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From Awareness to Action and The Role of Eco-Guilt and Price Sensitivity in Shaping Environmentally Friendly Choices in Pakistan's FMCG Sector

by

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CERTIFICATE OF APPROVAL

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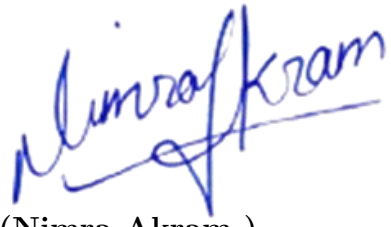

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Abstract

Growing environmental degradation and the increasing amount of plastic waste have made sustainable consumption an urgent global priority. The FMCG sector, due to its heavy reliance on single-use packaging, plays a central role in this crisis, particularly in Pakistan where weak waste management systems and scarce recycling infrastructure intensify the problem. Although environmental awareness is increasing, many consumers still find it difficult to move from conventional plastic packaging to eco-friendly alternatives. In this context, this study explores how consumer environmental awareness influences eco-guilt which in turn drive consumers toward environmentally friendly choices, while also investigating the moderating role of price sensitivity between eco guilt and eco friendly buying behaviour. Using the Stimulus–Organism–Response (S-O-R) framework, the research develops and tests a model where environmental awareness act as a stimulus, eco guilt serve as the internal emotional response and eco friendly choices represents the resulting behaviour. The data was gathered through a structured questionnaire, 509 responses initially were received and 452 responses were used after the screening and analyzed with the help of Smart PLS 4.1. The results indicate that environmental awareness has a significant positive effect on eco-guilt (β = 0.547, p < .001), and eco guilt significantly influences environmentally friendly choices (β = 0.468, p < .001). Moreover, price sensitivity negatively moderates the relationship between eco guilt and environmentally friendly choices (β = –0.113, p < .05), indicate that higher price sensitivity weakens guilt driven eco friendly purchasing decisions. The inclusion of emotional (eco-guilt) and economic (price sensitivity) constructs into the S-O-R framework, allow this study to offers a more nuanced understanding of sustainable behaviour in developing countries. Practically, the findings provide guidance to FMCG companies and policymakers to design sustainability initiatives that are cost effective and accessible, emphasizing that strengthening awareness while lowering the price barriers is necessary to enhance the adoption of eco-friendly choices in Pakistan.

Keywords: Consumer Environmental Awareness, Eco Guilt, Price Sensitivity, Environmentally Friendly Choices.

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Chapter 1

Introduction

Understanding consumer's environmentally friendly behaviour has been widely discussed in marketing literature (Khazraje, 2024). Sustainable consumption is influenced not only by industrial practices but individual purchasing decisions contribute to it as well (Afthanorhan, 2013; Chirilli & Marino, 2022). With environmental issues becoming more apparent, both globally and nationally, green consumption is something that would be required to support the sustainability in the long run (Rani, 2021).

Traditional theories explain environmentally friendly behaviour through rational factors such as intentions, attitudes, and perceived behavioural control (Niu, 2024; Dantas & Silva, 2023). However, it has been observed that environmental awareness does not always leads toward sustainable action (Fuzail, 2025). This indicates that cognitive factors alone are not sufficient to fully explain environmentally friendly consumer behaviour.

Recent studies highlights that emotions, particularly moral emotions, especially moral ones are very important in influencing pro-environmental behaviour (Jaskiewicz & Przepiórka-Blachuta, 2023). One such emotion is eco-guilt, which refers to the feeling of discomfort or unease that individuals feel when they believe their actions are harming the environment (Moslehpour et al., 2023). This emotional response can encourage individuals to choose environmentally friendly alternatives, as a psychological intermediary between awareness and action (Ogunbode

et al., 2022). However, this emotional influence does not happen in isolation (Rodrigo & Yatawara, 2024). In price-sensitive markets such as Pakistan, economic considerations may weaken the impact of eco guilt on sustainable purchasing behaviour (Nguyen et al., 2025). Even environmentally aware consumers may prioritize affordability over sustainability (Afridi & Khan, 2021). Therefore, examining the mediating role of eco guilt and the moderating effect of price sensitivity provides a more detailed theoretical explanation of consumer environmentally friendly purchase behaviour within the FMCG context.

Although sustainable consumption is primarily explained through consumer psychology, it is also deeply linked with wider industrial practices. As the environmentally friendly choices have become significant for the survival of the planet earth, the manufacturing of non environmentally friendly products causes pollution and carbon emissions, which in turn harms the health of humans, animals, and the planet (Rani, 2021). Buying eco-friendly products and consuming carefully helps decrease environmental damage and supports a healthier and more sustainable ecosystem (Al-Kumaim et al., 2021).

Building on this, one area where such responsible action is urgently needed is in controlling plastic pollution as the plastic pollution is one of today's major environmental concern (Horton, 2022). Plastic is widely used in everyday life in the form of packaging, waste from plastic bags, bottles, food packaging, straws, and takeaway containers, they are a major contributor to plastic pollution (Piracci & Bartolini, 2023).

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form of packaging, waste from plastic bags, bottles, food packaging, straws, and takeaway containers, they are a major contributor to plastic pollution (Piracci & Bartolini, 2023). According to United Nations Environment Programme (UNEP), around 500 billion plastic bags are used annually across the globe (Bundela & Kumar, 2022), almost 47% of all plastics is made for packaging (Williams & Rangel-Buitrago, 2022), each minute nearly 1 million plastic bottles are purchased. 50% of plastic used by consumer are single-use plastics (Bundela & Kumar, 2022).

Additionally, it was observed that, FMCG in the retail industry is the major contributer of the single use plastic and packaging material (Dantas & Silva, 2023). World's top three fast moving consumer good companies Coca Cola, Nestle, and PepsiCo produced around 138 million metric tons of plastic from 2000 to 2023. (Biyani et al., 2025).

Furthermore, the scale of plastic pollution is growing at worrying rate. In recent decades, global plastic production has increased dramatically from 2 million tons in 1950 to 368 million tons in 2019, if current trends continue, plastic production is likely to exceed 1 billion tons annually by 2050 (Omidoyin et al., 2024).

In a similar vein, it has been documented that the extensive use of the plastic on a daily basis by household adds to the social and economic issues in an economy (Walker, 2022). Based on reports from the United Nations Environmental Program (UNEP) and the United Nations Environment Assembly (UNEA), plastics in the environment annually leads to an economic loss of $19 billion globally, causing concerns for long-term environmental sustainability and the fulfillment of Global Goals (Xia & Chen, 2023).

Even more concerning is where it ends up, approximately, 79% of this plastic ends up in landfills, ocean and the environment (Banu, 2020), where it lasts for centuries, releasing significant quantities of chemical pollutants that badly impact the ecosystem (Bidashimwa & Hunter, 2023). Beyond waste, plastic is even harmful during its manufacturing, by releasing toxic chemicals into air and water (Dantas & Silva, 2023).

Alarmingly, plastic is no longer restricted to waste streams. Researchers have discovered plastic particles in in rainwater (Brahney, Hallerud, et al., 2020), deep

oceans on top of Mount Everest (Napper & Thompson, 2020), in the Arctic snow (Iftikhar & Ahmed, 2022a) and even in human blood (Leslie, Vethaak, et al., 2022) and placenta it is also present in the water we drink (Stoett et al., 2024), in a food we consume, it's everywhere (Shelby Browning).

Moreover, the reliance on plastics, especially single-use items, due to its low cost, flexibility, durability, and other advantageous has resulted in a significant increase in plastic waste, in 2020 plastic consumption reached almost 547 million tons globally out of which 86% is virgin plastic (Pottinger, Geyer, et al., 2024), this results in a major environmental pollution (Walker, 2022), however only 9% of this waste is ever processed for recycling (Houssini & Le Treut, 2025).

Moving toward South East Asia, this problem is even more severe in developing countries like Pakistan, where poor waste management, low recycling infrastructure and weak regulations causing plastic waste to increase by 15% per year (Iftikhar & Ahmed, 2022a). Globally, South Asia is ranked second-largest contributor of plastic waste, generating almost 334 million metric tons of solid waste per year (Ahmed & Ali, 2023), and most of this is from drink packaging and food. Being a major user of single-use packaging, the food and beverage sector plays a significant role in addressing plastic pollution (Phelan et al., 2021).

Specifically, Pakistan's plastic waste problem is particularly serious. Pakistan has the highest percentage of mismanaged plastic in South Asia, around 55 billion plastic bags per year are produced (Mukheed & Khan, 2020). According to United Nations Development Program (UNDP) report around 3.3 million tonnes of plastic is wasted generated annually in Pakistan and every month produces almost 275,000 tons of plastic waste (Amir & Farooq, 2025), with 70% ending up in landfills or being dumped in open spaces, causing soil and water contamination, major contributors include plastic grocery bags, food wrappers, plastic bottles, plastic straws plastic bottle caps and stirrers (Manzoor & Panhwar, 2023).

In response to such alarming environmental damage caused by plastic bags, many countries have enacted legislation and levies aimed at decreasing consumer plastic usage. More than 127 national governments have adopted such tools to deal with this issue (Cai, 2023). Nations such as China, Japan, Germany, and South Korea

have started adopting circular economy which aims to reduce the detrimental environmental effects of product packaging (Thapliyal & Kumar, 2024). Such changes indicate the growing global urgency for environmentally friendly consumption to mitigate long-term environmental harm. Beyond government efforts, consumers around the world are becoming increasingly aware of the environmental damages caused by plastic pollution. Media coverage, environmental education and social campaigns have raised public awareness of growing plastic waste and pollution problem (Jirasit, 2024). Consumers are becoming more aware of the harmful impacts of packaging waste on the environment, they now look for products with eco friendly packaging before purchasing, because of this changing consumer preferences, companies are modifying their products to be more environmentally friendly (Mahmoud et al., 2022).

Consumers have a central role in driving demand for eco-friendly packaging. These consumer choices push companies to innovate in packaging (Chirilli & Marino, 2022). Responding to this demand many global and international brands like McDonald's and Walmart have started using eco-friendly packaging (Rani, 2021).

Similarly, this trend is also emerging in Pakistan, where awareness about plastic waste, pollution and climate change is increasing through social media and education especially among urban, educated people making them more likely to buy environmentally friendly products (Fuzail, 2025). Many now prefer packaging that is reusable, recyclable, safe and eco-friendly (Dantas & Silva, 2023). This reflects global trends but is intensified locally by limited eco-friendly packaging options and high price sensitivity, creating a gap between eco friendly intentions and actual buying habits (Fuzail, 2025).

Even though research on environmentally friendly choices are increasing, it was noted that a many earlier studies were carried out from a business perspective with a minimal attention given to consumer side, most studies focuses on the role of brands and marketing campaigns in influencing consumers green purchase decisions through green marketings campaigns (Balaskas & Paraskevas, 2023; Nekmahmud & Fekete-Farkas, 2022; Ktisti et al., 2022), with little attention given to

consumers who become eco conscious through their own observations and experiences and want green packaging products. Research proves that environmental awareness and eco guilt hold significance importance in shaping environmentally friendly behaviour, but majority of existing literature focuses on these variables individually and with other vaiables like green marketing, environmental cognition, connectedness to nature ,social and personal norms (C. Xie & Wang, 2022; Haq & Ahmed, 2021; Jaskiewicz & Przepiórka-Blachuta, 2023; Canoğlu & Ülkü, 2025; Boermans & Jansen, 2024) limited literature exists that explore the impact of environmental awareness and eco guilt on consumer green purchase behaviour but none of the literature has explored all these variables in sequential manner. Especially, moderating role of price sensitivity remain underexplored under a single study.

Therefore, these findings provide the basis for the conceptual model of this study: environmental awareness leads toward eco guilt which encourages environmentally friendly choices with the moderating role of price sensitivity.

The purpose of this research is to understand the factors that influence consumers intention to buy FMCG products with environmentally friendly packaging as well as to understand the barriers that prevent wider adoption. This study will help identify what drives consumers to choose eco friendly products and the barriers they face, providing meaningful information to businesses and policymakers about their customers and ways to make their products more eco-friendly and accessible in Pakistan.

1.1 Gap Analysis

1.1.1 Theoretical Gap

Many prior studies have applied Theory of Planned Behaviour by Niu (2024) and Value-Belief-Norm Theory by Stern 1999 Dantas and Silva (2023) as a theoretical framework to explain environmental friendly behaviour. However, many earlier researches treated environmental awareness, eco-guilt, and environmentally friendly

choices separately (P. Xie & Zhang, 2024; Fuzail, 2025; Mahmoud et al., 2022; Niu, 2024) And have been rarely been embedded into a cohesive behavioural model such as Stimulus Organism response (SOR).

Very few studies have examined the mediating role of eco-guilt between environmental awareness and environmentally friendly choices, and the moderating role of price sensitivity in this relationship in FMCG contexts. This highlights a theoretical gap in understanding why awareness does not always translate into environmentally friendly action in cost-sensitive markets like Pakistan.

1.1.2 Contextual Gap

The adoption of environmentally friendly choices has significant attention globally as an important mean aimed at reducing ecological impacts and promote environmental sustainability (Khazraje, 2024). However, in Pakistan, the analysis of factors influencing the adoption of environmentally friendly choices is still limited.

Most of the studies on environmentally friendly choices have been conducted in developed countries such as the UK, Australia and EU (Tamboli & Hande, 2023) Consumer Preference for Eco-Friendly Products in Relation to Sustainability Awareness, 2023), (Piracci & Bartolini, 2023; Al-Kumaim et al., 2021), Fostering a Clean and Sustainable Environment through Green Product Purchasing Behavior: Insights from Malaysian Consumers' Perspective, 2021), (Balaskas & Paraskevas, 2023) with stronger regulatory framework, recycling system, and consumer purchasing power are stronger.

All of the studies mentioned above have been conducted in a developed country, however the behavioural influence of consumers of developing countries are not same (Suhaeni Suhaeni, Factors influencing green, environmentally friendly consumer behaviour, 2024).

However, it has been noted that gap exist in the literature concerning these mentioned dimensions, and need scholars for further research to shed light on these dimensions across different countries and cultural context so that the more conclusive results can be reached, especially since the scholars have found contradictory

findings in different countries, therefore more research is needed in different countries and cultural context especially in emerging economies.

1.1.3 Managerial Gap

As people become more mindful of the effects of their buying decisions on the environment, they have also started to demand eco friendly products and services. Businesses who present themselves as environmentally friendly may out perform their rivals, broaden their customer base, and enhance their reputation as caring corporations (Tamboli & Hande, 2023).

