings of the research discussed above, this section will address the three research questions of this thesis.

6.3.1. Research Question 1

The first research question was, 'What factors influence Pakistani consumers' GPIs?' To address this first main research question, the following two sub-research questions were offered:

- Research Question 1a: To what extent do religiosity and PCE, through their influence on consumers' attitudes, predict the GPIs of Pakistani consumers?
- Research Question 1b: To what extent does green perceived value, in terms of quality and price, predict the GPIs of Pakistani consumers?

To answer Research Question 1a and Research Question 1b, the TPB was extended by studying the possible influence of perceived quality, perceived price, PCE and religiosity, along with the original TPB components (i.e., attitudes, SNs and PBC). The results of hypotheses H1 to H8 and their respective sub-hypotheses identified that the following five factors have a

positive and significant influence on Pakistani consumers' GPIs: attitudes, religiosity, PBC, perceived quality and PCE.

This study found that religiosity (H5a–H5e) and PCE (H4a–H4c) can positively and significantly predict Pakistani consumers' GPIs, while attitudes mediate the effect of religiosity (H5b) and PCE (H4b) on GPIs, which answers Research Question 1a. This study also found that consumers' perceptions of green product quality (H7) can predict Pakistani consumers' GPIs, but perceptions of price (H6) do not predict their GPIs, which answers Research Question 1b.

Thus, Pakistani consumers' GPIs are influenced by attitudes, PBC, PCE, religiosity and perceived quality, which answers the main research question, Research Question 1.

6.3.2. Research Question 2

The second research question was, 'Do Pakistani consumers' GPIs lead to AGPs?' To address this research question, the relationship between GPIs and AGPs was tested using SEM. The results of the hypothesis testing revealed that a positive and significant relationship exists between GPIs and AGPs, indicating that GPIs will lead to AGPs. This also indicates that Pakistani consumers are consistent in terms of their attitudes, intentions and behaviours. Thus, Pakistani consumers' GPIs lead to AGPs, which answers Research Question 2.

6.3.3. Research Question 3

The third and final research question was, 'Do Pakistani consumers differ in terms of their GPIs based on personal socio-demographic characteristics?' To answer this research question, a one-way ANOVA was used to assess if consumers differed based on the three socio-demographic characteristics of age, gender and education. The results of the hypothesis testing revealed that Pakistani men exhibit significantly higher GPIs than women. This is in line with the findings of Saleem, Eagle and Low (2018), who found that Pakistani consumers' GPIs differ based on their gender. Further, consistent with the

results of studies by Anvar and Venter (2014) and Anuar, Adam and Omar (2012), the results of the hypothesis testing for the effect of age and education could not establish if Pakistani consumers differ significantly based on these socio-demographic characteristics. Therefore, it can be concluded that although Pakistani men and women differ significantly in terms of their GPIs, they do not differ in their purchase intentions based on education and age, which answers the final research question.

6.4. Revised Conceptual Model

Considering the results of the hypothesis testing and subsequent discussion of the research questions, the current research proposes a revised conceptual model, as shown below in Figure 16:

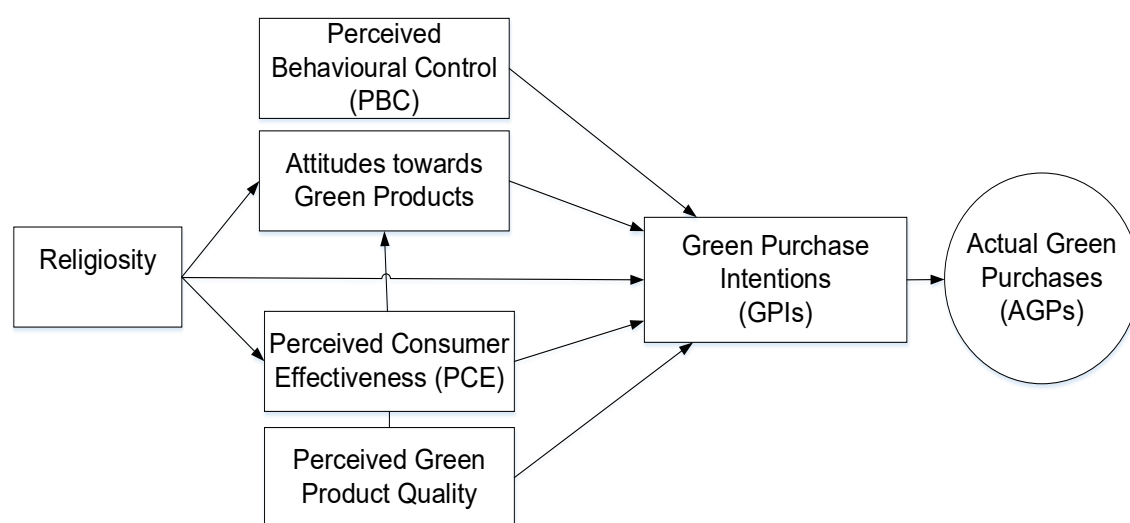


Figure 15: Revised conceptual model

As evident from Figure 16, there is a positive relationship between PBC and GPIs. Similarly, the attitudes towards green products positively influence GPIs. Attitudes also mediate the positive and significant effect of religiosity and PCE on consumers' GPIs. However, SNs were not found to significantly influence GPIs. Additionally, religiosity positively influences both attitudes towards green

products and consumers' PCE. Further, PCE has a positive relationship with consumers' purchase intentions and also mediates the positive effect of religiosity on consumers' attitudes towards green products. Perceived green product quality was also found to positively influence consumers' intentions to buy green products. Finally, consumers' GPIs were found to positively influence consumers' actual purchase behaviours.

6.5. Contributions and Implications of the Research

This section will discuss the contributions of the current research to the theory and the implications for practice and policy. It makes contributions to theory, practice and policy by providing us with a better understanding of consumers' GPIs and AGPs in the context of a developing economy.

6.5.1. Contributions to theory

First, as discussed in Chapter 2, an all-encompassing theory of green consumption does not exist (Groening, Sarkis & Zhu 2018, p. 31). Green consumption researchers have, therefore, drawn on theories from other fields to explain this phenomenon. From the field of social psychology, the TPB was selected as an appropriate model to base this research on. This research has, therefore, contributed to the body of work in the field by extending the use of the TPB theory to Pakistani consumers' green purchase behaviour. Although the TPB theory has been well received in marketing literature, it has not been extensively applied in the context of Pakistani consumers or consumers strongly driven by religious values (particularly Islamic religiosity). As noted, only a small number of studies have used the TPB theory in the context of Pakistani consumers, and only two studies have examined Pakistani consumers' green consumption in the context of their religiosity. The current study also extended the TPB theory by considering several mediators that may influence Pakistani consumers' intentions and actual purchase behaviour towards green products. Given the healthy response rate, the findings of this study make a significant contribution to the body of knowledge on green consumption research, particularly in the context of the applicability of the TPB. Therefore, as well as contributing to the body of research on green

consumption by employing the TPB, this study is notable for extending this area of research to Pakistan.

Second, owing to their different socio-economic challenges, consumers in developing economies may be expected to respond differently to different stimuli, thus influencing their purchase of green products. As discussed in Chapter 1 and Chapter 2, irrespective of their personal circumstances, consumers around the world have responded differently to green products, resulting in the identification of an intention–behaviour gap. As noted in Chapter 1, the focus of green consumer research has mainly been on consumers in developed economies, with little attention paid to test or extend these theories to the consumers in developing economies. However, for a theory to be generalisable, it must be tested on diverse populations, which will also contribute to the theoretical cause of developing an all-encompassing theory of green purchase behaviour. In the case of Pakistan, a developing country with 192 million consumers, there has been only limited research addressing Pakistani consumers' green purchase behaviour (see Appendix A for a summary of past green consumption studies on Pakistani consumers). Based on the opinions of the Pakistani consumers, the extended TPB model was refined to reflect the findings of the study. This revealed the important role that religiosity plays through its influence on PCE and attitudes in shaping consumers' intentions. Consumers' perceptions of quality were also identified as an important contributor towards consumers' purchase intentions. Thus, this research determined five factors that influence Pakistani consumers' GPIs. Finally, the extended model also shows that a positive relationship exists between Pakistani consumers' GPIs and AGPIs which adds value to the existing theory discourse regarding the relationship between GPIs, and AGPs. Therefore, based on the results of this study, the current research contributes to the theory by successfully testing an extended version of the TPB in the context of a developing economy (i.e., Pakistan), and hence enhancing the generalisability of the theory of planned behaviour to other developing countries in the region such as India and Bangladesh which have similar socio-demographic characteristics and a sizeable Muslim population which is larger than that of Pakistan's.

Third, as discussed in Chapter 2, buying green products is a prosocial behaviour, and sources that promote prosocial values, such as religion (Hardy & Carlo 2005), can be an important influencer in the choice to perform prosocial behaviours, such as buying environmentally friendly products. However, not much research has been done with a focus on studying the role of religiosity in influencing consumer intentions, in general, and GPIs. Further, there are limited theoretical insights available in the literature regarding the role of religiosity in influencing the green purchase behaviour of consumers in developing countries, such as Pakistan. The results of the current study show that religiosity not only positively influences Pakistani consumers' attitudes but also their perceptions of effectiveness and purchase intentions. The significant, direct, and indirect influence of religiosity on GPIs shows it to be a valuable extension to the TPB theory. This is a significant finding, particularly given the limited research in this field regarding the role of religiosity, and particularly Islamic religiosity. Therefore, this research contributes to the theory by confirming the important role of religiosity in the context of green purchase behaviour in a highly religious society.

Fourth, consumers' socio-demographic characteristics, such as level of education and age, also significantly influence their ability and intentions to buy a product (Morrison & Beer 2017). Similarly, research has also identified how socio-demographic characteristics such as age, education level and gender can complicate the green purchase process even further. However, the existing literature on understanding the effect of these socio-demographic characteristics is far from conclusive as researchers from around the world continue to report conflicting findings (Hertel et al. 2013). Similarly, as discussed in Chapter 1 and Chapter 3, theoretical insights on the role of these characteristics in influencing the GPIs of Pakistani consumers are limited. As reported in the findings, Pakistani men have higher levels of GPIs, while consumers did not differ in terms of education and age. This is an important finding, as environmentalism is often associated with the female gender. However, this research has shown that it is the male clientele in Pakistan that is more likely to purchase green products. This can be explained in the light of, Diamantopoulos et al. (2003), who following an interdisciplinary review of the

literature, found that men have more knowledge about environmental issues than women, and therefore, they act more responsibly towards the environment. This finding is highly relevant in the case of Pakistan, when viewed in the light of higher male literacy rate in Pakistan (Ahmed & Mujahid 2021) Therefore, this research contributes to the theory by providing useful insights on how different consumer demographic groups differ in terms of their GPIs in a developing economy (i.e., Pakistan).

6.5.2. Implications for practice and policy

The current research also provides important implications for green marketing practice, and policy development and implementation in Pakistan. Green products have existed for some time, but they have not received mainstream acceptance (Grimmer & Bingham 2013). This study contributes to the practice by providing important empirical evidence to help green marketers plan effective marketing strategies to improve the rate of acceptance of green products.

First, most Pakistanis are practising Muslims. Islam, like most religions, promotes prosocial behaviours (Norenzayan et al. 2016). Religiosity, as part of the extended TPB, was identified as an important factor, as it directly influenced attitudes, PCE and purchase intentions. This finding has important implications for practice and policy because Islam, like most religions, promotes prosocial behaviours, while Muslims consider religion as a way of life. Businesses in different industries have benefited by modifying their products and services to make them compatible with the religious sentiments of Muslims—for example, interest-free banking (Chazi et al. 2020), designer wear (Randeree 2019) and halal food, to name a few. Similarly, since Islam prohibits wastefulness and damage to the natural environment, the government of Pakistan—while citing the Holy Book (Quran) and sayings of the Holy Prophet Muhammad (Peace Be Upon Him), which is also known as *Sunnah*—can promote green products as consistent with the Islamic way of life. Therefore, as supported by the findings of the current study and the success of past business practices, religiosity presents an attractive

opportunity for businesses to promote green products as products that are compatible with the Islamic way of life.

Second, as discussed in Section 6.2.7, PCE was identified as one of the two most influential variables as part of the extended TPB framework. It was found to significantly influence both attitudes and intentions. Therefore, based on the findings of the current research, by enhancing consumers' levels of PCE, businesses and governments can accelerate the diffusion of green products. This can be achieved by providing tangible measures of how individual acts on a small scale (e.g., buying an energy-efficient light bulb) can result in considerable environmental savings over a long period.

A good example of such a tangible measure that is useful for demonstrating to individual consumers the environmental effectiveness of their individual actions is the Phillips's LED savings calculator.² This calculator lets consumers select between three different LED technologies (i.e., fluorescent, incandescent or halogen), followed by the selection of the amount of electric power and hours of use per day. It then calculates and displays the total savings per year and provides tangible information in terms of dollars saved while also communicating that the product is environmentally friendly. Another example of a public body playing a similar role is the Energy Rating Calculator³ by Greenhouse Energy Minimum Standards Regulator in Australia. This calculator lets customers choose the make, model, capacity or size of a wide range of household electrical appliances and then calculates the savings over a period of 10 years for using an environmentally friendly appliance. Unfortunately, the use of an energy rating system is not a routine practice, and neither is it a mandatory regulatory requirement in Pakistan. Therefore, in line with the findings of this research, regulatory changes or voluntary adoption of the energy rating system by green businesses can be a useful way of enhancing Pakistani consumers' levels of PCE. Hence, through the identification of the important role of PCE, this research provides valuable and actionable insights to businesses and public policymakers in designing

² Philips LED Savings Calculator. Accessed March 11, 2020. <https://www.lighting.philips.com.au/consumer/led-lights/led-savings-calculator>.

effective strategies to promote environmentally friendly consumer products in Pakistan.

Third, green products, in certain ways, are different from non-green ones, and so they need to be marketed differently since consumers have different attitudes towards these products (Smith & Brower 2012). This study has confirmed the important role that attitudes play in shaping GPIs, as it found that attitudes are one of the two most influential contributors shaping consumers' purchase intentions. Therefore, businesses and public policymakers can use promotional tools, such as advertising, to appeal to the consumers' sense of community to promote favourable attitudes by communicating the positive contribution that green products make to the lives of customers, society and the natural environment. This is also supported by Laroche, Bergeron and Barbaro-Forleo (2001), who reported an increase in the number of consumers willing to pay more for green products as a result of marketing and awareness-raising campaigns in developed countries. Therefore, as identified by the findings of the current research, attitudes are one of the most influential predictors of intentions, and businesses and governments should continuously make efforts to promote favourable attitudes towards green products among Pakistani consumers.

Fourth, since green products are often incorrectly perceived as an outcome of companies diverting resources away from product quality (Newman, Gorlin & Dhar 2014), the current study has attempted to study and understand the role of Pakistani consumers' perceptions of green product quality in shaping their intentions. As the findings of the research show, consumers' perceptions of green product quality have an important influence on their purchase intentions. Therefore, to counter any misconceptions, businesses must put advertising to effective use by pre-emptively addressing consumers' misconceptions regarding the quality of green products (May, Cheney & Roper 2007, p. 368). For example, through its promotion of the Prius model as not just a green but also a better-quality car, Toyota Motor's Prius has become a status symbol. Toyota was able to achieve this by advertising the Prius as 'quick, roomy, and economical' (Bonini & Oppenheim 2008, p. 4). In the case of green products, it is also important that advertisers substantiate their claims by adding clear and

unambiguous details in terms of their green product quality claims (Segev, Fernandes & Hong 2016). Therefore, green businesses in Pakistan must build consumers' confidence in the quality of their products by using informative advertising that conveys complete and accurate information about the characteristics of products (Gardete & Guo 2020).

Fifth, Pakistan, along with 193 other countries, is a signatory to the United Nations 2030 Agenda for Sustainable Development (Desa 2016) and has an obligation to institute steps towards achieving the SDG12 – Responsible Consumption and Production goals (Franco & Newey 2020). One of these goals involves ensuring sustainable consumption and production patterns (Chan et al. 2018). The current study has reconfirmed earlier findings by Muzaffar (2015) that found that Pakistani consumers' intentions lead to AGPs, which makes the government's job easier in instituting steps towards the 2030 Agenda for Sustainable Development (Desa 2016). However, for green products to attain a considerable market share, it is important that the government of Pakistan facilitates a favourable climate for this market. This is particularly important because the mainstream adoption of environmentally sustainable consumer goods involves structural changes over longer periods of time, and among others, requires co-evolutionary changes in technology and organisational reforms (Fathoni & Boer 2021; Schader et al. 2021; Tsoi, Loo & Banister 2021). These cannot be solely addressed by commercial entities and require a synchronised effort by businesses and the government of Pakistan. The findings of this research provide the government of Pakistan with a useful toolkit to facilitate green consumption by identifying the important factors and their interrelationships in influencing Pakistani consumers' responses towards environmentally friendly products to meet its obligations as part of the SDG12 – Responsible Consumption and Production (Franco & Newey 2020). This information will be useful in (i) informing public policies that initiate reforms and regulatory changes, (ii) guiding public relations campaigns, and (iii) incentivising manufacturers and end-consumers.

6.6. Limitations of the Study and Directions for Future Research

The current research was limited by the type and extent of data that were collected from the population. Due to financial and time constraints, the final data analysis for hypothesis testing was performed on a sample of 426 respondents from only certain metropolitan cities of Pakistan and thus, ignored consumers from the rural areas and other smaller cities, who might be in a socio-economically disadvantaged position (Saleem, Shabbir & Khan 2019). Further, as discussed in Appendix A, considering the limited number of comparable studies in the Pakistani context, it is important for the study to be replicated in rural areas to test for generalisability. Therefore, the current study model could be extended to other territories of Pakistan, which would enhance its generalisability to the Pakistani population. Similarly, future research using Urdu, or a regional language, will help in evaluating the applicability of the study to parts of the population who cannot read English.