Another study by Islam and Ferdous-Elahi (2024) revealed that the FMCG sector's reliance on plastics and Styrofoam has intensified the environmental damage, but increasing awareness is changing the game. Adopting eco-friendly packaging and sustainable practices now enable companies to satisfy consumers, cut costs, and gain a competitive edge.

Furthermore, rising demand for environmentally friendly choices are fostering the emergence of a new green industry, generating numerous employment opportunities. The United Nations Environment Programme has estimated that the market for environmentally friendly products doubles annually with the value of USD44 trillion almost more than half of global GDP (Barbu et al., 2022).

Similarly, a Nielsen survey highlighted that 66% of consumers are willing to pay extra for sustainable brands globally, and regulations such as EU Packaging Waste Directive push CPG companies to implement eco-friendly packaging. Addressing these challenges help reduces ecological harm and meets consumer and regulatory expectations (Hamdi, 2024).

Despite these clear growing market opportunities and consumer demand, managers lack significant guidance to fully capitalize on these trends. Although consumers increasingly preference for eco-friendly products and sustainable packaging is increasing, such options are still limited in the market, creating a gap between consumer preferences and available offerings. Bridging this gap will help businesses to better meet consumers' expectations, strengthen their brand image, and facilitate

the expansion of the green industry, fostering sustainability and new employment opportunities.

1.2 Problem Statement

Overconsumption and improper disposal of waste deposits in the environment has been an emerging global concern. The extensive use of a single-use plastic packaging, especially within fast moving consumer good (FMCG) industry is one of the primary factor contributing to this problem. These commodities are bought regularly and produce a lot of packaging waste most of which ends up in a landfills and natural environments. The strains of such consumption tendencies on the environment are aggravated by the fact that in developing countries like Pakistan, there is a lack of recycling facilities, poor waste disposal systems, and the growing demand of easy to use consumer goods.

Over the past couple of years, environmental awareness among consumers has been on the rise as individuals gain more awareness on environmental problems like plastic pollution, climate change, and resource depletion. The increased access to information provided by the media, educational programs and environmental campaigns has helped people to realise the environmental impact of their consumption behaviour. But despite this increased awareness, the act of making environmentally responsible purchases is not always evident in the market. A large number of consumers still buy products that are traditional even when they know the affect they have on the environment. This is a discrepancy between environmental awareness and real buying behaviour, which points out a serious problem of encouraging sustainable consumption.

A potential reason behind this problem is the psychological and economical mechanisms which affect consumer decision-making. Emotions like the eco-guilt can be experienced where people become aware that their consumption patterns amount to environmental degradation. These emotional reactions might lead to the desire of consumers to rethink their buying decisions and switch to those that are less harmful to the environment. Simultaneously, economic considerations also play

a significant part in consumer behaviour. Many consumers may not want to use products that are environmentally friendly because these products are felt to be costly when compared to the traditional products. Consequently, price sensitivity can be a significant factor in determining whether environmentally conscious consumers can convert their environmental concerns into environmental responsible purchase decisions.

Despite the fact that environmental awareness, emotional reactions, and economic factors all play a role in consumer decision making, how the three interact to make environmentally friendly decisions is not well comprehended. Specifically, there is no clarity on how the environmental awareness brings about the eco-guilt and how the emotional reaction is affected by the environmentally friendly buying behaviour. Moreover, the magnitude of how price sensitivity affects these relations has not been well studied relative to consumer behaviour in the emerging economies. The significance of understanding these relationships is especially at the market level where environmental issues have been a major concern and a consumer has a limited amount of money to spend in buying a product.

Thus, it is necessary to investigate how environmental awareness informs eco-guilt and environmentally friendly consumer decisions, and explore the moderating effect of price sensitivity in this association as well. Through these interactions, the current study will give a more in-depth insight into the cognitive, emotional, and economic forces influencing the development of environmentally responsible consumption behaviour in the FMCG industry. The findings of this research will contribute to the development of more effective strategies for encouraging environmentally friendly consumer behaviour and reducing the harmful environmental impact of everyday consumption.

1.3 Research Objectives

i. To examine the effect of environmental awareness on eco guilt.

ii. To examine the effect of eco guilt on environmentally friendly choices.

iii. To investigate the mediating role of eco guilt between consumers environmental awareness and environmentally friendly choices.

iv. To investigate the moderating effect of price sensitivity in a relationship between eco-guilt and environmentally friendly purchase choices.

1.4 Research Questions

i. Does environmental awareness significantly influence eco guilt?

ii. Does eco guilt significantly influence environmentally friendly choices?

iii. Does eco-guilt mediate the relationship between eco guilt and environmentally friendly choices?

iv. Does the price sensitivity moderate the relationship between environmental guilt and environmentally friendly choices?

1.5 Significance of the Study

This study is significant because it focuses on one of the world's most pressing environmental issues i.e the rising dependence on plastic packaging in the FMCG sector. Plastic has become as one of the most detrimental threats to the sustainability and health of planet Earth, and surprisingly, almost half of all plastic produced is solely used for packaging (Williams & Rangel-Buitrago, 2022).

Therefore, shifting toward environmentally friendly packaging in Pakistan is important to combat the rising problem of plastic pollution, as packaging is the largest user of plastic (Piracci & Bartolini, 2023). The use of environmentally friendly packaging helps mitigate the problem of plastic waste and will help reduce the burden on marine, landfills and promote healthier ecosystems (Hamdi, Sustainable Packaging Trends in the Consumer Packaged Goods Market, 2024).

By promoting eco-friendly packaging, businesses can also play an important role in supporting healthier ecosystems by mitigating plastic waste.

Furthermore, at the global level most research on environmentally friendly packaging has been done outside Pakistan (Anna (Anya) (Phelan et al., 2021; Thapliyal & Kumar, 2024; Hamdi, 2024) Sustainable Packaging Trends in the Consumer Packaged Goods Market, 2024) (Piracci & Bartolini, 2023; Mahmoud et al., 2022) limiting its generalizability. Very few studies have investigated the demand for environmentally friendly FMCG packaging in Pakistan, particularly in the framework of Stimulus-Organism-Response (SOR). Therefore, this study offers a context-specific insights into consumer behaviour, helping both businesses and policymakers in understanding the local consumers preferences and motivations.

From a practical standpoint, this study helps bridge the gap between consumer intentions and actual options available in the market. It provides FMCG companies with insights to meet rising sustainability demands by making eco-friendly packaging both attractive and accessible, and building long-term brand trust in a competitive market.

In addition, these findings provide guidance for businesses to develop and market eco-friendly packaging that aligns with consumer expectations, strengthening both brand loyalty and competitiveness in the FMCG sector. Research shows that customers are more satisfied with eco friendly packaging (Rani, 2021). By connecting environmental awareness, eco-guilt, and consumer choices, this study advances broader aim of reducing plastic pollution and fostering environmental sustainability in Pakistan.

This study is also socially significant as it emphasizes the impact of everyday purchasing decisions in tackling environmental problems. It not only supports sustainability efforts in Pakistan but also contributes to global initiatives to reduce plastic waste, supporting climate resilience, and ensuring a healthier future for human and the environment. Taking care of the planet earth is essential for our own and future generations' survival. The world can be a better place for everyone if we take our responsibility for reducing our own environmental footprint (Tamboli & Hande, 2023). Informed buying decision and ethical business practices, can make Pakistan to move toward a more sustainable and environmentally conscious future.

1.6 Underpinning Theory

Scholars worldwide have employed various theoretical perspectives to underpin studies of eco friendly consumer choices. Some employed theories like the Theory of Planned Behaviour (TPB), Norm Activation Theory (NAT), and the Value Belief Norm Theory (VBN) (Niu, 2024; Nicolau & Christino, 2025), (Dantas & Silva, 2023). However, limited research has been conducted concerning the Stimulus Organism Response (S-O-R) model in the context of eco friendly FMCG consumption.

In the context of this study, environmental awareness serves as an external stimulus. This stimulus strongly effects consumers internal emotional states, which are reflected eco-guilt, ultimately shaping their intentions and attitudes to make environmentally friendly choices. Research shows that people with higher awareness and concern about plastic pollution are more intended to avoid plastics. Ultimately, these intentions are reflected into actual consumer actions, such as reducing the use of single-use plastics (Gu & Zhang, 2023).

Furthermore, the S-O-R model have bee widely employed in the studies of consumer behaviour (F. Wang & Wang, 2024) however, it has rarely been applied to understand the adoption of environmentally friendly choices in the FMCG sector. This research enhances the model by broadening its scope to include eco-guilt as a mediator and price sensitivity as a moderator. Many scholars acknowledged emotional states like guilt as important internal responses and have successfully integrated them into the S-O-R framework (Jiang & Jin, 2023).

This study employs the S-O-R model to gain deeper understanding the factors affecting environmentally friendly consumption in Pakistan. Consumer environmental awareness, serves as a stimulus, plays a crucial role in shaping eco-guilt. Eco-guilt, as the internal organism, serves as a mediator between awareness and environmentally friendly choices. The behavioural response is reflected in environmentally friendly choices with price sensitivity moderating the extent the extent to which consumers act on their guilt.

By applying S-O-R framework, the study offers a comprehensive understanding of how environmental awareness and internal emotions like guilt drive consumer's eco friendly choices in the FMCG sector.

It contributes to the existing body of knowledge by emphasizing the importance of cognitive and emotional drivers in fostering eco friendly consumer choices, enabling marketers and managers to better respond to consumer wants.

1.7 Study's Scope

The scope of this thesis involves analyzing the key drivers behind the adoption of consumers' environmentally friendly choices in the FMCG sector in the Pakistani context. For this purpose, behavioural, psychographic, and demographic segmentation was employed to gather data from consumers who frequently purchase daily use FMCG products. This approach enabled a thorough understanding of consumers purchasing behaviours, values, lifestyle, , and price sensitivity, providing a valuable insight into their preferences and motivations regarding eco-friendly consumption.

The study specifically examines the effects of three important variables consumer environmental awareness (CEA), eco-guilt (EG), and the moderating effect of price sensitivity (PS) on the adoption of environmentally friendly choices (EFC). In the S-O-R framework Consumer environmental awareness serves as a stimulus, eco-guilt as the mediating organism, and environmentally friendly choices represents the behavioural response. The research aims to examine how these factors influence consumers eco friendly purchasing decision and explore the possible moderating role of price sensitivity between eco-guilt and consumers eco friendly choices.

This study aims to provide valuable insights to stakeholders, including FMCG managers, policymakers, marketers, and academics, by providing insights into the psychological and emotional drivers that encourage consumer's environmental conscious purchasing, helping businesses developing effective green marketing approaches and promote environmental sustainability.

1.8 Structure of Thesis

This thesis comprises of five chapters:

1.8.1 Chapter 1

This chapter provides the reader with a brief outline on the environmentally friendly choices in Pakistan. At first, this chapter established the introduction for this thesis comprising of the theoretical background. Then, problem statement is explained, followed by the Research Gaps leading towards research questions and research objectives for this study. After that, significance in terms of theoretical contribution were presented followed by the underpinning theory and study's scope at the end of this chapter.

1.8.2 Chapter 2

This chapter sets the scene for reviewing relevant literature, through a stepwise process. At first, the significance of environmentally friendly choices was established. Secondly, the literature included a discussion on the hypothesis, four hypotheses were established each explaining the relationships between our independent (environmental awareness) and a dependent variable (environmentally friendly choices) followed by a mediating variable (eco guilt). Next the chapter includes a conceptual framework. Finally, a summary was established to end this chapter.

1.8.3 Chapter 3

Third chapter is research methodology. It describes the study's sample population (participants from Rawalpindi and neighbouring urban areas), sampling technique (purposive sampling), and the use of PLS-SEM for data analysis. The chapter also details a comprehensive definition of each variable, the hypothesized model, and presents the expected study's.

1.8.4 Chapter 4

This chapter primarily focuses on quantitative analysis, specifically utilizing both the structural and measurement models. The analysis includes conducting various tests such as convergent validity, discriminant validity, and internal consistency. The SMART PLS 4.1 program was used to carry out these testing.

1.8.5 Chapter 5

This chapter encompasses in-depth discussions, robust conclusions, and insightful implications derived from the research findings pertaining to the research questions and hypotheses. The discussions highlight the noteworthy contributions made to the existing theory and shed light on the implications for supervisory practices. Furthermore, the chapter concludes by summarizing the key findings of the research and offering a well-grounded recommendation for future research opportunities.

Chapter 2

Literature Review

2.1 Introduction

This chapter provides a comprehensive review of both theoretical and empirical literature related to psychological and behavioural drivers of eco friendly consumer behaviour. Using the Stimulus Organism Response theory (SOR) model, the chapter examines how environmental awareness serves as an antecedent that influence eco-guilt, which subsequently guide consumer toward environmentally friendly choices. Furthermore, this chapter discussed the established hypotheses in the context of existing literature. These derived hypotheses were empirically tested in coming chapter, enhancing the overall findings of the research.

2.2 Environmentally Friendly Choices

Over the years, humanity's contribution to environmental degradation has exceeded the planet's capacity for sustainable recovery. Rapid industrialization, overconsumption, and waste generation have intensified the ecological crisis, making sustainability an urgent global concern. Yet, despite these challenges, a hopeful trend has emerged "green consumerism", also known as eco-conscious or environmentally friendly behaviour. This shift indicates that more people are becoming

aware of environmental impacts and are trying to reduce it by choosing sustainable alternatives (Ogiemwonyi, 2024).

In this context, environmentally friendly products have gained significant importance as they are designed to minimize environmental impact by using renewable materials, recyclable packaging and responsible production practices. Their goal is to meet consumers needs while protecting the environment and ensuring social well-being (Khazraje, 2024) Such initiatives motivates both producers and consumers to reconsider their consumption habits and adopt behaviours that align with environmental sustainability.

A significant contributor to this transformation is the Fast-Moving Consumer Goods (FMCG) industry. As one of the leading industries worldwide, it manufactures and markets everyday items such as food, beverages, household and personal care products. However, due to its large-scale operations and heavy reliance on natural resources, the FMCG industry also exert a considerable impact on the environment (Nwabekee & Yusuf-Ahmed, 2024).

Research further highlights that FMCG companies can contribute significantly in achieving global sustainability targets. By offering eco-friendly products and packaging, they directly support Sustainable Development Goal (SDG) 12 "Responsible Consumption and Production" and SDG 13 "Climate Action" (Vuong & Nguyen, 2024). These efforts complement the rise in eco-conscious consumer behaviour, highlighting the need for collaboration between businesses and individuals to achieve long-term sustainability.