As discussed in Chapter 5, SNs, when observed as part of the original TPB, were not found to significantly influence intentions. While the addition of SNs to the extended TPB model adversely affected the reliability and validity of the resulting model, and SNs were thus excluded from the extended TPB. Possible causes leading to this were discussed in the findings section, along with similar findings from other studies, including those from Pakistan (see Section 6.2.5). However, further investigation to reconfirm this finding in the context of Pakistani consumers' GPIs would be helpful.

This study collected data through self-report survey questionnaires only, which can result in issues such as socially desirable responses, CMV and unengaged respondents. In addition, self-reporting also has issues of being an imperfect measure of behaviour. This study took several measures to address these issues, such as using differently ordered questionnaires, collinearity diagnostics and SEM to help reduce the likelihood of CMV. Nevertheless, future research can overcome the limitations of the self-report surveys by using multiple sources of data particularly those relying on unobtrusive observational techniques, especially for the dependent variable. Furthermore,

since the current study investigated general green purchase intentions, future research can benefit from studying the same across different product categories.

Future researchers could extend the research model to other countries in the region, such as India and Bangladesh, which have similar socio-demographic characteristics, a diverse range of religions and a similar or greater number of Muslim citizens (e.g., India has 201 million Muslim citizens and Bangladesh has 146 million Muslim citizens). This will also help in ascertaining whether other religiosities (e.g., Hinduism, Sikhism and Christianity) have a similar influence on GPIs.

Additionally, future research could benefit from expanding the demographic variables being studied such as income, family size, and marital status. Similarly future research could also benefit from studying how the demographic differences affect the green purchase behaviour.

Finally, as noted in Chapter Four, due to the time, resource constraints and the huge size of the population, the current study used convenience sampling to collect data by randomly intercepting visitors of various shopping malls. Future research can overcome these limitations by adopting either systematic random sampling or cluster random sampling.

6.7. Conclusion of the Research

Growing environmental consciousness has resulted in an increased focus on identifying ways and means to promote sustainable choices, such as green consumption. The current research was conducted with the aim of identifying factors that influence consumers' purchase intentions and the relationship between intentions and actual purchases among Pakistani consumers.

In addition to attitudes, PBC and perceived quality, which are often found to be related to consumers' intentions towards conventional products, this current study found that consumers' perceptions of the usefulness of their green purchases (in meaningfully contributing to the environmental cause)—that is, PCE—play an important role in convincing them to buy green. Further, this study also recommends alluding to the prosocial values propagated by Islam

in promoting green consumption among Pakistanis, who are predominantly Muslims and pursue their religion as a way of life. An important finding is that Pakistani consumers' GPIs lead to actual purchases. Therefore, this study provides considerable insights into the dynamics of the consumer behaviour of a lucrative but untapped Pakistani market in a challenging product category.

This study has laid the groundwork for theory modification and extension by providing a stepping stone for future researchers, who could extend the research model to other countries with similar socio-demographic characteristics in the region and countries with a higher number of Muslim citizens compared to Pakistan.

6.8. Chapter Summary

This chapter started with a summary of the findings of the research. Based on the research findings, conclusions to the three research questions were drawn. This was followed by a discussion that highlighted the contributions of this study to theory and practice, including recommendations for green businesses and governments to help them promote green consumerism. This chapter then acknowledged the limitations of the research and discussed the precautionary measures that were taken to minimise the effect of these limitations. Directions for future research were then provided to address some of the limitations of this study and improve the generalisability of the findings. The chapter then provided a conclusion to the research.

References

Appendix A. Critical Review of Green Consumption Research in Pakistan

Introduction

This section critically reviews past green consumption studies that have been carried out on Pakistani consumers. It reviews the theoretical support, methodological approach and reporting practices adopted by these studies. This section concludes with a summary of the review.

1. Akbar, W, Hassan, S, Khurshid, S, Niaz, M & Rizwan, M 2014, 'Antecedents affecting customer's purchase intentions towards green products', *Journal of Sociological Research*, vol. 5, no. 1, pp. 273–89.

Some references were incorrectly attributed to certain authors. For example, the study claims to have adapted items for intentions from Bolton and Drew (1991); however, the claim was incorrect. Similarly, contrary to the claim, the scale for attitudes was not adapted from Sweeney and Soutar (2001). Further, a number of citations mentioned in the study were either misrepresented or not listed in the reference list. Therefore, the study did not follow proper reporting conventions.

2. Ali, A, Khan, AA, Ahmed, I & Shahzad, W 2011, 'Determinants of Pakistani consumers' green purchase behavior: Some insights from a developing country', *International Journal of Business and Social Science*, vol. 2, no. 3, pp. 217–26.

The authors did not provide a reasonable theoretical justification for the moderating role of perceived quality and perceived price. Additionally, the study provided incorrect citations as the source for measuring perceived price and perceived quality.

3. Ali, A, Xiaoling, G, Sherwani, M & Ali, A 2015, 'Will you purchase green products? The joint mediating impact of environmental concern and environmental responsibility on consumers' attitude

and purchase intention', *British Journal of Economics, Management and Trade*, vol. 8, no. 2, pp. 80–93.

The study proposes environmental concern and environmental responsibility as predictors of consumers' attitudes, but no supporting citations were provided, and neither were any conceptual or operational definitions furnished. The study also claims to have adapted the measures for environmental knowledge from Ali and Ahmad (2016); however, the study did not develop or even list any items on environmental knowledge.

4. **Ali, S, Ullah, H, Akbar, M, Akhtar, W & Zahid, H 2019, 'Determinants of consumer intentions to purchase energy-saving household products in Pakistan', *Sustainability*, vol. 11, no. 5, p. 1462.**

The authors claim that technology readiness (TR) influences attitudes, but the review of literature only alludes to the direct relationship between TR and 'intentions. For example, to quote from the study:

People's behaviour differs in adopting new technology and not everyone is ready to accept these advanced products. Indeed, our personality related traits play an important role in our buying, "intentions" for new tech-based products.

As claimed by the authors, the study's foundations were based on the Technology Readiness Index (TRI) proposed by Parasuraman and Colby (2015). However, the TRI, as proposed by Parasuraman and Colby (2015), is a tool that deals with technology adoption and is not designed to study attitudes. The authors have also not provided any underlying theory or logic to assume that TR, as measured by the TRI, influences attitudes towards energy-saving products.

5. **Ali, A & Ahmad, I 2016, 'Environment friendly products: Factors that influence the green purchase intentions of Pakistani consumers', *Pakistan Journal of Engineering, Technology & Science*, vol. 2, no. 1.**

The authors studied the moderating effect of perceived price and perceived quality. However, no supporting literature or underlying logic testifying to the 'moderating' effect was discussed. The study also claims to have adapted the measures for environmental concern and environmental knowledge from Abdul-Muhmin (2007) and Mostafa (2007), respectively. However, both these studies did not develop any scales.

6. **Ali, S, Danish, M, Khuwaja, FM, Sajjad, MS & Zahid, H 2019, 'The intention to adopt green IT products in Pakistan: Driven by the modified theory of consumption values', *Environments*, vol. 6, no. 5, p. 53.**

The study claims to have adapted the items for intentions from Nguyen, Lobo and Greenland (2016), the functional value from Biswas and Roy (2015), and the conditional value from Rahnama and Rajabpour (2017). However, none of these studies has developed a scale.

7. **Al-Swidi, A, Mohammed Rafiul Huque, S, Haroon Hafeez, M & Noor Mohd Shariff, M 2014, 'The role of subjective norms in theory of planned behavior in the context of organic food consumption', *British Food Journal*, vol. 116, no. 10, pp. 1561–80.**

The study relied on the TPB to predict intentions, and no issues were identified. However, it had a limited scope compared to the current study as it neither modified the TPB to the context of green consumption nor did it study the relationship between intentions and actual behaviour.

8. **Hameed, I, Waris, I & ul Haq, MA 2019, 'Predicting eco-conscious consumer behavior using theory of planned behavior in Pakistan', *Environmental Science and Pollution Research*, vol. 26, no. 15, pp. 15535–47.**

The study used the TPB framework to study actual 'behaviour', notwithstanding the fact that the TPB was designed to predict

‘intentions’ and not actual ‘behaviour’. The authors did not provide any explanation or theoretical association for this decision.

In addition, the literature review done by the authors contradicted what they were doing. For example, to quote from the study, ‘Attitude is the primary and most crucial factor that determines individual behavioural “intention”’. Further, the authors cited Mostafa (2007) to support the hypothesis that attitudes lead to green behaviour. However, even Mostafa (2007) proposed that attitudes lead to intentions and not actual behaviour.

- 9. Hassan, HA, Abbas, SK, Zainab, F, Waqar, N & Hashmi, ZM 2018, ‘Motivations for green consumption in an emerging market’, *Asian Journal of Multidisciplinary Studies*, vol. 6, no. 5.**

The authors did not sufficiently explain the underlying theoretically justification for the proposed model, especially with regards to the link between the independent and dependent variables. The study adapted the scale from Ritter et al. (2015); however, even the original authors have not developed or listed the items for measuring the dependent variable (i.e., green product consumption).

- 10. Konuk, FA, Rahman, SU & Salo, J 2015, ‘Antecedents of green behavioral intentions: a cross-country study of Turkey, Finland and Pakistan’, *International Journal of Consumer Studies*, vol. 39, no. 6, pp. 586–96.**

There were no issues identified. However, the study had a limited scope compared to the current study as the focus was on predicting intentions only, and they did not study the relationship between intentions and actual behaviour.

- 11. Moon, MA, Mohel, SH & Farooq, A 2019, ‘I green, you green, we all green: Testing the extended environmental theory of planned behavior among the university students of Pakistan’, *The Social Science Journal*.**

The study, as evident from the title, 'I green, you green, we all green: Testing the extended environmental Theory of Planned Behaviour (TPB) among the university students of Pakistan', is based on the TPB. However, the study relied on attitudes and subjective norms only, which is basically the TRA. Further, the supporting theory for most of the proposed relationships was missing. For example, the study proposes a relationship between perceived environmental responsibility (PER) and attitudes. However, no supporting theory or underlying logic was provided. In fact, the authors associated PER with green purchase behaviour, which was not part of the study. To quote the authors, 'Building on this logic, we may say that the propensity to engage in green purchase behaviours is higher in environmentally responsible consumers'. Finally, the study mostly relied on the work of Lee (2008) to measure PER, Perceived Effectiveness of Environmental Behaviour (PEEB) and Perceived Seriousness of Environmental Problems (PEEP). However, Lee (2008) dealt with PER, PEEB and PEEP as predictors of actual green consumption and not as predictors of attitudes, as done by the authors in this research.

12. Muzaffar, N 2015, 'Developing an extended model of theory of planned behavior to explore green purchase behavior of Pakistani consumers', *American Journal of Business and Management*, vol. 4, no. 2, pp. 85–101.

There were some serious discrepancies between what the author proposed and what the study did. For example, the study proposes to study the mediating role of intentions on actual green consumption. However, alongside studying the mediating effect of intentions, the author measured the direct effect of the independent variables on actual green consumption, while no underlying theoretical support for this was discussed. Further, the study used SEM to test around two dozen relationships, resulting in a complicated model. Even though the SEM model fit criteria places penalties for overly complicated models, the study was able to achieve unrealistically ideal results (e.g., R^2 of

0.934) and meet all the acceptable thresholds (e.g., CFI = 0.985, GFI = 0.945, AGFI = 0.927, RMSEA = 0.03, RMR = 0.02, TLI = 0.982).

- 13. Khan, SN & Mohsin, M 2017, 'The power of emotional value: Exploring the effects of values on green product consumer choice behavior', *Journal of cleaner production*, vol. 150, pp. 65–74.**

The scope of the research was limited to studying the role of consumers' perceptions of values on actual behaviour. The study claims to have adapted the measures for all the variables, including environmental value (EV) from Lin and Huang (2012). However, Lin and Huang (2012) did not develop a scale, while EV was not part of this study at all.

- 14. Razzaq, A, Ansari, NY, Razzaq, Z & Awan, HM 2018, 'The impact of fashion involvement and pro-environmental attitude on sustainable clothing consumption: The moderating role of Islamic religiosity', *SAGE Open*, vol. 8, no. 2.**

- 15. Razzaq, Z, Razzaq, A, Yousaf, S & Hong, Z 2018, 'The impact of utilitarian and hedonistic shopping values on sustainable fashion consumption: The moderating role of religiosity', *Global Business Review*, vol. 19, no. 5, pp. 1224–39.**

The dependent variable for both these studies (No. 14 and No. 15) was 'consumption'. However, their actual focus was on 'intentions'. Similarly, the studies listed the items used to measure consumption, but they did not measure consumption (i.e., past and present behaviour). Instead, they were measures of 'intentions' (i.e., future intentions). Therefore, the methodology in both these studies did not support its stated objectives.

- 16. Saleem, MA, Eagle, L & Low, D 2018, 'Market segmentation based on eco-socially conscious consumers' behavioral intentions: Evidence from an emerging economy', *Journal of Cleaner Production*, vol. 193, pp. 14–27.**

No issues were identified; however, the study had a limited scope, in that it only studied intentions and not actual purchase behaviour.

Conclusion

A review of the literature indicates that only limited research has been done on Pakistani consumers' green purchase behaviour. However, the studies available in this area are beset with underlying theoretical issues and reporting discrepancies. The studies that were conducted by Saleem, Eagle and Low (2018); Khan and Mohsin (2017); Konuk, Rahman and Salo (2015); and Al-Swidi et al. (2014) are the only studies that proposed models that were supported by adequate literature. The studies of Saleem, Eagle and Low (2018); Konuk, Rahman and Salo (2015); and Al-Swidi et al. (2014) were the only studies without any reporting issues. Compared to these, the current research has a much broader scope in that it (i) modifies the existing theory to predict intentions in a green context better, and (ii) studies the relationship between intentions and actual behaviour. Therefore, a major research gap exists that needs to be addressed using a methodological approach that is well informed by existing theory and accurately reports procedures and results.

Appendix B. Survey Questionnaire

Survey

Please express your opinion by circling a number between 1 to 5 on the scale below, with **1** meaning Strongly Disagree, **2** meaning Disagree, **3** meaning Neither Agree nor Disagree, **4** meaning Agree, **5** meaning Strongly Agree.

		Strongly Disagree			Strongly Agree	
1	For me, buying environmentally friendly products is good.	1	2	3	4	5
2	For me, buying environmentally friendly products is pleasant.	1	2	3	4	5
3	For me, buying environmentally friendly products is attractive.	1	2	3	4	5
4	The trend of buying environmentally friendly products among people around me is increasing.	1	2	3	4	5
5	People around me generally believe that it is better for one's health to use environmentally friendly products.	1	2	3	4	5
6	My close friends and family members would appreciate it if I bought environmentally friendly products.	1	2	3	4	5
7	I can afford to buy environmentally friendly products.	1	2	3	4	5
8	I have complete information regarding where to buy environmentally friendly products.	1	2	3	4	5
9	Environmentally friendly products are easily available where I live.	1	2	3	4	5
10	I feel that I can help solve natural resource problems by conserving water and energy.	1	2	3	4	5
11	I can protect the environment by buying products that are friendly to the environment.	1	2	3	4	5
12	I feel that I am capable of helping to solve environmental problems by buying environmentally friendly products.	1	2	3	4	5
13	Environmentally friendly products offer value for money.	1	2	3	4	5
14	The price of environmentally friendly products is reasonable.	1	2	3	4	5
15	The price of environmentally friendly products is affordable.	1	2	3	4	5
16	The likely quality of environmentally friendly products is extremely high.	1	2	3	4	5

17	The likelihood that environmentally friendly products are functional is very high.	1	2	3	4	5
18	The likelihood that environmentally friendly products are reliable is very high.	1	2	3	4	5
19	I am willing to buy environmentally friendly products in the future.	1	2	3	4	5
20	I plan to buy environmentally friendly products on a regular basis.	1	2	3	4	5
21	I would look for specialty shops to buy environmentally friendly products.	1	2	3	4	5
22	I spend time trying to grow in understanding of my faith.	1	2	3	4	5
23	Religion is especially important to me because it answers many questions about the meaning of life.	1	2	3	4	5
24	Religious beliefs influence all my dealings in life.	1	2	3	4	5
25	I have regularly bought environmentally friendly products in the last month.	1	2	3	4	5
26	I have often bought environmentally friendly products in the last week.	1	2	3	4	5
27	I often buy environmentally friendly products whenever I can.	1	2	3	4	5
28	What is your age group? a. 18 to 25 years b. 26 to 30 years c. 31 to 35 years d. 36 to 40 years e. 41 to 45 years f. 45 to 50 years g. 51 to 55 years h. 56 to 60 years i. 61 to 65 years j. 66 to 70 years k. 71 years and above					
29	What is your gender? a. Male b. Female c. Other _____ d. Prefer not to say					
30	What is your level of education? a. College or lower b. Bachelor's c. Master's or higher					

Thank you for your time and effort.

Appendix C. Information Sheet for Participants

Green Consumer Behaviour: Studying Factors Influencing Consumers' Green Purchase Intentions, And the Relationship Between Intentions and Actual Purchases

Invitation

You are invited to participate in a study on factors affecting consumers' green purchase behaviour.

The researcher, Usman Yousaf, is a PhD candidate at the Tasmanian School of Business and Economics (TSBE) at the University of Tasmania in Australia. The project is being conducted to fulfil the requirements of a PhD and is supervised by Professor Martin Grimmer and Associate Professor Stuart Crispin from the Marketing Discipline in the TSBE.

What is the purpose of this research?

The purpose of this research is to identify factors influencing consumers' purchase of green products in a developing economy. Green products are referred to as products designed to reduce the consumption of natural resources and limit negative environmental consequences along the whole life cycle of such products.

Why have I been invited to participate in this research?

You have been invited to participate in this study because you are an adult Pakistani consumer.

What will I be asked to do?

You will be given a survey questionnaire, which asks a series of questions. There are no right or wrong answers. Please answer according to what is true regarding your opinions and behaviour. Your participation in the study is entirely voluntary, and you may withdraw (i.e., leave the survey) at any time when completing it and without providing an explanation. You may also refuse

to answer any question by leaving it blank on the survey form. If you leave the survey without completing it, the data will not be saved and will be discarded.