Globally, sustainable consumption has gained momentum as governments and industries acknowledge its role in combating climate change (Khanna et al., 2022). Studies show that when consumers choose eco friendly products, they play an active role in supporting the United Nations Sustainable Development Goals (SDGs), especially those related to responsible consumption and environmental protection (Rawat & Singh, 2023). Thus, aligning consumer behaviour with ecological priorities not only reduces environmental damage but also advances global sustainability efforts.

However, achieving this transition requires not just awareness but it also demands responsible purchasing behaviour. Around 40% of total environmental damage worldwide stems from routine household consumption, mainly due to excessive packaging waste, unsustainable materials, and short product lifespans. Therefore, individuals have an important role to play in reducing environmental harm. Studies suggest that by making mindful and eco-friendly choices, consumers can significantly reduce their environmental footprint (Sabri, 2021).

In the Pakistani context, the need for sustainable and environmentally friendly choices is especially pressing. As the country is confronted with serious environmental challenges such as pollution, poor waste management, and deteriorating air quality. According to the World Health Organization (WHO), Pakistan holds third highest global rate of air pollution-related deaths, with Lahore, Karachi, Peshawar, and Islamabad being the most effected largely due to industrial emissions, waste burning and vehicular pollution (Bilal et al., 2021). As a result, public concerns for sustainability has grown, particularly among younger consumers who are increasingly shifting toward environmentally friendly products with a growing emphasis on sustainability in the FMCG sector (Basu & Roy, 2024).

In the light of these circumstances, it is essential to explore the psychological and economic factors influencing eco-friendly consumer behaviour in Pakistan. Although environmental awareness encourages pro environmental behaviour, emotions like eco-guilt can further push individuals to make sustainable choices. At the same time, price sensitivity may act as a barrier, especially among middle and lower-income segments where affordability often outweighs ecological concerns.

Therefore, it is essential to understand how environmental awareness, eco-guilt, and price sensitivity interact to shape consumer decision-making. This study aims to build upon these perspectives to explore the factors that drive or hinder eco friendly purchasing behaviour in Pakistan's FMCG sector.

In light of the discussion above, the next section focuses on explaining the research hypotheses, which are proposed based on these conceptual relationships between environmental awareness, eco-guilt, price sensitivity, and eco friendly buying decisions.

2.3 Consumer Environmental Awareness and Eco-Guilt

In recent years, growing concern about pollution, climate change and rapid resource depletion has heightened public awareness of the environment. Environmental awareness refers to individuals' acknowledgement of ecological threats and their understanding of how one's own actions impact the natural environment. It is considered a significant predictor of eco friendly consumer behaviour, as knowledge often fosters sensitivity toward environmental consequences and promote environmentally friendly attitudes (Han, 2021). However, beyond just providing information awareness also evokes emotions that drive behavioural change (Ogunbode et al., 2022).

Among these emotional responses, eco-guilt has proven a powerful motivator of eco friendly behaviour. Eco-guilt refers to the negative emotion people feel that arises when they feel they are responsible for environmental harm (Nielsen & Gössling, 2024). When people realize how their daily consumption contributes to environmental degradation, they often feel a sense of guilt that compels them to act more responsible manner. This emotional mechanism transforms cognitive awareness into meaningful moral engagement, bridging the gap between awareness and action.

Empirical research repeatedly confirms this connection between awareness and guilt. Research shows that greater environmental awareness boost consumers willingness to act more sustainably by increasing their intention to buy eco-friendly products. As public concern grows over issues such as pollution, waste management and extreme weather consumers are shifting from passive recycling toward actively avoiding harmful products and seeking out eco friendly alternatives (Lee & Kim, 2023). In this way, awareness not only enhances intellectual understanding and emotional commitment to environmental protection.

Several studies further validate the close link between awareness and eco-guilt. For instance, (Nielsen & Gössling, 2024) found that people with higher awareness of

the environmental consequences of their actions are more likely to experience eco-guilt. Similarly, (Moghavvemi et al., 2020) reported that urban consumers who are aware of pollution and the negative impacts of unsustainable products often experience stronger guilt, which subsequently drives them toward pro-environmental behaviour. Supporting this view, (Sun & Tang, 2022) observed that people with greater environmental knowledge experience heightened guilt when engaging in unsustainable practices, as awareness amplifies self-accountability.

Additional evidence from (Unger-Plasek & Tóth, 2024) reinforces this relationship, showing that greater awareness of ecological harm caused by consumption evokes eco-guilt a moral emotion that motivate individuals to shift toward environmentally friendly choices.

Likewise, (Zameer & Yasmeen, 2022) emphasized that awareness inspires people to make eco-friendly choices in the long term by developing a sense of moral duty to protect the environment and prevent further harm. Thus, awareness not only informs consumers but also fosters emotional involvement, turning passive knowledge into active responsibility.

In the Pakistani context, this relationship between environmental awareness and eco guilt is particularly pronounced. With visible environmental crises such as plastic waste accumulation in Karachi and smog in Lahore, consumers are constantly confronted with tangible signs of environmental damage (Ahmad & Ali, 2025) through these live experiences individual become more environmentally aware and feel eco guilt upon realizing their own role in contributing to pollution. Consequently, awareness serves as both source of information and emotional stimulus fostering consumers' reflection, moral engagement, and sense of responsibility (Nielsen & Gössling, 2024).

Overall, the literature clearly indicates that environmental awareness not only increases consumers understanding but also triggers moral emotions such as eco-guilt, which play a central role in shaping consumers eco friendly behaviour. As individuals become more aware of how their consumption pattern harm the environment, they develop a sense of personal responsibility that motivates them to adjust their behaviour with environmental values. This awareness driven guilt

motivates consumers to prefer environmentally friendly products, reinforcing the psychological link between knowledge, feelings, and action.

Therefore, it is hypothesized that:

H1: Consumer environmental awareness has a positive influence on eco-guilt.

2.4 Eco-Guilt and Environmentally Friendly Choices

Humans have always shared a strong emotional bond with the natural environment (T. Yue & Wang, 2022), perceiving nature not merely as a resource but as a fundamental aspect of life itself. As many well-known psychological theories assert that emotions are central to motivation and action, studies have found that emotions strongly drive pro environmental behaviour (Jaskiewicz & Przepiórka-Blachuta, 2023). Adam Smith's Theory of Moral Sentiments also highlights that human behaviour is directed by sympathy and sense of moral responsibility, suggesting that markets and individual choices must be guided by moral emotions rather than self interest alone (Niu, 2024).

Within this emotional framework, eco-guilt stands out as an important driver of pro-environmental behaviour. Eco-guilt is a negative moral emotion that arises when people perceive themselves or humanity as responsible for environmental degradation. It arises when people recognizes the harm caused to the nature and feel remorse for not taking action to prevent it, developing a sense of moral debt toward the environment (Niu, 2024). Jaskiewicz and Przepiórka-Blachuta (2023) expanded the definition of environmental guilt to cover the existential concerns: awareness of ecological consequences of contemporary lifestyles on the future world. This extended definition addresses not only current environmental concerns but also the lasting impact of modern human activities on the environment.

Importantly, guilt is not solely a negative emotion. When experienced moderately, it serves a guiding moral force that motivates individuals to correct their behaviour and make better choices (Unger-Plasek & Tóth, 2024). In environmental contexts,

this means that when individual feel guilty about harming the planet, they are more likely to engage in pro environmental behaviours such as purchasing sustainable products, reducing plastic use, or conserving energy (Agoston & Urbán, 2022). Thus, guilt converts moral discomfort into motivation to act responsibly.

Growing research demonstrate that emotions like guilt and shame can strongly influence eco-friendly behaviour. These emotions often motivate individuals to reduce waste, recycle, and support sustainable brands, though too much guilt can sometimes lead to emotional fatigue or defensiveness (Nielsen & Gössling, 2024). Environmental awareness and connection to nature enhance this process, but it is emotional engagement rather than knowledge alone that strongly drives behavioural change (Agoston & Urbán, 2022).

Supporting this perspective, (Nielsen & Gössling, 2024) explains that eco-guilt operates through self-regulation. Experiencing guilt over environmental harm prompt individuals restore their self image by making sustainable choices, such as purchasing environmentally friendly products or reducing waste. However, the effect of guilt depends its intensity moderate guilt motivates action, while excessive guilt may lead to avoidance or denial.

The effectiveness of eco-guilt extends into the realm of advertising and marketing. Research shows that guilt-based appeals can significantly influence consumer attitudes and purchase intentions. For instance (Balaskas & Paraskevas, 2023), conducted an experiment where participants viewed six advertisements three evoking negative emotions (guilt, fear, and disgust) and three evoking positive emotions (joy, inspiration, and curiosity). The results revealed that ads eliciting negative emotions, particularly guilt, had a stronger positive effect on consumers' attitudes toward the green ad and increased their purchase intention for the featured eco-friendly product. This demonstrates that guilt, when effectively communicated, can convert emotional unease into positive behavioural change.

Similarly, a study by Shimul et al. (2023) found that guilt-based messages are particularly effective when combined with environmental knowledge and a sense of responsibility. Consumers with greater environmental awareness responded more positively to advertisements that evoked guilt, demonstrating greater purchase

intentions toward eco-friendly packaged products compared to those with lower environmental awareness. This suggests that guilt-based appeals are most effective when supported by cognitive understanding, creating a synergy between emotion and knowledge.

Eco guilt is particularly relevant in Pakistan due to visible environmental degradation and pollution. Poor waste management, littered urban spaces and smog have turned sustainability into a pressing daily issue. Karachi, for example, is ranked as one of the three worst marine litter hotspots in South Asia (Ahmed & Ali, 2023).

Constant exposure to such conditions prompt individuals reflect on their own contribution in environmental harm, often triggering moral discomfort and a desire to act in eco friendly manner. Consequently, many Pakistani consumers are now turning toward eco friendly products, seeing sustainable consumption as both a moral and practical solution to the environmental damages (Ikram & Siddiqui, 2021).

Thus, within Pakistan's context of visible pollution and rising environmental awareness, eco-guilt act as a strong psychological driver that transforms emotional unease into proactive, sustainable consumption. It bridges the gap between environmental awareness and actual behavioural change, motivating individuals to adjust their everyday choices with ecological responsibility and moral values.

Therefore, it is proposed that:

H2: Eco-guilt has a positive influence on environmentally friendly choices.

2.5 Moderating Role of Price Sensitivity

In recent years, advancement in technology and growing awareness about sustainability and health have made consumers more interested in eco friendly products. People are becoming more mindful about how their choices affect the planet and they are shifting toward buying eco-friendly and organic items that do not harm nature (Akbar & Gill, 2023).

With growing environmental concern and awareness, individuals are becoming increasingly motivated to incorporate eco friendly products into their daily lives this shift is observed in both developed and developing countries (Suhaeni, Wulandari, Turnip, & Deliana, 2024).

However, despite having this positive attitude, research still highlights a significant attitude behaviour gap between consumers' intentions and their actual buying behaviour. For instance, a study conducted by Moslehpour et al. (2023) revealed that approximately 67% of consumers express a positive attitude toward buying organic food, yet only 4% follow through with the purchase.

Another study revealed that, 65% of consumers claim they intend to buy eco friendly products, but only 26% actually do (Barbu et al., 2022). This inconsistency suggests that although many consumers express concern for the environment, their actual buying decisions often does not align with their stated values (Afridi & Khan, 2021).

One of the most consistent explanations for this gap is consumers sensitivity to price. Green products generally more expensive than conventional products, and this price premium often discourages even environmentally aware consumers from purchasing them (Al-Kumaim et al., 2021).

Price sensitivity refers to the extent to which change in price influence consumer decision making (Akbar & Gill, 2023). In FMCG markets where product alternatives are easily available, consumers often prioritize affordability over environmental benefits, creating a significant barrier to the adoption of green products.

Empirical studies further confirm that when consumers are highly price sensitivity pro-environmental emotions and attitudes becomes less effective in shaping their behaviour (Nguyen et al., 2025). Even when consumers feel moral emotions like eco-guilt, strong sensitivity to price can diminish these feelings and hinder them from translating into actual green purchases (Rodrigo & Yatawara, 2024). In Pakistan, this challenge is amplified by low purchasing power and high. Research indicates that while consumers often express environmental concern and guilt, they frequently default to nongreen, cheaper options when faced with higher price for green products (Nguyen et al., 2025). Thus, although eco guilt can motivate

environmentally friendly behaviour, the strength of this relationship depends upon consumers' sensitivity to price.

Affordability remains a decisive factor in deciding whether emotional motivation leads to actual behavioural change. By contrast, in developed countries where purchasing power is higher, consumers often prioritize environmental sustainability over price and show greater willingness to pay a premium for eco friendly products (Di Canio, 2023; Tan & Ahmed, 2025).

However, in Pakistan where the majority of consumers belongs to the lower middle and middle class high price sensitivity tends to weaken this relationship, as affordability outweighs environmental concerns (Rana & Siddiqui, 2024). Therefore, it is hypothesized that in Pakistan, higher price sensitivity negatively moderates the relationship between eco-guilt and environmentally friendly choices. In other words, the higher the price sensitivity, the weaker the influence of eco-guilt on environmentally friendly choices.

H3: Price sensitivity negatively moderates the relationship between eco-guilt and environmentally friendly choices, such that the relationship is weaker when price sensitivity is high.

2.6 Conceptual Framework

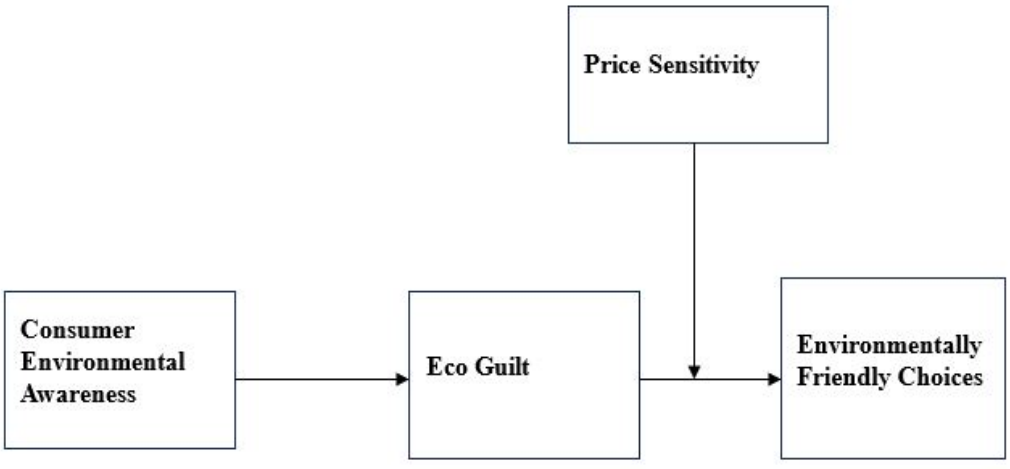

FIGURE 2.1: Conceptual Framework

2.7 Literature Summary

Chapter Two provides a detailed review of previous studies on environmentally friendly consumer behaviour, emphasizing how environmental awareness acts as a stimulus that evokes eco-guilt, which in turn lead consumers toward environmentally friendly choices. Grounded in the Stimulus Organism Response (S-O-R) theory, the chapter explores both emotional and economic factors influencing environmentally friendly choices. It further examines the moderating role of price sensitivity, which may lessen the impact of eco-guilt on eco friendly purchasing decisions. Through this analysis, the chapter formulate research hypotheses and develops a conceptual framework that underpins the present study.