All the responses are anonymous and non-identifiable and will be kept confidential by the researchers.

The survey questionnaire will take approximately 10 minutes to complete.

Are there any possible benefits from participating in this study?

This study, through the publication of the results in marketing or management journals, will aid in the long-term environmental planning and awareness-building of environmental issues in a manner that will result in a better response to green products.

Are there any possible risks from participating in this study?

There are no specific risks anticipated by participating in this study.

What if I change my mind during or after the study?

Your participation in the study is entirely voluntary, and you may withdraw (i.e., leave the survey) at any time without providing an explanation. You may also refuse to answer any question by leaving it blank on the survey form. Due to the anonymous nature of the survey, it will not be possible to withdraw you from the study once you have completed and submitted the survey. Completion and submission of the survey will be taken as evidence of your consent to participate in the study.

What will happen to the information when this study is over?

The completed survey forms will be stored in a locked cabinet for five years at the University of Tasmania, Sandy Bay, Hobart. At the expiration of the five-year minimum data storage requirement time frame, the researchers will review the need for continued storage of the data and will ensure that any further storage continues to be in a securely locked University of Tasmania facility. Should the researchers, at any point after the initial five-year minimum, decide that the data should no longer be usefully retained, they will—in consultation with the heads of their organisational units—destroy the survey questionnaires through shredding in a manner that leaves no traces behind, in

accordance with University of Tasmania data retention and destruction policies and procedures.

How will the results of the study be published?

The results of the study will be published in the form of a Doctoral thesis and publications in academic journals. No respondent will be identified in any publication.

What if I have questions about this study?

If you have any questions about this study, please contact Usman Yousaf via email at usman.yousaf@utas.edu.au in the first instance or Associate Professor Stuart Crispin via email at stuart.crispin@utas.edu.au.

This study has been approved by the Tasmanian Social Sciences Human Research Ethics Committee. For any concerns or complaints about the conduct of this study, participants can contact the Executive Officer of the HREC (Tasmania) Network on +61 3 6226 6254 or email human.ethics@utas.edu.au. The Executive Officer is the person nominated to receive complaints from research participants. Please quote this ethics reference number: H0018125.

Appendix D. Scatter Plot of Cook's Distances

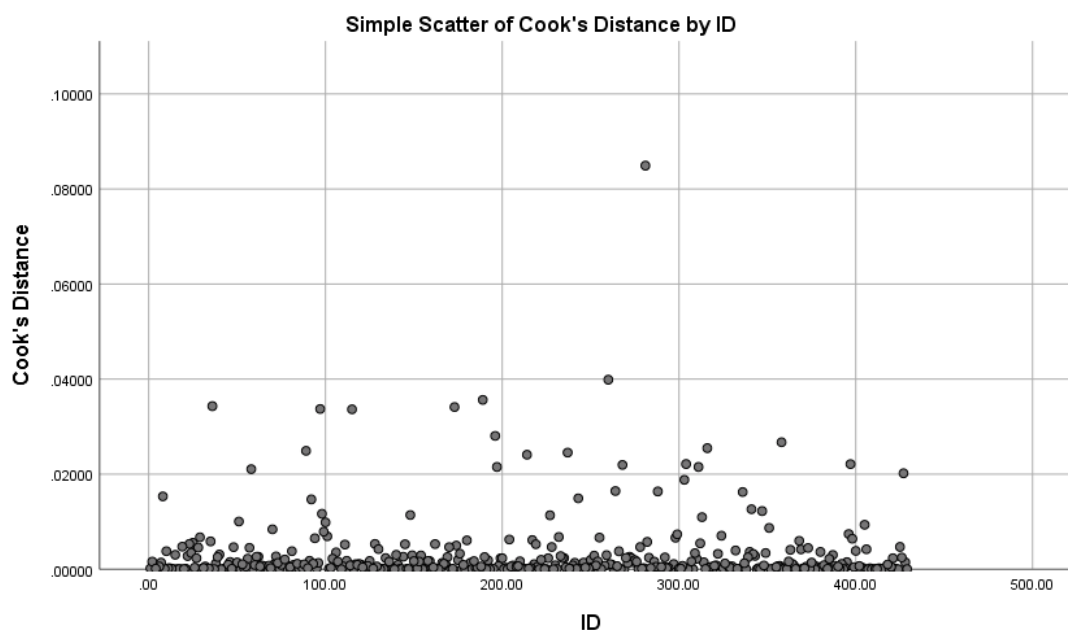


Figure D.1: Scatter plot of Cook's distances for green purchase intentions

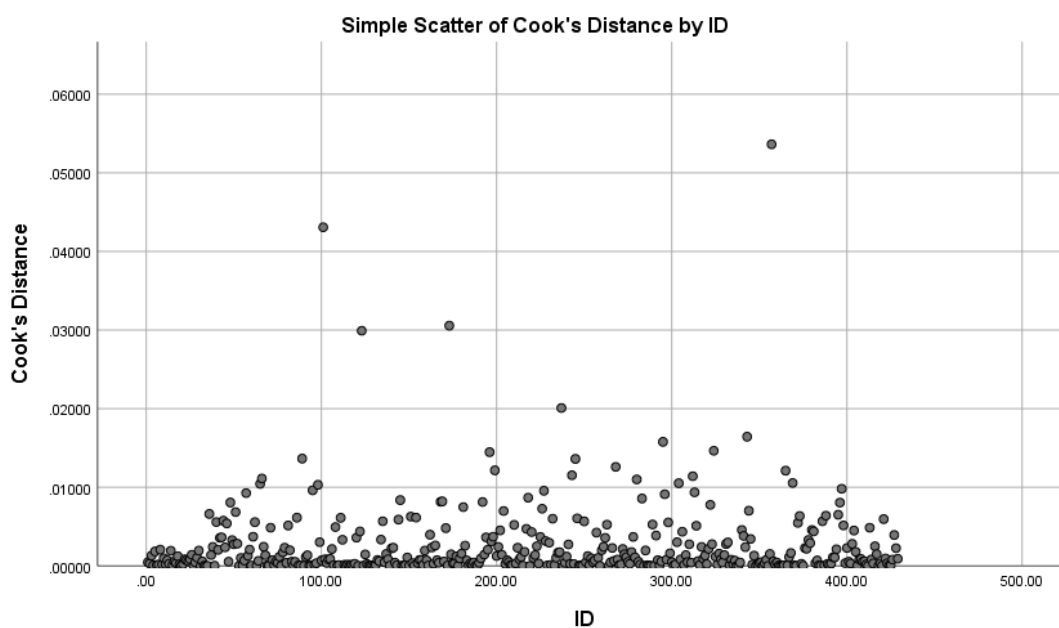


Figure D.2: Scatter plot of Cook's distances for actual green purchases

Appendix E. Skewness and Kurtosis

Table E.1: Skewness and kurtosis

Item	Skewness	Kurtosis
A1	−1.416	2.183
A2	−1.133	1.579
A3	−.784	.314
SN1	−.150	−.548
SN2	−.706	−.023
SN3	−.568	−.246
PBC1	−.680	.217
PBC2	−.054	−.713
PBC3	.040	−.921
PCE1	−.896	.468
PCE2	−1.081	.938
PCE3	−.570	.162
PP1	−.410	−.167
PP2	−.082	−.483
PP3	−.182	−.342
PQ1	−.258	−.273
PQ2	−.190	−.486
PQ3	−.532	.069
PI1	−1.256	1.799
PI2	−.513	−.183
P13	−.509	−.068
R1	−.496	−.091
R2	−1.422	1.620
R3	−1.157	.916
PB1	.000	−.716
PB2	.445	−.926
PB3	.607	−.165

Note: Standard error of skewness = 0.118; standard error of kurtosis = 0.236; $N = 426$; A1, A2, A3 = Attitude; SN1, SN2, SN3 = Subjective Norms; PBC = Perceived Behavioural Control; PCE = Perceived Consumer Effectiveness; PP = Perceived Price; PQ = Perceived Quality; PI = Green Purchase Intentions; R1, R2, R3 = Religiosity; PB = Actual Green Purchases

Appendix F. Collinearity Diagnostics

Table F.1: VIF scores for assessing multicollinearity

Predictor	Tolerance	VIF
Subjective norms	.719	1.391
Perceived consumer effectiveness	.625	1.599
Perceived behavioural control	.802	1.248
Religiosity	.796	1.257
Perceived quality	.802	1.247
Perceived price	.812	1.231
Attitude	.597	1.674
Purchase intentions	.584	1.712

Appendix G. Linearity

Table G.1: ANOVA for deviation from linearity

	Sum of Squares	df	Mean Square	F	Sig
Attitude	2.150	10	.215	.345	.968
SNs	6.423	10	.642	1.030	.417
PCE	3.029	10	.303	.382	.954
Price	13.462	10	1.346	1.459	.152
Quality	8.642	10	.864	1.345	.204
Religiosity	2.710	10	.271	.328	.973
PBC	13.494	10	1.349	1.428	.165
GPIs	3.795	10	.379	.714	.711

Note: SN = Subjective norms; PCE = Perceived consumer effectiveness, PBC = Perceived behavioural control; Quality = Perceived quality; Intentions = Green purchase intentions; Price = Perceived price.

Appendix H. Variable Inflation Factor

Table H.1: Variable Inflation Factor Scores

Predictor	Tolerance	VIF
Subjective norms	.721	1.388
Perceived consumer effectiveness	.713	1.403
Perceived behavioural control	.804	1.244
Religiosity	.821	1.217
Perceived quality	.819	1.221
Perceived price	.813	1.230
Attitude	.628	1.593

Appendix I. Initial Confirmatory Factor Analysis for the Extended Theory of Planned Behaviour

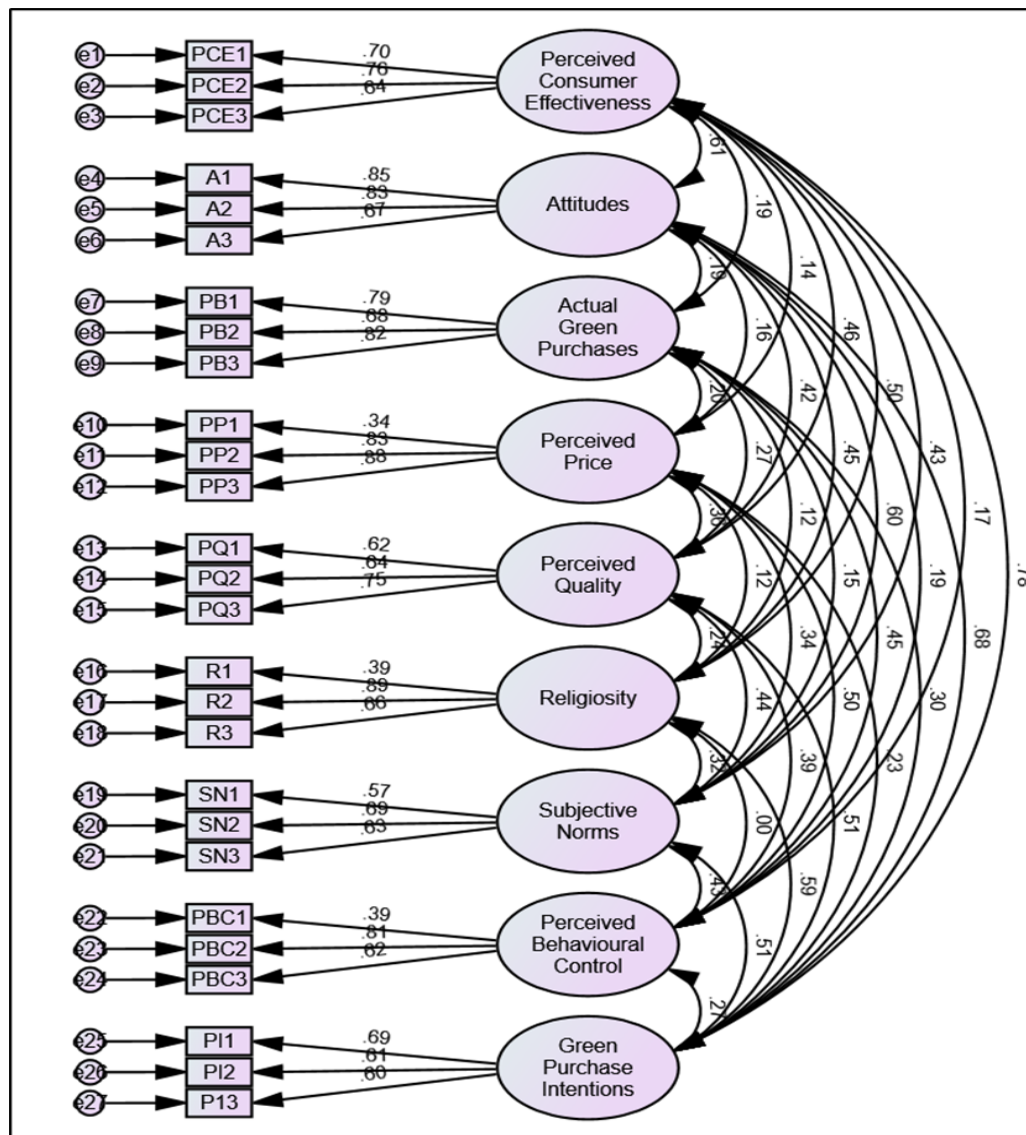


Figure I.1: Initial confirmatory factor analysis for the extended Theory of Planned Behaviour

Note: Squares represent the scale items; circles represent the error terms for the items (e1 to e18); ellipses represent the variables; values on the arrows from ellipses to squares represent factor loadings; values on the double-headed arrows between variables represent inter-construct correlations.

Appendix J. Structural Model for the Theory of Reasoned Action

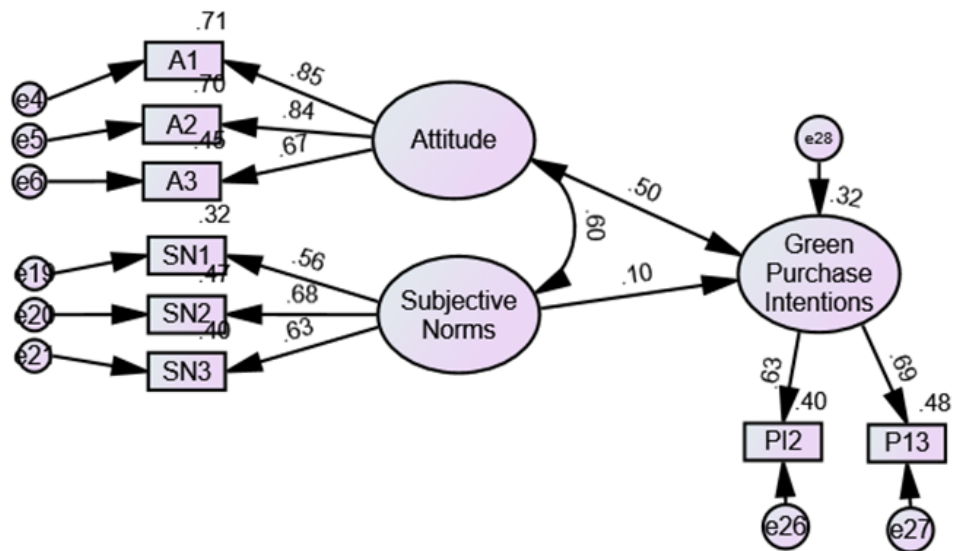


Figure J.1: Structural model for the Theory of Reasoned Action

Note: Squares represent the items; circles represent the error terms for the items, and the variables; ellipses represent the variables; values on the single-headed arrows from one variable to another represent the standardised beta; values on the single-headed arrows from ellipses to squares represent factor loadings; values on the double-headed arrows between variables represent inter-construct correlations.

Appendix K. Structural Model for the Theory of Planned Behaviour

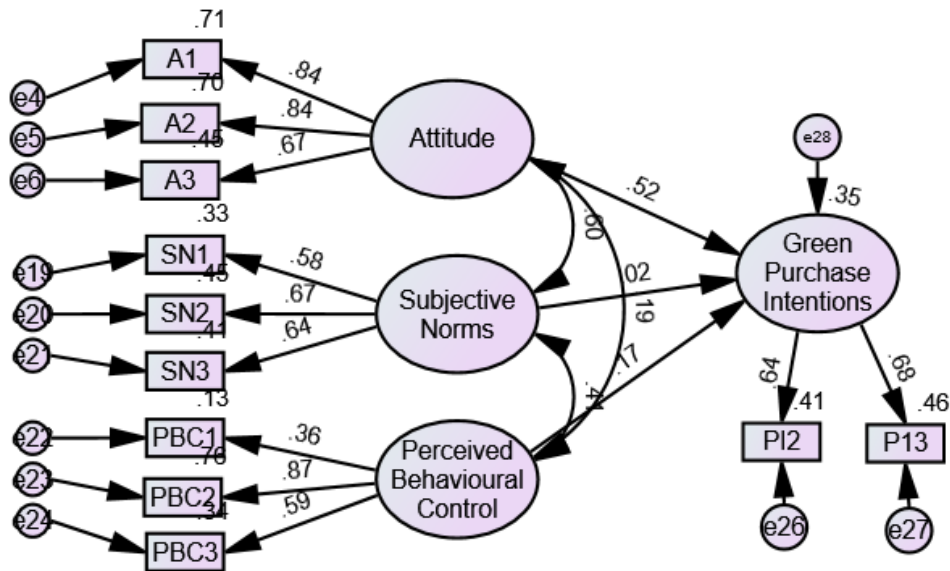


Figure K.1: Structural model for the Theory of Planned Behaviour

Note: Squares represent the items; circles represent the error terms for the items, and the variables; ellipses represent the variables; values on the single-headed arrows from one variable to another represent the standardised beta; values on the single-headed arrows from ellipses to squares represent factor loadings; values on the double-headed arrows between variables represent inter-construct correlations.