Chapter 3

Research Methodology

3.1 Introduction

This chapter describes how the research was conducted to test the relationships as postulated in the conceptual framework of this research. It details the research paradigm, population, sampling method, sample size, method of data collection and data analysis methods used to test the hypotheses. This chapter is aimed at giving a clear description of the way in which the research was carried out and how the data were collected and analyzed. The research design is a quantitative research design aimed at determining the association between consumer environmental awareness, eco-guilt, price sensitivity and the environmentally friendly decisions in the FMCG sector in Pakistan. The chapter also describes the measurement scales used to measure each construct and the statistical methods that were applied to the analysis of the data using Partial Least Squares Structural Equation Modelling (PLS-SEM).

3.2 Research Paradigm

A research paradigm refers to the underlying philosophical and theoretical framework that guides a researcher's study (Hovorka & Sidorova, 2010). It forms the foundation of beliefs, assumptions and principles that influence the researcher's

perspective and impact their selection of research methods and data analysis techniques. Keeping in view the research setting of this thesis, positivism paradigm was chosen to facilitated the acquisition of solid empirical evidence and data. Within this framework, the deductive reasoning approach was employed, to ensure the objectivity, replicability, and generalizability in our findings.

3.3 Population

In the context of research, a population refers to the particular group or area of interest that the researcher wants to explore.

It is important to identify the correct population since an incorrect identification of the population can have a major negative impact on the generalizability, validity and reliability of the study findings (Willie, 2024). This study aims to examine how environmental awareness increases eco-guilt, which in turn leads towards environmentally friendly choices, with price sensitivity moderating this relationship.

Since these constructs are closely linked to consumer decision making, the target population therefore includes Pakistani consumers who are directly responsible for making household purchasing decisions in the FMCG sector.

Consumers today live in an environment where the effects of degradation are becoming increasingly apparent. Plastic waste, deteriorating air quality and polluted water serve as constant reminders of environmental harm. In such settings, environmental awareness develops intuitively through lived experience and careful observation, rather than being shaped or influenced by external campaigns. When people realize that their own consumption contributes to these problems, it often evoke eco-guilt, a reflective emotional feeling that shapes future choices. Thus, consumer awareness in this study is viewed as a self realized reflection of environmental conditions. To maintain contextual relevance and practicality, participants were selected from Rawalpindi and neighbouring urban areas such as Islamabad. These locations provide exposure to mix socioeconomic groups, relatively higher literacy levels, and growing awareness of environmental issues, making them suitable for examining variations in eco-guilt, awareness, and price sensitivity. As

per the 7th population census conducted by the Pakistan Bureau of Statistics in 2023, total population of Pakistan is 241.49 million (Statistics, 2023). Punjab is the most populated province in Pakistan, and has a population of about 127.69 million (Goujon & Williamson, 2021), with Rawalpindi offering a balanced mix of working, middle and upper class segments, all the data were gathered from the participants belong to Punjab. This it offers a suitable setting to explore how environmental awareness and guilt interact with price sensitivity in shaping eco-friendly FMCG purchase decisions. By focusing on urban FMCG consumers who regularly make household purchases, this study examine the behavioural, emotional, and economic factors that drive or hinder the adoption of eco friendly choices in Pakistan.

3.4 Geographic and Demographic Characteristic of Respondents

Table 3.1: Gender of Respondents

Gender	**Frequency**	**Percentage**
Male	182	40.3%
Female	264	58.4%
Not disclosed	6	1.3%
Total	452	100%

Table 3.2: Age of Respondents

Age Group	**Frequency**	**Percentage**
25-34 years	376	83.2%
35-44 years	54	11.9%
45-55 years	8	1.8%
Not Disclosed	14	3.1%
Total	452	100%

TABLE 3.3: Monthly Income of Respondents

Income Level	**Frequency**	**Percentage**
50000+	169	37.4%
50000-75000	89	19.7%
75000-100000	60	13.3%
1 lakh above	106	23.2%
Not disclosed	29	6.4%
Total	452	100%

3.4.1 Interpretation

A mixed mode approach was used to collect data for this study, which included both online and offline survey methods to ensure wider geographic reach and respondent diversity. A total 509 responses were initially received, 309 responses were obtained online through a structured questionnaire distributed via WhatsApp using a shareable questionnaire link. The remaining 200 responses were collected through physical (hard copy) questionnaires they were administered in person. To collect data offline, the researcher personally visited large retail grocery stores, including Carrefour and Punjab Cash & Carry , located in Rawalpindi. The respondents were approached when they were doing their shopping at the grocery stores and were kindly requested to take the part in the research. The respondents completed the questionnaires on the spot, and their responses were entered later into an Excel sheet manually for data coding and analysis.

Total 509 responses were initially collected, but after excluding participants from provinces other than Punjab 452 were retained for analysis. Therefore, the final sample represent respondents exclusively from Punjab. The demographic data represents that 40.3% of the respondents were male and 58.4% were female, while 1.3% chose did not reveal their gender. The age distribution shows that the majority of the participants were between 25-34 years i.e (83.2%), followed by 11.9% aged 35-44 and 1.8% aged 45-55. Additionally, 3.1% of respondents did not reveal their age. Regarding income, 37.4% of respondents earned upto 50,000,

19.7% fell between 50,000-75,000 range, 13.3% earned between 75,000-100,000, and 23.2% had their incomes above 100,000, whereas 6.4% did not to disclose their income. A "Not Disclosed" category was included to ensure transparency and ethical reporting, reflecting the respondents who opted not to share their personal information.

3.5 Sample Size and Sampling Technique

Due to time and resource constraints when dealing with extensive population data, researchers typically select a sample for data collection, enabling generalization to the broader population (van Haute, 2021). The selected sample is intended to reflect the complete population, ideally encompassing all its traits. In social sciences, sampling techniques is commonly used and recommended because it saves time and cost compared to a full population survey. Sampling allows researchers to draw a meaningful conclusions about the entire population from a subset of data. The two fundamental categories into which sampling techniques are primarily classified are probability sampling and non-probability sampling (Makwana, Engineer, Dabhi, & Chudasama, 2023). The use of a non probability sampling technique is recommended for data collecting in circumstances when the exact number of the population is uncertain (K.-S. Kim, 2022), such as consumer who prefer sustainability in fast moving consumer goods sector in Pakistan, is uncertain. Hence, in order to collect data for the research, this study used a non-probability sampling strategy, specifically the Purposive sampling technique. In this study, purposive sampling is employed because the research specifically wants participants who are aware of environmental issues and consider sustainability in their purchase decisions. As the model examines the impact of environmental awareness, eco-guilt, price sensitivity on environmentally friendly choices, it is essential to select individuals who have the knowledge and exposure to these topics. Surveys were distributed both online (via social media and whatsapp) and in person. This combined strategy facilitated the acquisition of meaningful and reliable responses while saving time and resources. The sample size for the study was established

using the calculations provided by Krejcie and Morgan (1970a) in their work in 1970, as outlined in Table 3.4 (Krejcie & Morgan, 1970b). According to these calculations, it was deduced that, a sample size of 384 at a 95% confidence level would be sufficient for a population size of one million or more, for quantitative research methods.

TABLE 3.4: Sample Size Table by Krejcie and Morgan (1970a)

Calculated Size of Sample	
Population Size	**95% confidence level**
100	80
500	217
1000	278
5,000	357
10,000	370
50,000	381
1,000,000	384

The primary objective of this study, as indicated in Table 3.4, was to secure a sample size of 384 or more, which can adequately represent the target population. To achieve this goal, the questionnaire was carefully designed to evaluate participants purchase intentions of environmentally friendly choices in Pakistan.

3.6 Data Analysis Technique

The data for this study was gathered through a structured survey questionnaire. A five-point Likert scale was employed to evaluate respondent's opinions and attitudes toward environmental awareness, eco-guilt, price sensitivity, and environmentally friendly choices. The five-point scale is commonly used in social science research as it provides a balance between simplicity and reliability, making it easier for participants to give clear and reliable answers without causing survey fatigue (Hartley, 2013). The survey was distributed to the target population both online and in person to capture diverse responses. The collected data is numeric

in nature, making it appropriate for advanced statistical analysis. Partial Least Squares Structural Equation Modelling (PLS-SEM) using Smart PLS 4.0 was applied to test the hypothesized relationships between the independent, mediating, moderating, and dependent variables. The selection of PLS-SEM is justified dur to the intricate nature of study's conceptual model, as it includes both a mediating variable (eco-guilt) and a moderating variable (price sensitivity). PLS-SEM is well suitable for exploratory research, especially when sample sizes are limited and data is not normally distributed.

The structural model was developed to test the direct and indirect relationships between:

Independent variable:

CEA = consumer's environmental awareness.

Mediators:

EG = Eco guilt

Moderator

PS = price sensitivity

Dependent variable:

EFC = Environmentally friendly choices

3.7 Measurement Constructs

Data collection is an important and complex process, and in this research thesis, the required information was gathered through questionnaires. These questionnaires were adapted from previous studies carried out by various other authors. Table 3.7 outlines the factors influencing the adoption of environmentally friendly choices in Pakistan i.e., namely environmental awareness eco-guilt and price sensitivity along with the number of items included. Five Point Likert scale was utilized in this research thesis to gather the opinions of the respondents. This scale was adopted with the aim of providing participants with more options to express their opinions and ensuring their comfort in answering the questions.

3.8 Scale Adoption

A structured approach was used for scale development process starting with the independent variables, followed by the mediator, moderator and then dependent variables. This method ensured a comprehensive and well-structured assessment of the constructs involved in the study.

By initially focusing on the independent variables, the researcher created a clear foundation for measuring the relevant factors influencing the mediator eco guilt and dependent variable environmentally friendly choices.

Following this, the mediator variable was measured, allowing for a detailed understanding of its role in the relationship between the factors leading toward the adoption of environmentally friendly choices.

Finally, scales were developed to measure the constructs of the dependent variable, enabling a comprehensive understanding of its occurrence.

TABLE 3.5: Variables, Sources, Items, and Established Cronbach's Alpha

Variable	**Source**	**No. of Items**	**Cronbach Alpha**
Consumer environmental awareness	Iftikhar and Ahmed (2022b); Arı and Yıldız (2017); Olasiuk and Balashova (2019)	6	0.697
Eco guilt	Agoston and Urbán (2022); Culiberg and Elgaaied-Gambier (2021); Awad and D. (2025)	7	0.91
Price sensitivity	Y. Kim and Choi (2005); Lin and Huang (2012); Arı and Yıldız (2017)	7	0.7955
Environmentally friendly choices	Ghali-Zinoubi (2020); Sheikh and Mahmood (2023); B. Yue and Sun (2020); J. Wang and Li (2019)	6	0.69

3.9 Exogenous Variables

This research encompasses one independent variable.

3.9.1 Environmental Awareness

Environmental awareness refers to the sum of information people have about environmental issues and their ability to evaluate and measure their impact on the environment and the community. (Haq & Ahmed, 2021). Consumer environmental awareness is crucial in shaping their preferences toward sustainable products, it involves recognizing the connections between our daily actions and the environment (García-Salirrosas et al., 2023).

The scales have been adopted from 3 different articles 1)"The Impact of Green Marketing and Environmental Awareness on Consumers' Conscious Consumption of Green Products", 2) "An Exploration of Issues Affecting Consumer Purchase Decisions Towards Eco-Friendly Brands", 3) Effects of environmental illiteracy and environmental awareness among middle school students on environmental behavior" by (Iftikhar & Ahmed, 2022a; Olasiuk & Balashova, 2019; Arı & Yıldız, 2017).

3.9.2 Mediator

3.9.2.1 Eco-guilt

Eco guilt is the feeling of unease or discomfort people have when they believe their actions are causing environmental harm (Moslehpour et al., 2023). The scales have been adopted from 3 different articles 1) "The psychological consequences of the ecological crisis: Three new questionnaires to assess eco-anxiety, eco-guilt, and ecological grief", 2) "The Role of Moral Foundations, Anticipated Guilt and Personal Responsibility in Predicting Anti consumption for Environmental Reasons", 3) "Psychometric properties of the Arabic version of the Eco guilt and Eco grief scales" by Agoston and Urbán (2022); Culiberg and Elgaaied-Gambier (2021) and Awad and D. (2025).

3.9.3 Moderator

3.9.3.1 Price sensitivity

Price sensitivity refers to the extent to which changes in product prices affect consumers' buying behaviour (T. Yue & Wang, 2022). Price is regarded as a key factor in consumer's evaluation of purchase decisions and it act as evaluative benchmark and a key mediator in cognitive thinking process in buying behaviour (Marwat & Shah, 2022). Price Sensitivity is highly important and relevant to FMCG in Pakistan.

The scales have been adopted from the 4 different articles 1"Determinants of Consumer Purchase Intention and Behaviour toward Green Product: The Moderating Role of Price Sensitivity", 2 "Factors Influencing Green Purchase Behavior: Price Sensitivity, Perceived Risk, and Attitude towards Green Products", 3 "Impact of Consumer Environmental Responsibility on Green Consumption Behaviour in China: The Role of Environmental Concern and Price Sensitivity", 4 "Environmental Consciousness and Organic Food Purchase Intention: A Moderated Mediation Model of Perceived Food Quality and Price Sensitivity" by Ghali-Zinoubi (2020).

3.10 Endogenous Variable

3.10.1 Environmentally Friendly Choices

Green products aim to promote environmental sustainability, by minimizing pollution in nature, conserving natural resources, and achieve and fulfill the needs and wants of customers without harming the nature, environment and society. Environmentally friendly products contributes to environmental protection by reducing harmful impacts on the environment by incorporating recyclable packaging and reuse of resources (Khazraje, 2024).

The scales have been adopted from 3 different articles 1) "Antecedents of Green Purchase Behaviour: An Examination of Collectivism, Environmental Concern,

and PCE", 2) "The influence factors on choice behaviour regarding green products based on the theory of consumption values" 3) "Effects of environmental illiteracy and environmental awareness among middle school students on environmental behavior" by Y. Kim and Choi (2005); Arı and Yıldız (2017).

3.11 Instrument Reliability and Validity

In this research, the reliability of the research instruments was evaluated using a widely accepted method known as the Cronbach alpha method. The main objective of this assessment was to verify the reliability of the data collected for the study. The Cronbach alpha method is a statistical method to determine the internal consistency of a set of items or scales. It calculates a reliability coefficient, which ranges between 0 and 1, indicating the degree of reliability of the data for research purposes. The Cronbach alpha technique requires that the values of the items fall within the range of 0 to 1, to ensure the validity of the data. Values within this range demonstrate whether the data is reliable and consistent, allowing for confident interpretation and analysis.

The chapter 4 of this research thesis is dedicated to further discussing and investigating the reliability of the collected data in detail. Through this analysis, the study aims to provide a comprehensive evaluation of the reliability of the research instruments and establish the trustworthiness of the data employed in this study.

3.12 Data Collection Procedures and Methods

We made a dedicated effort to gather data from people in Pakistan who are actively involved in making household purchase decisions for fast moving consumer goods (FMCG). To maintained the accuracy of responses, participants carefully filtered out who were not fit for our study.

The questionnaires were shared with participants using both online and offline methods. For online distribution of the survey, Google Forms was used as it

provided a simple and efficient platform for reaching a broad audience. The questionnaire link was circulated across multiple social media platforms, such as emails and WhatsApp groups. Offline distribution involved distributing printed questionnaires to individuals in Rawalpindi and Islamabad and at different FMCG stores to capture a diverse sample across different socioeconomic segments.

Through this approach, initially a total of 509 responses were collected. Out of these, 36 were incomplete or invalid and 52 were filtered out at the beginning due to not meeting the eligibility criteria. As a result, 452 valid questionnaires were used for analysis.

By employing a diligent and straightforward approach to data collection, the study overcame the difficulties of collecting data from Pakistani consumers. The use of a simple and clear questions enabled individuals to understand the question easily and provide honest responses and trusted distribution methods helped ensure that the data collected was both reliable and relevant.

3.13 Data Analysis

3.13.1 Smart PLS 4.0

This research thesis employed SMART PLS 4.0 method to estimate both the measurement model and the structural model. Smart PLS 4.0 was chosen because it met the study's requirements and provided several key advantages. Firstly, its easy to use interface allows researchers with varying levels of expertise to effectively perform advanced statistical computations. Secondly, this software is suitable for handling non normal data distributions, which is particularly relevant in behavioural and consumer studies.

Secondly, it is well-suited for handling non-normal data distributions, which is particularly relevant in behavioural and consumer studies. Secondly, it is well-suited for handling non-normal data distributions, which is particularly relevant in behavioural and consumer studies. In addition, the software offers advanced

features compatible with modern research practices, making it reliable tool for analyzing complex model.

A key advantage of Smart PLS 4.0 is its capability to analyze both mediating and moderating effects within a single integrated framework. This was proved to be particularly useful for our study, as it examined eco-guilt as a mediating variable between environmental awareness and environmentally friendly choices, with price sensitivity acting as a moderator. The software facilitated these analyses by integrating them within one framework, making the investigation of indirect and conditional relationships easier.

The measurement model was used to evaluated the effects and test the hypotheses, where as the structural model evaluated the relaibility and validity of the data. Importantly, this approach offered benefits such as working with larger sample sizes and eliminating the need for data normality due to the implementation of bootstrapping procedures (Koong & Liu, 2002).

In recent years, PLS-SEM has increasingly been adopted in marketing and consumer behaviour research due to its flexibility and strong predictive power. This methodological choice not only strengthened the theoretical precision of the study but also ensured its improved predictive capabilities in analyzing the complex relationships among environmental awareness, eco-guilt, price sensitivity, and environmentally friendly choices.

3.13.2 Measurement Model Assessment

Measurement model is used to test the reliability and validity of the constructs in the study. It analyses how well the observed indicators measure their respective latent variables. (Joseph F. Hair Jr., 2022). Cronbachs Alpha and Composite Reliability (CR) were used in evaluating reliability. Convergent validity was tested using Average Variance Extracted (AVE) ensuring that each construct explains a sufficient portion of variance in its indicators. The Fornell-Larcker criterion and HeterotraitMonotrait Ratio (HTMT) were used to measure discriminant validity. These processes ensured the reliability and validity of the measurement scales.

3.13.3 Structural Model Assessment

The structural model evaluates the proposed relationships among latent constructs. It evaluates the strength and significance of path coefficients (β values) using bootstrapping procedures in SmartPLS (Joseph F. Hair Jr., 2022).

The structural model evaluates the postulated relationships between the latent constructs. It analyses the strength and importance of the path coefficients (β values) through bootstrapping processes in SmartPLS.

Path coefficients, t-values, and p-values were used to analyze the model and identify the significance of the hypothesis. Effect size (f 2) and coefficient of determination (R 2) were calculated to test the size of relationships and measure the explanatory power of the model respectively. This test proved the direct influence of environmental awareness on eco-guilt, the impact of eco guilt on environmentally friendly decisions, and the moderating role of price sensitivity.

3.14 Summary Research Methodology

This chapter began by outlining the research paradigm, providing a solid foundation for the study. Following this, the selected population was analyzed, accompanied by a detailed discussion on the determination of the appropriate sample size for this thesis. The next section focused on outlining the procedural aspects and the methodology and procedures employed for data collection. This included an in-depth explanation of the scale development process and the careful arrangement of variables. Each variable was carefully defined and operationalized to ensure clarity and uniformity in measurement. The sophisticated SMART PLS 4.0 software was utilized, to analyze the collected data which offered an advanced capabilities for both the measurement and structural models. This software supported a robust data analysis process, facilitating the evaluation of relationships and effects within the measurement model, as well as examining the validity and reliability of the data through the structural model.

Chapter 4

Result and Analysis

The survey was carried out through both online and offline methods to collect data from consumers in Pakistan, focusing on the relationship between consumer environmental awareness, eco-guilt, and environmentally friendly choices, with price sensitivity acting as a moderating variable.

A total of 200 questionnaires in hard form were distributed in person at FMCG stores located in major urban areas. Of this number, 170 were valid and 30 were not included because of demographic discrepancies.

Also, the questionnaire was shared online using Google Forms, spreading through the social media and email networks. There were 309 responses out of which 282 responses were complete and valid in this online distribution.

A total of 452 valid responses were filtered to be analyzed using Smart PLS 4. The general response rate obtained was about 88.8% which implies that both modes of collection highly participated and thus its reliability in terms of data. The summary of the response statistics is given in Table 4.1.

TABLE 4.1: Response Rate

Mode of Distribution	**Responses Received**	**Usable Responses**	**Usable Response Rate (%)**
Hard Copy (Shopping malls)	200	170	85.00
Online (Google Forms)	309	282	91.26
Total	**509**	**452**	**88.80**

4.1 Descriptive Analysis

Unlike other statistical tools such as AMOS, EQS and LISREL, Partial Least Squares (PLS) does not require a large sample size, as supported by Afthanorhan (2013). The participants in the main quantitative study were categorized based on their behavioural and psychographic and demographic traits. The survey included questions about their income level, purchase behaviour and lifestyle.

4.2 Missing Data

To collect data related to consumer's environmentally friendly choices, the survey questionnaires were distributed both offline and online among potential consumers in Pakistan. Total of 509 questionnaires were retrieved, including responses from both online and hard-copy surveys.

Out of these, 452 responses were selected for Smart PLS analysis. Questionnaires from respondents who were not from Punjab were excluded to maintain a consistent demographic focus.

To dealing with missing data, there are several accepted methods in research, such as complete case analysis, single imputation methods, last observation carried forward, regression imputation and model-based techniques (Fiero et al., 2016).

Based on this understanding, the missing answers in my questionnaire were dealt by assigning a neutral value, to ensure that the dataset remained complete for analysis.

These efforts ensured a clean, reliable and complete dataset suitable for PLS-SEM analysis. Table 4.2 presents a summary comparing the original and final sample sizes.

TABLE 4.2: Original and Final Sample Size

Country	**Population**	**Internet Users in Pakistan**	**Original Sample**	**Final Sample**
Pakistan	255.2 million	116 million	509	452

4.3 Model Evaluation Smart PLS 4.0

SMART PLS was used to analyze the data for this study.SMART PLS 4.0, a software well-known for its performance ability to effectively handle complex models in Partial Least Squares Structural Equation Modelling, (Hair, Sarstedt, Pieper, & Ringle, 2012). Once the inner and outer model was constructed, the indicators were connected to their latent variables, and the model was initially run in Smart PLS 4.0. During this initial run, four items (CA 2, EG 3, and PS 1 and 2) were identified to have factor loadings below 0.70, which adversely effected the reliability and validity of the constructs. As a result, these items were excluded from the model. The remaining all items had factor loadings of 0.67 or higher, were retained. Upon re-analyzing the model in a second run, all retained items displayed acceptable factor loadings, reinforcing the reliability of the measurement model.

4.4 Measuring the Inner and Outer Model

The PLS-SEM framework is composed of two integral components, the first component is the measurement model, which evaluate the validity and reliability of

the observed variables used to measure the latent constructs. It helps to ensure the robustness and the accuracy of the measurement process. The second component is the structural model, which illustrate the relationships among the latent constructs. This component analyzes the influences and interconnections among the constructs to better understand the underlying patterns and associations in the data (Afthanorhan, 2013).

4.5 Assessment of Measurement Model

In the study, the evaluation of construct quality is assessed through the examination of the measurement level. The assessment of construct quality begins by reviewing factor loadings, which is then followed by evaluating both construct reliability and construct validity.

4.5.1 Measurement Model Assessment

The measurement model was evaluated to assess reliability and validity of the constructs. The following criteria were examined:

Indicator reliability (Outer factor loadings > .70) Internal consistency reliability (Cronbach's alpha and Composite Reliability > .70)

Convergent validity (AVE > .50)

Discriminant validity (Fornell–Larcker criterion and HTMT ¡ .90)

Results indicated that all constructs met the recommended threshold values. Therefore, the measurement model demonstrated satisfactory reliability and validity.

4.5.2 Factor Loadings

In the assessment of the measurement model, items having factor loadings below the recommended threshold were considered for elimination. According to Hair et al. (2012) the range of factor loading between 0.60-0.70 are generally acceptable

for exploratory research, reflecting moderate reliability. Total of four items were removed in this study, as they were below the minimum acceptable factor loading criteria. Two items, PS1 and PS2, were removed as their factor loadings were below 0.50, which is below the minimum acceptable criteria. The two more items were removed, although their loadings were above 0.60, but their inclusion were weaking the overall construct reliability and the relationships within the model. This approach follows PLS-SEM best practices, which allow to remove items not only based on numeric thresholds but also based on their contribution to the construct's reliability and predictive performance.

Table 4.3: Factor Outer Loadings

Items	**Consumer Environmental Awareness**	**Eco-Guilt**	**Environmentally Friendly Choices**	**Price Sensitivity**
CEA1	0.683			
CEA2	0.707			
CEA3	0.796			
CEA4	0.763			
CEA5	0.730			
EG1		0.689		
EG2		0.700		
EG3		0.756		
EG4		0.777		
EG5		0.689		
EFC1			0.680	
EFC2			0.771	
EFC3			0.820	
EFC4			0.695	
EFC5			0.717	
PS1				0.784
PS2				0.866
PS3				0.870

Note: CEA = Consumer Environmental Awareness, EG = Eco-Guilt, EFC = Environmentally Friendly Choices, PS = Price Sensitivity.

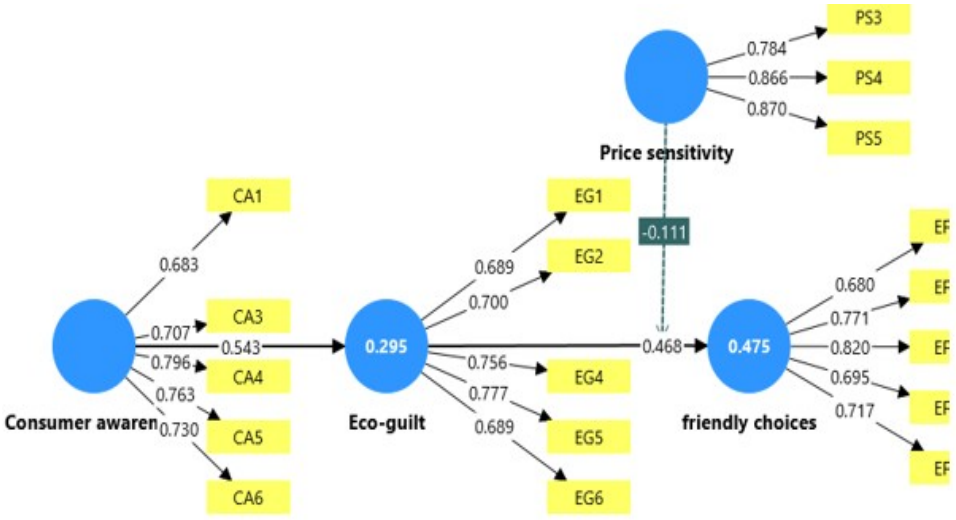

FIGURE 4.1: Structural Model

4.5.3 Measuring the Internal Consistency

Internal consistency refers to the extent to which multiple items in a measurement model are similar measures the same construct. It measures how well these items, designed to measure the same construct, provides a consistent and comparable results. In other words, it evaluates the degree to which the items in a scale or questionnaire are homogenous and effectively measure the aspect being studied. The Internal consistency within the measurement model is primarily measured through Cronbach's Alpha and Composite reliability.

4.5.3.1 Cronbach's Alpha

The internal consistency of the measurement scale was evaluated using a numerical statistic called Cronbach's alpha. It measures the average correlation between all possible pairs of items within the scale. Higher the values of the alpha coefficient which goes from 0 to 1, indicates greater internal consistency. A Cronbach's alpha value near 1 or more than 0.7 signifies that the items in the scale are strongly interrelated, effectively captures the same underlying construct. Table 4.4 represents the values of the Cronbach's Alpha for our study ranging from 0.755 to 0.863 showing how strongly the items within each construct are correlated with

each other. All construct values exceeds the suggested cutoff point of 0.70, demonstrating the measurement scales exhibit high internal consistency and reliability (Cronbach, 1951).