Appendix L. Scatter Plots Depicting Homoscedasticity

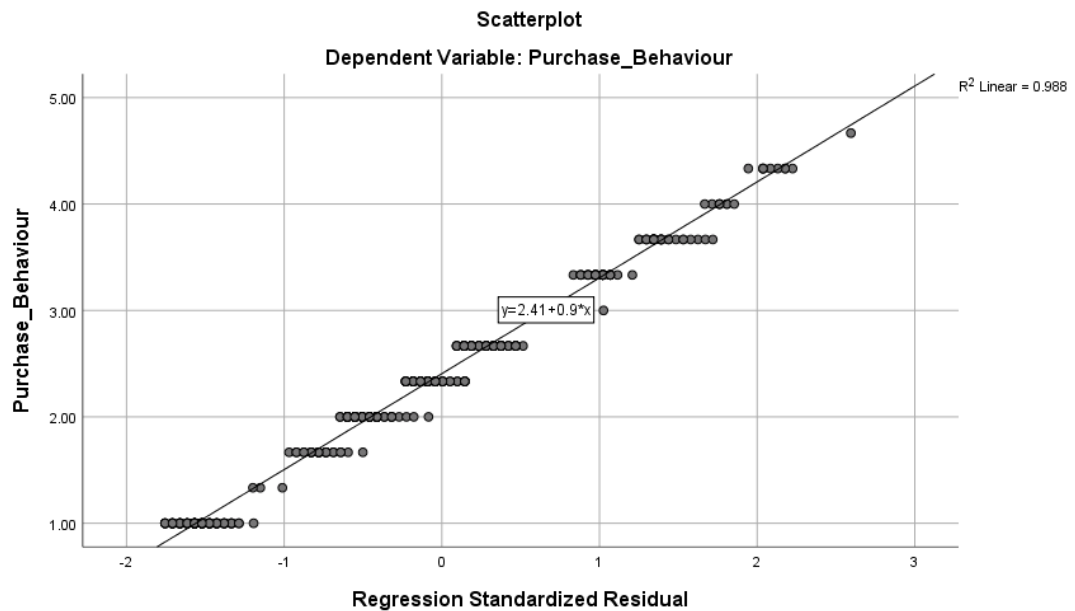


Figure L.1: Scatter plot for subjective norms

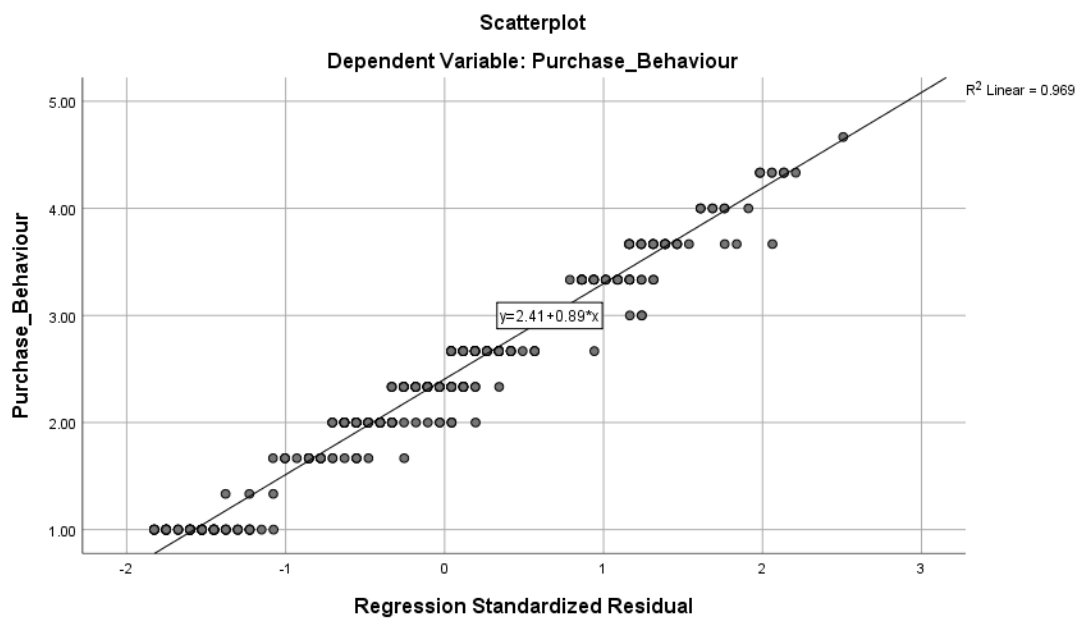


Figure L.2: Scatter plot for perceived consumer effectiveness

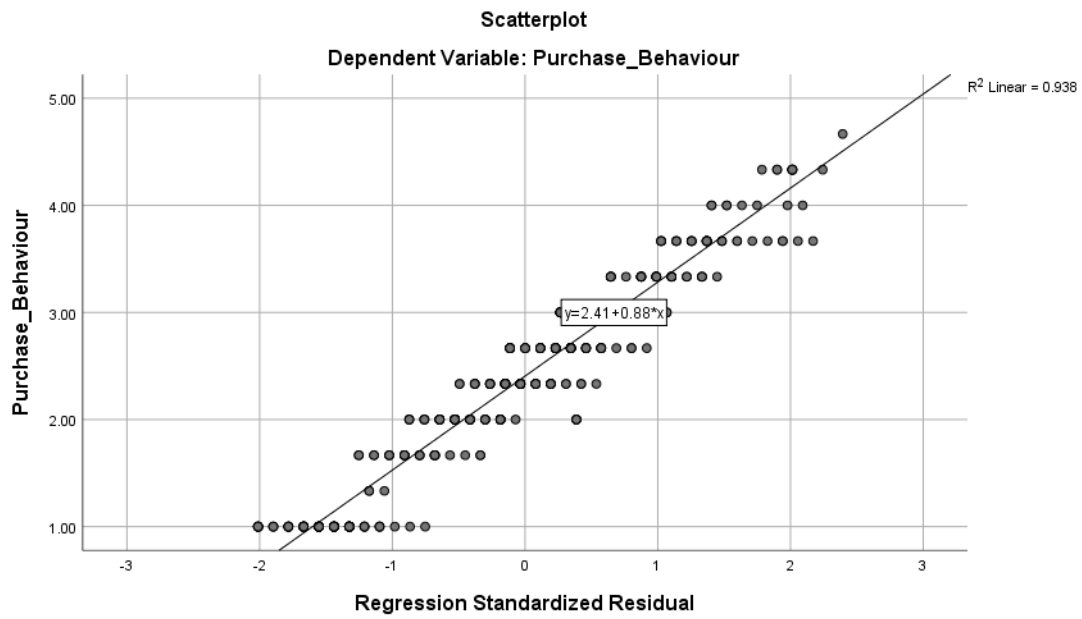


Figure L.3: Scatter plot for green purchase intentions

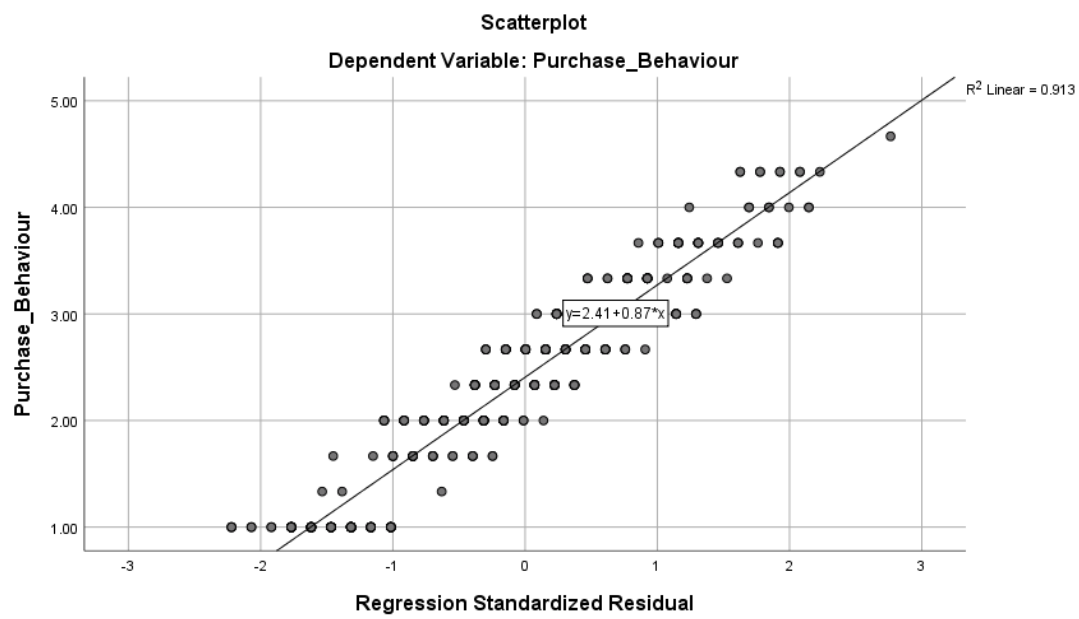


Figure L.4: Scatter plot for perceived behavioural control