TABLE 4.4: Cronbach's Alpha Values of Constructs

Variables	**Cronbach's Alpha**
Consumer Environmental Awareness	0.791
Eco-Guilt	0.771
Environmentally Friendly Choices	0.790
Price Sensitivity	0.793

Note: CEA = Consumer Environmental Awareness, EG = Eco-Guilt, EFC = Environmentally Friendly Choices, PS = Price Sensitivity.

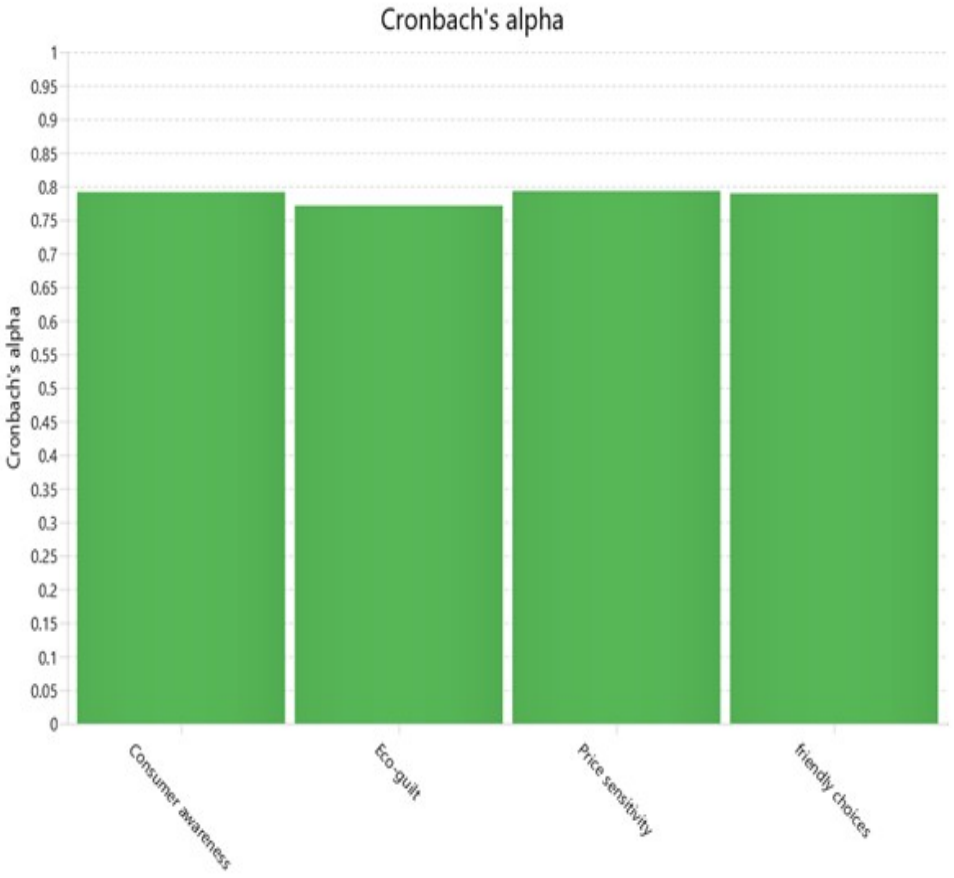

FIGURE 4.2: Cronbach's Alpha

4.5.3.2 Composite Reliability

The Composite Reliability (rhoc) values indicate the internal consistency of each construct within the study. Composite Reliability values indicate the average inter-item correlation and demonstrate how closely the items within a construct are related to each other. According to accepted standards by Hair et al. (2012), a Composite Reliability value equals to or greater than 0.70 is considered acceptable for reliable measurement. The results presented in Table 4.5, it indicates that all constructs meet this threshold, demonstrating a moderate to high internal consistency. The PS construct demonstrate the highest Composite Reliability, with a value of (0.806), reflecting excellent reliability. The remaining constructs, CEA (0.805), EG (0.773) and EFC (0.796), also reflect good internal consistency. These results confirm the strong reliability and robustness of the measurement scales used in the study.

Table 4.5: Composite Reliability

Variables	**Composite Reliability**
CEA	0.805
EG	0.773
EFC	0.796
PS	0.806

Note: CEA = Consumer Environmental Awareness, EG = Eco-Guilt, EFC = Environmentally Friendly Choices, PS = Price Sensitivity.

4.5.4 Construct Validity

4.5.4.1 Convergent Validity

Convergent validity assesses the degree to which different items designed to measure the same construct are high correlated with each other, it typically requires an Average Variance Extracted (AVE) value greater than 0.50 to establish acceptable convergent validity (Klarmann, 2021).

4.5.4.2 Average Variance Extracted

Average Variance Extracted (AVE) assess the degree to which the observed indicators of a construct effectively capture its underlying variance, considering the impact of measurement error. AVE provides valuable information about the proportion of the construct variance explained by its observable indicators, thus reflecting the degree of accuracy to which the items represent the underlying construct (Larcker & Fornell, 1981).

4.5.4.3 Interpretation

The AVE value for the construct CEA, is 0.543, suggesting that, on average, the construct accounts for 54.3% of the variance in the observed variables (items). This exceeds the recommended threshold for establishing convergent validity (Hair et al., 2012). The EG construct has an AVE of 0.523, indicating that on average, 52.3% of the variance in the observed items is explained by the underlying construct.

This demonstrates that the construct exhibit good convergent validity. The PS construct exhibit an AVE value of 0.707, which indicates that, on average, the PS accounts for 70.7% of the variance in the observed items.

And the construct EFC exhibit an AVE of 0.545, indicating that, on average, 54.5% of the variance in in its items is explained by the construct. Similar to the other constructs, the AVE value exceeds 0.50 demonstrating acceptable convergent validity.

Table 4.6: Average Variance Extracted (AVE)

Variable	**Average Variance Extracted (AVE)**
CEA	0.543
EG	0.523
PS	0.707
EFC	0.545

Note: CEA = Consumer Environmental Awareness, EG = Eco-Guilt, EFC = Environmentally Friendly Choices, PS = Price Sensitivity.

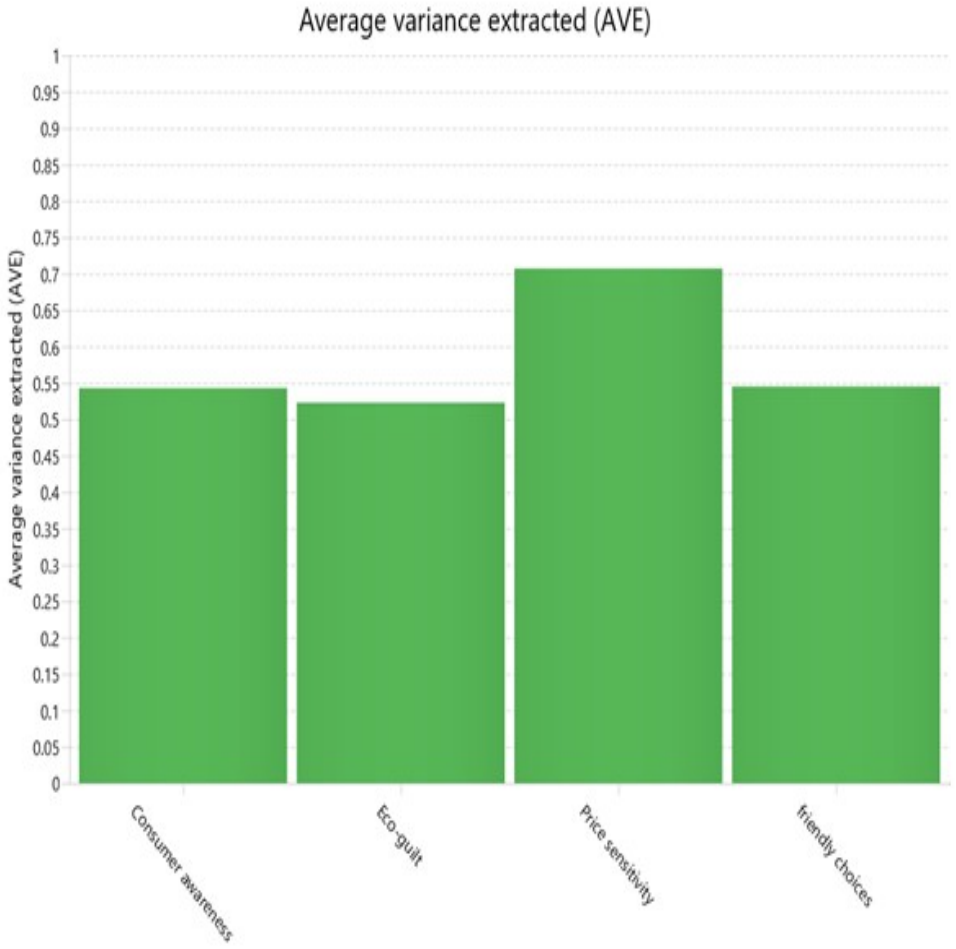

FIGURE 4.3: Average Variance Extracted

4.5.5 Discriminant Validity

The concept of discriminant validity is very important under construct validity. It evaluates the measuring tools ability to differentiate confidentially between two or more constructs and thus avoiding any possible confusion or mixing between these constructs. In order to test discriminant validity, various tools are widely used by the researcher, such as Fornell-Larcker criterion, Heterotrait- Monotrait (HTMT) ratio, cross-loadings in Confirmatory Factor Analysis (CFA). The integrated approach has the advantage of enabling researchers to rigorously investigate discriminant validity in their studies (Larcker & Fornell, 1981).

4.5.5.1 Fornell Larker Criterion

The correlation table 4.11 above indicates the relationship between various constructs: CEA, EG, PS and EFC. The diagonal numbers represent the square root of the Average Variance Extracted (AVE) of each construct and the figures off the diagonal represent the correlations among the constructs. To evaluate the discriminant validity through Fornell-Larcker criterion, we will compare the square root on AVE of each construct with the correlations of constructs. To prove the discriminant validity, it is necessary that the square root of the AVE of each construct should be greater than its correlation with other constructs (Larcker & Fornell, 1981).

4.5.6 Interpretation

Table 4.7 gives the results of the Fornell-Larcker criterion to evaluate the discriminant validity between the constructs (consumer awareness, eco-guilt, price sensitivity and friendly choices). The diagonal values are the square roots of Average Variance Extracted (AVE), whereas the off-diagonal values are the correlations among constructs. To have a discriminant validity in place, the square root of the AVE of each construct must be higher than the correlations of the constructs with other constructs (Fornell and Larcker, 1981). The diagonal values (Consumer awareness = 0.737, Eco-guilt = 0.723, Price sensitivity = 0.841, Friendly choices = 0.738) are greater in this study compared to all inter-construct correlations. This means that both constructs are unique in assessing different concepts and this proves this measurement model has reached the level of discriminant validity.

Note: CEA = Consumer Environmental Awareness, EG = Eco-Guilt, EFC = Environmentally Friendly Choices, PS = Price Sensitivity.

4.5.6.1 Hetrotrait- Monotrait Ratio

The Heterotrait-Monotrait (HTMT) ratio of correlation is an effective way used in PLS-SEM to establish the measure of discriminant validity. It offers an alternative approach to evaluate the degree of distinctiveness between constructs.

TABLE 4.7: Fornell and Larcker Criterion

Variables	**Consumer Awareness**	**Eco-Guilt**	**Price Sensitivity**	**Environmentally Friendly Choices**
Consumer Awareness	0.737			
Eco-Guilt	0.543	0.723		
Price Sensitivity	0.203	0.416	0.841	
Environmentally Friendly Choices	0.408	0.697	0.531	0.738

The HTMT ratio falls within the range of 0 to 1, with lower values indicating stronger discriminant validity. Researchers commonly consider a threshold of 0.85 or below as an accepted criterion for satisfactory discriminant validity. A value of the HTMT that is lower than 0.85 means that constructs are distinct and have desirable degrees of discriminant validity (Sarstedt & Henseler, 2015).

4.5.6.2 Interpretation

In the Table 4.8, the HTMT (Heterotrait-Monotrait) ratios are provided to assess the discriminant validity between pairs of constructs. The results indicate that all the HTMT ratios fall below the general acceptable number of 0.85, which proves the existence of acceptable discriminant validity (Kline, 2016). These findings reveals that constructs are clearly differentiated and barely overlap with each other, indicating their effective differentiation.

TABLE 4.8: HTMT Ratio

	HTMT Ratios
CEA – EG	0.667
PS- CA	0.243
PS-EG	0.532
EFC-CA	0.506
EFC-EG	0.775
EFC-PS	0.664

4.6 Assessment of Structural Model

The structural model assists in interpreting the associations among the latent construct estimating the path coefficients (beta coefficients) to measure the strength and direction of associations and the coefficients of determination(R2). The structural model enables researchers to test hypotheses and learn the cause-effect relationships among various constructs under study (Joseph F. Hair J. J., 2018).

4.7 Structural Model Assessment

After confirming the adequacy of the measurement model, the structural model was assessed to test the hypothesized relationships. The following were evaluated:

Path coefficients (β values)

Significance levels (p-values using bootstrapping)

Coefficient of determination (R^2)

Effect size (f^2)

Moderation and mediation effects The results revealed that:

Environmental awareness significantly predicted eco-guilt ($\beta = 0.543$, $p < .001$).

Eco-guilt significantly predicted environmentally friendly choices ($\beta = 0.468$, $p < .001$).

Price sensitivity negatively moderated the relationship between eco-guilt and environmentally friendly choices ($\beta = –0.113$, $p < .05$).

These findings support the proposed moderated mediation framework.

4.7.1 Estimating Path Coefficients

Path coefficient estimation requires beta values, t-statistics and p-values to understand the strength and significance values of the relationship between variables within a structural equation model (SEM) or path analysis.