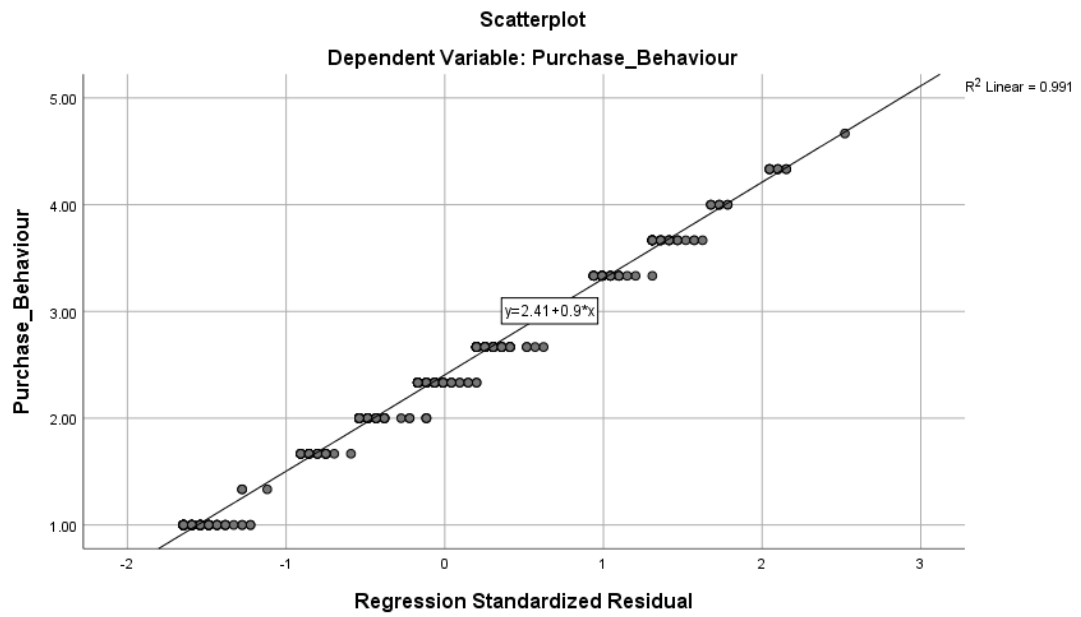


Figure L.5: Scatter plot for religiosity

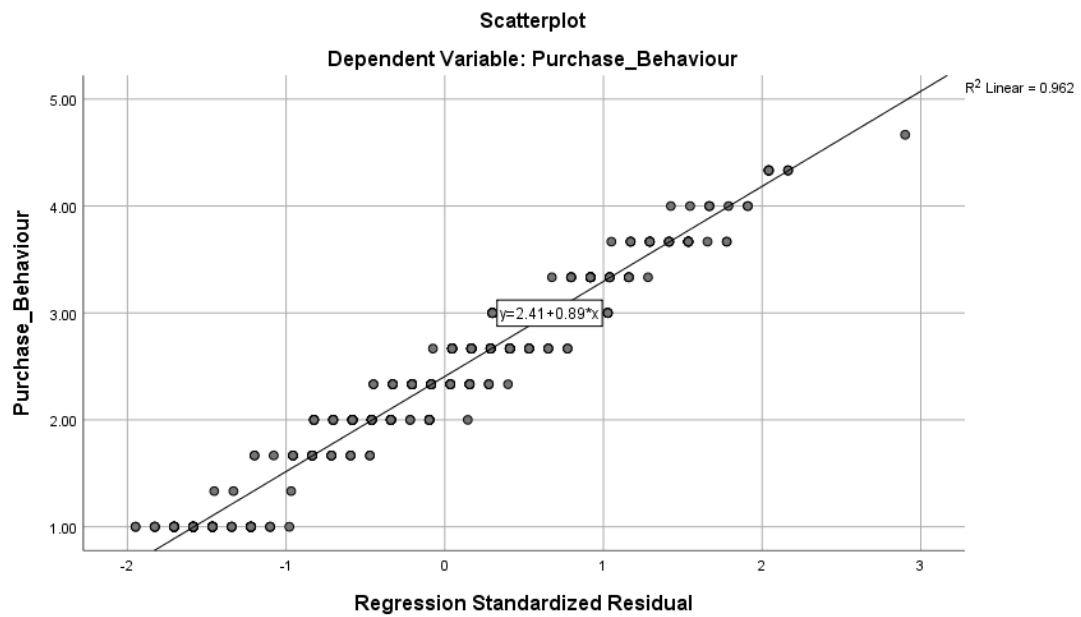


Figure L.6: Scatter plot for perceived quality

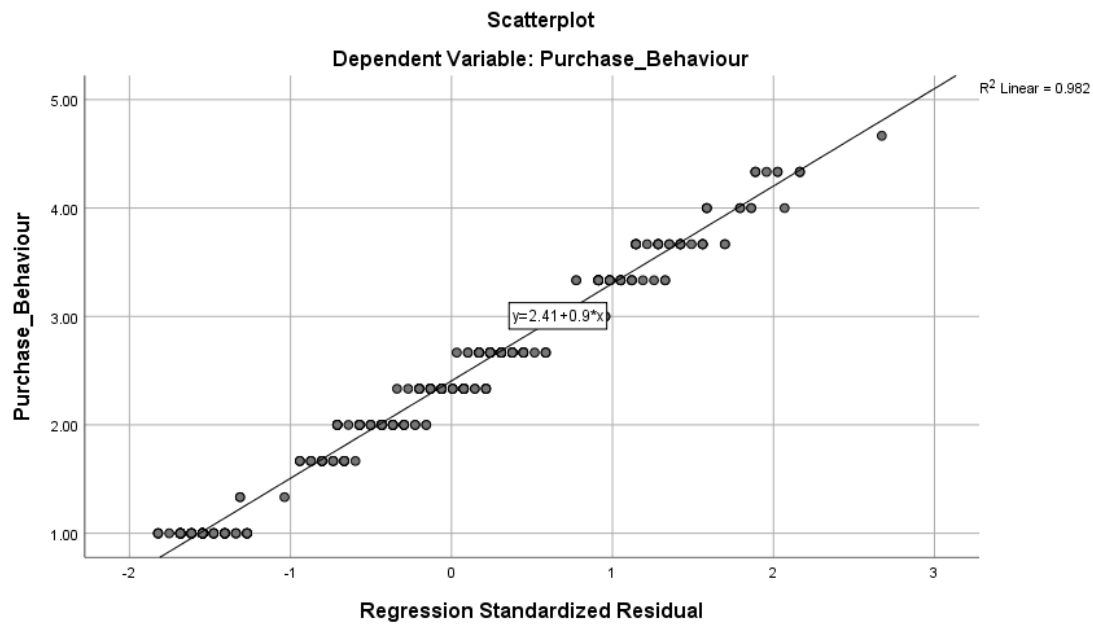


Figure L.7: Scatter plot for perceived price

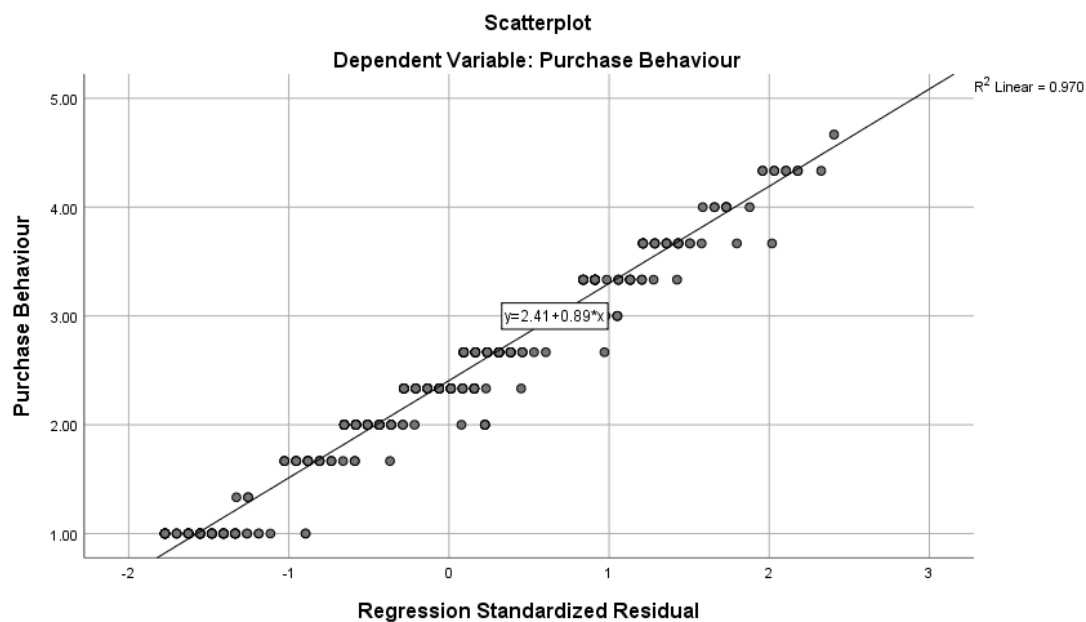


Figure L.8: Scatter plot for attitudes

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