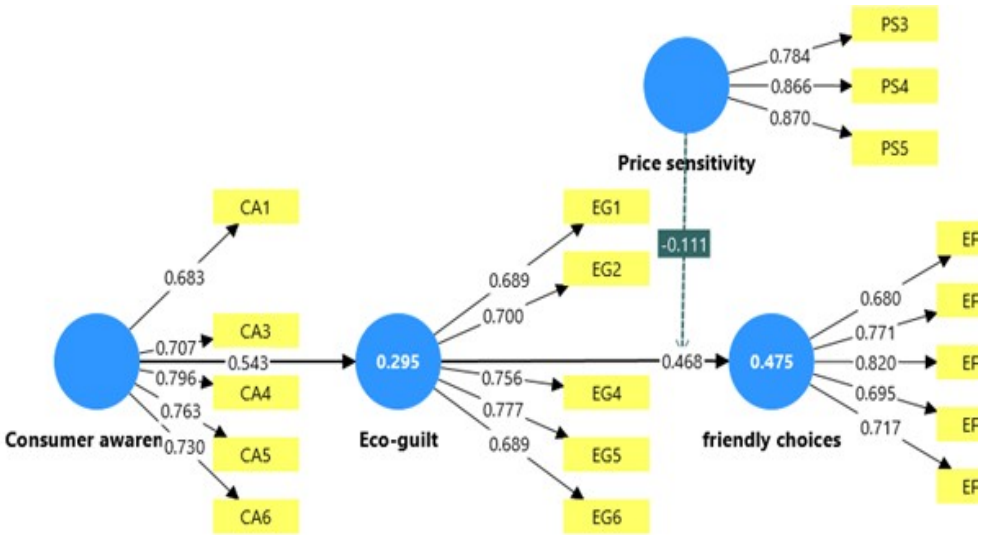

FIGURE 4.4: Estimating Path Coefficients

4.7.1.1 Interpretation

The table 4:9 provides the critical information, such as the beta coefficients, sample means, standard deviations, t-statistics and p -values of the hypothesized relationships in the structural model. The beta coefficients show the direction and the intensity of the relationships between the constructs with higher beta coefficients being stronger. The t-statistics and the p-values indicate that these relationships are statistically significant. A p-value of below 0.05 indicates a significant value at the 95% confidence level (Kline, 2016).

The findings indicate that Consumer Awareness and Eco-Guilt have a positive and significant relationship (= 0.543, T = [13.882], P < 0.05), which implies that the higher the environmental awareness of the individual, the greater the eco-guilt. On the same note, the direction of the Eco-guilt to Friendly Choices is also a good direction and substantial (=0.468, T = [10.022], P < 0.05), implying that eco-guilt feelings motivate consumers to adopt environmentally friendly choices.

However, the interaction of (Price Sensitivity x Eco-Guilt) has a negative beta (= -0.111), but it is statistically insignificant (T = [2.043], P > 0.05). This implies that eco-guilt has an insignificant effect on friendly choices, even though price sensitivity has a slight moderating effect that does not prove to be statistically significant.

Overall, the model explains that the Eco-Guilt is highly predicted by Consumer Environmental Awareness (=0.543) and has a positive impact on Eco-Friendly Choices (=0.468). Further, the interaction between (PS × EG) also indicates that price sensitivity exhibit minor yet significant negative effect (= –0.111), demonstrating that price sensitivity diminishes the influence of eco-guilt on the purchase of eco- friendly products.

All of these findings support the proposed theoretical model and emphasize the importance of emotional and economic aspects in determining eco friendly consumer behaviour.

TABLE 4.9: Path Coefficients and Significance Values

Path	**Beta Coefficient**	**Mean**	**Standard Deviation**	**T Statistics**	**P Values**
CEA > EG	0.543	0.550	0.039	13.882	0.000
EG > EFC	0.468	0.472	0.047	10.022	0.000
PS × EG > EFC	-0.111	-0.107	0.054	2.043	0.041

Note: CEA = Consumer Environmental Awareness, EG = Eco-Guilt, EFC = Environmentally Friendly Choices, PS = Price Sensitivity.

4.7.1.2 Interpretation

According to the values in Table 4.10, the findings suggest that the three hypotheses put forward (H1- H3) are all significant. This proves the existence of meaningful relationships among the variables under study. The correlation between the Consumer Environmental Awareness and the Eco-Guilt (H1) is meaningful and positive, indicating that the more people are aware, the more they experience eco-guilt. Likewise, the relationship between the Eco-Guilt and Environmentally Friendly Choices (H2) is also important and positive in that, the greater the level of eco-guilt an individual experiences, the more likely it is to be involved in environmentally responsible purchasing behaviour. Finally, the Price Sensitivity (H3) moderating effect on the relationship between Eco-Guilt and Environmentally Friendly Choices is significant but negative, which means that when consumers are high price-sensitive, the positive relationship between eco-guilt and environmentally friendly choices becomes weakened.

Table 4.10: Confidence Intervals for Hypothesized Paths

Hyp.	**Path Relationship**	**2.5%**	**97.5%**	**Decision**
H1	CEA > EG	0.471	0.624	Significant
H2	EG > EFC	0.377	0.558	Significant
H3	PS × EG > EFC	-0.217	-0.009	Significant

Note: CEA = Consumer Environmental Awareness, EG = Eco-Guilt, EFC = Environmentally Friendly Choices, PS = Price Sensitivity.

4.7.2 Coefficients of Determination

The Coefficient of Determination which is also referred to as the R-squared is a statistical measure used to estimate how well the independent variables can explain the variability in the dependent variable (Hair et al., 2012). R-squared values that are 0.75, 0.5 and 0.25 are considered substantial, moderate and weak respectively. The values are used to signify the degree of variance that the independent variables in the model are able to explain, and the greater the R-squared values the stronger the relationships and provide more accurate data fits.

4.7.2.1 Interpretation

The table 4:11 R-Square values of EG and EFC that is how much of the total variation is explained by the independent variable(s) in regression models. The R-Square of EG is 0.295, which explains approximately 29.5% of its variation, whereas, the R-Square of EFC is 0.475 which explains about 47.5 percent of its variation.

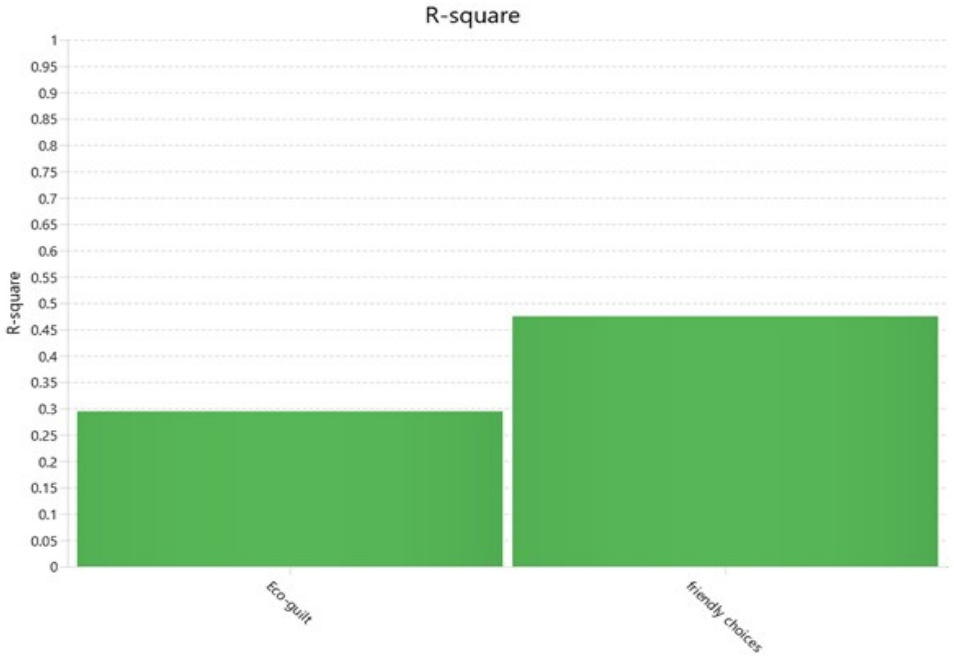

FIGURE 4.5: R-Square

TABLE 4.11: R-Square Values

Variable	**R-Square**
EG	0.295
EFC	0.475

Note EG = Eco Guilt, EFC = Environmentally Friendly Choices.

4.7.3 Assessment of Effect Size

The f2 value measures the contribution of exogenous construct to the R2 value when it is not included in the model, hence its impact on the endogenous constructs. The f2 value of above 0.35 indicates a large effect size which indicates a significant influence of the exogenous construct on the endogenous ones. When the f2 value lies between the range of 0.15-0.35 then this is considered a medium effect size which means that there is an average effect. On the other hand, a small effect size is believed upon when the f2 value falls between 0.02-0.15 as explained by (Hair, Black, Babin, & Anderson, 2014).

4.7.3.1 Interpretation

The f 2 values evaluate the amount of variance contributed by each exogenous construct in the explanatory power of the model. As depicted in the results, the consumer awareness has huge effect size (f2 = 0.418), which shows that increased awareness has a significant influence on eco-guilt in consumers. The effect of eco-guilt on eco-friendly decisions is medium to large (f2 = 0.345), which indicates that guilt related feelings have significant influence on sustainable behaviour. Finally, the interaction term (price sensitivity x eco-guilt) offers a negligible impact (f 2 = 0.026)which means that the overall influence of price concerns and guilt on eco friendly choices is minimal. Altogether, these findings indicate that emotional and cognitive variables including awareness and eco-guilt influence sustainable behaviour better than the economic one.

TABLE 4.12: Effect Size (f^2) for Structural Relationships

Relationship	**f^2 Value**	**Effect Size**	**Decision**
H1: CEA → EG	0.418	Large	Supported
H2: EG → EFC	0.345	Medium to large	Supported
H3: EG × PS → EFC	0.026	Small	Weakly supported

Note: CEA = Consumer Environmental Awareness, EG = Eco-Guilt, EFC = Environmentally Friendly Choices, PS = Price Sensitivity.

4.8 Results Summary

TABLE 4.13: Summary Results of all 7 Hypothesis

Hyp.	**Path Relationship**	**2.5%**	**97.5%**	**Decision**
H1	CEA > EG	0.471	0.624	Significant
H2	EG > EFC	0.377	0.558	Significant
H3	PS × EG > EFC	-0.217	-0.009	Significant

Chapter 4 gives a detailed perspective on the results of the analysis in a systematic order. The chapter begins by the assessment of our model with emphasis on the importance of factor loadings. It then goes to evaluate the quality of the measurement models. We also employed Cronbach alpha and composite reliability to measure internal consistency so as to have the validity of our measurements.

When determining validity, we relied on average variance extracted which measures how well our constructs measured the intended concepts. We have also considered discriminant validity which established the uniqueness of our constructs. The next step after ensuring that the measurement model we proceeded to the structural model. Our hypotheses, concerning the path coefficients were tested using the bootstrap technique, all three hypotheses were accepted, the results indicate that increased environmental awareness increases eco-guilt (H1), leading the consumers to make environmentally friendly decisions (H2). Nevertheless, in the case of a high price sensitivity, the positive effect of eco-guilt becomes extremely weak in influencing the environmentally responsible decisions (H3). In order to measure the effect, we took R squared and values of F squared. Moreover, the Table 4.13 displays the summary findings of all the 3 hypotheses in the research.

Chapter 5

Discussion and Conclusion

5.1 Introduction

The last chapter covered the results of the research model in detail and provided valuable information about the results of the study. Chapter five of this thesis is the summarisation of all this as a complete and final part. It examines the key purposes of the research and how they were fulfilled through the analysis. The chapter also presents the discussion of the major results in detail linking them to the theories and previous studies to demonstrate their significance. Besides, it effectively outlines both theoretical and practical contributions of the research demonstrating how the findings contribute to the concept of consumer environmentally friendly behaviour. Limitations of the study are also provided that contain any challenges or factors that could have influenced the results. Lastly, the chapter also provides useful recommendations to take into consideration in the future research to advance the current knowledge and enhance comprehension of the field of sustainability and consumers environmentally friendly decisions.

5.2 Summary of Research Findings

This study was done to evaluate the effect of consumer environmental awareness, eco-guilt and price sensitivity on environmentally friendly decision-making

in the FMCG industry in Pakistan. The proposed study relied on the Stimulus-Organism-Response (S-O-R) model in which environment awareness (stimulus) induces eco-guilt (organism) which subsequently leads to consumers purchasing behaviour in an environmentally friendly manner (response) and price sensitivity mediated the interdependence between environment awareness and eco-guilt. The results showed that consumer environmental awareness positively relates to eco-guilt significantly, which proves that the more environmentally conscious a person is, the more they feel guilty about their consumption behaviour. Similarly, the correlation between eco-guilt and environmentally friendly decisions was also established to be positive and significant and proved that consumers that experience eco-guilt tend to be inclined towards sustainable purchase behaviour as well as to choose environmentally friendly FMCG products. Nevertheless, the price sensitivity moderating effect was also found to be significant and negative, indicating that the positive impact of eco-guilt on environmentally friendly decisions is reduced with the high consumer price sensitivity. It means that emotional and moral reasons do encourage sustainable consumption, but financial aspects also have a decisive role in determining the actual buying decisions. Overall, the findings of the research confirm the S-O-R model in the explanation of sustainable consumer behaviour in emerging markets such as Pakistan. They emphasize that although awareness and emotional responsibility may facilitate the adoption of eco-friendly behaviour, affordability and presence is a major obstacle in converting good intentions into reality in terms of making environmentally friendly decisions. The current section is related to the detailed explanation of the hypotheses suggested in the context of the available body of literature, which will give more insights into the correspondence or inconsistency of the proposed findings with the previous studies.

5.2.1 Consumer Environmental Awareness and Eco-Guilt

The research question associated with our Hypothesis 1 (H1) is as follows: Does consumer environmental awareness have a significant relationship with eco-guilt? According to the findings of data processing, there is a high level of evidence to

this hypothesis, that is, people with increased environmental awareness have more chances of getting the feeling of eco-guilt.

The research connects the environmental awareness of consumers (stimulus) and eco-guilt (organism) in a positive way, and this confirms the first relationship in Stimulus- Organism- Response (S-O-R) model. According to the model, the environmental awareness produces external stimulus, which in turn causes internal emotional condition, and results in moral or behavioural reaction. In this instance, the heightened recognition of environmental issues leads to feeling of moral obligation and guilt of making self or group contribution to environmental degradation. This research aligns with the previous ones, including (Nielsen & Gössling, 2024) and (Salem & Imed, 2022), which suggested that people who more educated about the problem of ecological issues are more likely to feel guilty. Likewise, (Zeng & Zhang, 2023) realized that awareness of environmental issues and their dangers makes them feel more responsible and thus they act in a more ecologically friendly manner. In simple terms, the findings indicate that the more aware individuals tend to be of environmental harm including pollution or excessive consumption of plastic, the greater the likelihood of the individual experiencing guilt and being driven to be environmentally responsible in their attitudes. This emphasizes the emotional connection of knowledge and moral responsibility. Additionally, the study contributes to the increased literature on sustainability and consumer psychology since it empirically confirms the importance of the environmental awareness as a key psychological driver or antecedent of eco-guilt. It also enhances the theoretical basis of S-O-R model by demonstrating the possible role of cognitive awareness in arousing emotional reactions with a resultant pro-environmental behaviour. The marketers, educators, and policymakers can use this knowledge to conduct awareness campaigns to encourage sustainable behaviour.

5.2.2 Eco-Guilt and Environmentally Friendly Choices

This research confirms that eco-guilt plays a major positive role in environmentally friendly decisions, which means that consumer-acquired feelings of guilt because of environmental degradation encourage them to adopt pro-environmental

behaviour. This finding confirms Hypothesis 2: "Eco guilt has a positive influence on environmentally friendly choices" and is in line with previous research that identified eco-guilt as a moral emotion, which can convert awareness to corrective action and facilitates people to act more sustainably (Niu, 2024; Culiberg & Elgaaied-Gambier, 2021) and (Jaskiewicz & Przepiórka-Blachuta, 2023).

eco-guilt cause people to feel the moral obligation to make things right. This emotion drives them to purchase eco friendly products, not use plastic, and support brands that are environmentally friendly (Salem & Imed, 2022). The participants that indicated a higher eco-guilt in this study were more ready to buy FMCG products with an environment friendly packaging.

The results are also relevant to the Stimulus-Organism-Response (S-O-R) model that was applied in this study. When an environmental stimulus arises, eco-guilt (organism) is an emotional response that causes a behavioural response, such as selecting eco-friendly products. Eco-guilt in this sense is a middle ground between awareness and action, between what people have know about environmental issues, and what they do about them.

Such results are particularly significant in Pakistani context. The plastic pollution, waste mismanagement and smog are the problems which make people more conscious about damaging the environment in their day-to-day life. This awareness normally comes with guilt and responsibility which motivates them to alter their behaviour. Thus eco guilt can be regarded as a significant emotional driver which allow consumers to transition between being aware of environmental issues and making more environmentally friendly shopping decision in their daily shopping.

5.2.3 Moderating Role of Price Sensitivity

The analysis also confirmed that the relationship between eco-guilt and environmentally friendly choices significantly depends on the price sensitivity, which proves Hypothesis 3: price sensitivity moderates the relationship between eco guilt and environmentally friendly choices, such hat the relationship is weaker when price sensitivity is high. Findings also indicated that the positive effect of the

eco-guilt on green purchasing behaviour is less when consumers are highly price sensitive. The results are consistent with the earlier studies, (Ghali-Zinoubi, 2020; Xing & Liu, 2022) and (Nguyen et al., 2025) which confirmed that even green consumers can drop sustainable choice in the presence of increased prices. The emotional motivation like guilt may facilitate positive intentions but economic constraints may frequently restrict the transformation of these intentions into actual purchasing behaviour. The affordability is a determining factor in the context of Pakistan where a significant share of consumers makes up the middle and lower-middle income brackets (Rana & Siddiqui, 2024). These consumers are also likely to experience an eco-guilt and have a sense of their environmental responsibility, but the increased price of eco-friendly products decreases their probability to buy them. This points out to a very important attitude-behaviour gap, in that good intentions do not always translate to actual behaviour because of financial constraint. The price sensitivity role as moderating factor therefore highlight the importance of affordable sustainability. Firms and policy makers need to take into consideration pricing strategies, subsidies and sourcing locally to ensure that eco-friendly products are made more affordable to cost-sensitive consumers. Emotional motivators such as eco-guilt can be better converted into an ongoing sustainable consumption behaviour by reducing the price barrier. Overall, these results give a solid empirical support to the idea that, though eco-guilt constitutes a powerful emotional response, the likelihood of its success in determining environmentally friendly options is determined, on the economic background, by price sensitivity. In such markets as Pakistan, there is a need to bridge this affordability gap in order to transform moral motivation into outcomes of environmentally friendly behaviour.

5.3 Theoretical Contribution

The study adds to the existing literature on the topic of environmentally friendly choices and sustainable consumption of consumers in the Pakistani context. The results both clarify the importance of environmental awareness and eco-guilt in

affecting the environmentally friendly choices of consumers, as well as how price sensitivity constrains their intentions to do so. This research is meaningful because it shows the in-field experiences of consumers who want to make responsible decision but are limited by financial means and by the lack of choices in the market.

It is based on the Stimulus-Organism-Response (S-O-R) model to understand that the external knowledge of environmental issues (stimulus) can influence internal psychic states like eco-guilt (organism), and can in turn affect the behavioural responses (response) in the shape of environmentally friendly choices. The analysis of this model through the perspective of the consumer lends a theoretical contribution to the study since it demonstrates how such emotions as guilt can influence eco friendly choices adoption yet also interact with real world affordability barriers.

The study is also critically examine previous literature which provide insight into research carried out in other countries based on the same framework. It is worth noting that the literature that exists primarily originates from countries such as Germany, U.S.A, U.K, Brazil, Canada, Australia, Austria, Finland, Denmark, Malaysia, and Singapore, India and China (Tamboli & Hande, 2023; Culiberg & Elgaaied-Gambier, 2021; B. Yue & Sun, 2020). These researches mostly revolve around consumer purchase intention, environmentally friendly behaviour in high-income markets where the consumers have easy access and affordability to green products. Nevertheless, a very little study has been conducted on the applicability of the same theoretical framework to price-sensitive and resource-constrained settings, including South Asia. As a result, this thesis has a significant value in that it will be able to test the emotional and economic aspect of the S-O-R model in Pakistan where consumer intentions to act in a sustainable way are often opposed to financial and structural constraints.

In addition, the fact that eco-guilt is included as a mediating factor is a significant theoretical development. Although earlier researchers have simply viewed eco-guilt as emotion, this study makes it a psychological aspect between the aspects of awareness and behaviour. It unveils that eco-guilt is not a just a kind of uncomfortable emotion but also a moral incentive that pushes people to consider environmentally friendly choices into their daily life. Nevertheless, in a situation

of financial limitations, even the morally driven consumers can fail to take action on their intentions. This duality enhances our perception of intention behaviour gap on eco friendly consumption. Besides, the moderating factor of price sensitivity has been introduced. The majority of sustainability theories presuppose that awareness and guilt directly leads toward sustainable consumption (Niu, 2024; Jaskiewicz & Przepiórka-Blachuta, 2023; Nielsen & Gössling, 2024), although this paper has proven that this correlation depends on the economic potential of the consumers. In price sensitive markets such as Pakistan, the economic barriers weaken the weight of the moral emotion hence the reason that willingness does not necessarily translate to action. The study thus makes its contribution in the world literature through the extension of the emotional and economic aspects of S-O-R model and putting them into perspective in a developing economy. It highlights the fact that sustainability cannot be realized as a personal responsibility of individuals only but that it should be approached through the prism of affordability, and accessibility. This way, the study provides a practical and consumer-focused theoretical approach to eco friendly consumer behaviour.

5.4 Managerial and Practical Implications

The study offers important perspectives of the consumer regarding how people emotionally, morally and financially struggle in their attempt to adopt a sustainable lifestyle. The study shows that Pakistani consumers want to make environmentally friendly choices but struggle due to affordability and limited availability of green products. They feel guilty for contributing to environmental pollution but financial constraints hold them back. Marketers and policymakers can use these insights to encourage sustainability. Eco-guilt encourage the adoption of environmentally friendly choices, but affordability is key. Middle and low-income groups are aware of the environmental concerns but are unable to afford sustainable products. Collaboration between environmental organizations and government is crucial to make green products more affordable and accessible. Environmentally friendly consumption can be promoted through subsidies, tax incentives

and awareness campaigns. Subsidies, tax incentives, and awareness campaigns can encourage sustainable consumption. Businesses should understand that price is one of the major barrier to the adoption of green products. Prices can be lowered through cost-effective approaches such as local sourcing and reuse of recyclable materials. Moreover, environmentally friendly packaging and business operations would allow the firms in the competitive FMCG market to stand out. When a brand truly aligns its operations to professional environmental values, it creates a relationship of trust, emotional attachment and long-term loyalty among consumers. This study demonstrates that such emotions as guilt can be reinforced by awareness and affordability to maintain customer attachment and promote responsible brand loyalty. Lastly, in long term strategic terms, making investment in sustainability is consistent with global objectives like the United Nation Sustainable Development Goal 12 (Responsible Consumption and Production). In engaging sustainable practices companies not only help protect the environment but they also improve brand image and competitiveness. Companies that act responsibly will be in a stronger position to influence the attraction of loyal customers, gain public and government support, and drive Pakistan towards a more sustainable economy. Overall, this paper has pointed out that appeal to emotions is not sufficient enough to support environmentally friendly choices. The only way to make real progress is to have a level of awareness, affordability and availability. By converting environmentally friendly options into a viable and accessible choice through the collaborative efforts of businesses, the policymakers, and consumers, Pakistan can step a step closer to the realm of a greener, cleaner and more sustainable future.

5.5 Limitations and Future Research

In the context of Pakistan, there are some limitations in this study that lead to open opportunities in conducting future research. By addressing these limitations, future research can further improve understanding of the psychological, emotional, and economic factors influencing sustainable consumption behaviour.

Firstly, the study used a cross-sectional research design, the data was taken only once in a particular period of time, which did not allow proving cause-and-effect connections between environmental awareness, eco-guilt, price sensitivity, and environmentally friendly choices. It would be interesting to carry longitudinal studies where the research subjects are followed over time to find out the way the emotional and behavioural pattern changes in line with the rise in awareness of the environment and the availability of product choices.

Secondly, although eco-guilt was examined as a mediating variable in this study, future studies can examine other types of emotion mediators, eco-pride, empathy, or environmental concern, which also have the capability to mediate the relationship between green purchasing behaviour. In addition, the possible moderating factors include the income level, perceived behavioural control, or cultural values that would give a wider perspective regarding the influence of individual differences in the process of making environmentally responsible decisions.

Thirdly, the generalizability should be taken into consideration. The research was conducted among the urban consumers in Rawalpindi and Islamabad, which usually are more exposed to environmental information and highly educated than the rural population. In order to improve the external validity of future research, the sample should be more diversified in terms of city, income level, and education level. Also, the comparison between Pakistan and other developing states in South Asia may help to identify some useful cross-cultural insights on the relationship between economic and emotional variables in determining sustainable consumption.

It is also proposed that future research should consider using mixed-method research design, which would entail quantitative surveys and qualitative interviews or focus groups. It will allow more detail exploration of how consumers think about eco-guilt, financial constraints and environmental responsibility in their own lives. Moreover, the partnership with the community agencies, Non-Governmental Organizations and academics can bring more feasible findings and assist in translating the research results into practical policies that will foster eco friendly consumer behaviours.

By overcoming these constraints and seeking other new research path, more studies can be done and shed more light on the psychological, emotional and economic aspects of sustainable consumption. This will be added to the internationalisation effort of fostering environmental responsibility behaviour which is in tandem with the intentions, capability and socio-economic realities of the consumers.

5.6 Conclusion

This thesis has considered the relationship between environmental awareness and eco-guilt with environmentally friendly choices of consumers in the FMCG sector of Pakistan with the price sensitivity as a moderator. The results verify that the development of a greater environmental awareness in people is accompanied by feelings of guilt and the moral need to act in a responsible manner, but it is usually constrained by financial considerations. These findings indicate that consumers are not unwilling but they are unable. They are aware that they have a role to play in saving the environment but they do not have cheap and reliable environmentally friendly alternatives. The price sensitivity is a major factor, which undermines the relationship between guilt and behaviour proving that sustainable consumption can not be entirely based on emotional motivation. The paper confirms the Stimulus-Organism-Response (S-O-R) model to understand consumer eco friendly behaviour in the developing nations and transfers it by incorporating moral emotions and monetary limitations. It demonstrates that awareness and guilt are not trivial psychological motivations but they should be accompanied by economic viability of behaviour change to take place.

In conclusion, this study highlights the importance of the fact that sustainability can be delivered not only by the willingness of consumers but also by accessibility and affordability of the products. Environmental progress in Pakistan will be achieved when green products are accessible, low-cost and reputable, such that the consumers that want to make accountable decisions can easily act. With this knowledge we can bring ourselves nearer to the gap between environmental intention and ordinary action.

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Appendix A

CAPITAL UNIVERSITY OF SCIENCE & TECHNOLOGY
ISLAMABAD

SECTION-ONE: PREAMBLE

Research Questionnaire

Dear Participant,

We are carrying out a survey on customer behavior towards eco-friendly choices, in the Fast Moving Consumer Goods Industry (FMCG). We would appreciate your participation by answering all questions related to this research. This questions and answers session shall not take more than 5 minutes. Your participation in this survey is completely voluntary, and you may discontinue the survey at any time. All the information provided by you shall be kept confidential, and will be used for academic purposes only.

SECTION TWO: GENERAL INFORMATION

Please tick the appropriate box that indicates your level of agreement.

Gender: ☐ Male ☐ Female

Age: ☐ 25–34 ☐ 35–44 ☐ 45–55

Province: ☐ Punjab ☐ Others

Occupation: ☐ Private Sector ☐ Government Sector ☐ Own Business ☐ Others

Income (PKR): ☐ 50,000 ☐ 50,000–75,000 ☐ 75,001–100,000 ☐ Above 1 lakh

SECTION THREE: STUDY QUESTIONS

Please tick one column per statement, to indicate your response towards the statements below. The response scale is based on seven options including; strongly agree, agree, neutral, and strongly disagree.

Serial Number	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	The use of plastic bags in daily life is dangerous for the environment.					
2.	Buying products packed in plastic bottles is harmful to the society.					
3.	Using environmentally friendly packaging keeps the earth clean.					
4.	Every day buying of single use plastic spoils the environment.					
5.	Cutting trees is putting the future of earth in danger.					
6.	Landfill and plastic waste in the rivers and ponds is harmful to our society.					
7.	I feel concerned to see plastic and packing waste around my place.					
8.	Seeing plastic waste not being recycled makes me feel sorry for our earth.					
9.	I blame myself for damaging the society in which I live.					
10.	I feel concerned when I do not choose society friendly products.					
11.	I feel guilty when my family and friends don't use friendly products.					
12.	Using packaging material that damage our earth make me feel guilty.					
13.	I understand the harm being done to our enviornment by non friendly products.					

14.	I prefer to buy products that are packed in environment friendly material.					
15.	I have shifted towards buying environmentally friendly packed products.					
16.	I choose and buy products that are not harmful for planet earth.					
17.	I avoid using washing powder that are harmful for the society.					
18.	I check the price before buying products.					
19.	Price is the factor I usually consider when choosing products.					
20.	Price is not an important thing for me when I choose products.					
21.	I can pay more for environmentally friendly products.					
22.	I don't consider price when buying environmentally friendly products.					

THANKYOU VERY MUCH FOR GIVING YOUR PRECISOUS TIME!!
MUCH APPRECIATED