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Green Consumption of Electronics: Bridging the Gap between Awareness and Action

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Abstract
With the rapid economic growth and industrialization, the consumption pattern of consumers is a major reason for environmental deterioration. With the increased energy demand followed by inadequate supply, there is a need to adopt eco-friendly electronic products that are safer for the environment and consume less energy. It is now the responsibility of organizations to create awareness among consumers regarding the benefits of using eco-friendly electronic products for both the current and future generations. For conducting this research, the data was collected from 430 consumers from Lahore, out of which 400 questionnaires were used for analysis. The present study shows the impact of green awareness on green consumption by incorporating several latent variables including environment knowledge, environment consciousness, green loyalty, and eco-labelling. The results show that environmental knowledge and consciousness significantly affect green awareness creating consumers' understanding towards environmental issues. Additionally, green loyalty reflects consumers' commitment to eco-friendly products and it significantly impacts consumer green awareness. Eco-labelling is an information tool influencing consumer choices that positively affect green awareness. Each latent variable directly impacts green consumption, suggesting that approaches to enhance green awareness can significantly affect green consumption towards eco-friendly electronic products.

Keywords: Eco-friendly electronic products, Eco-labelling, Energy demand, Environmental knowledge, Green consumption, Green loyalty, Structural equation modeling

1. Introduction

Globalization is a driver in the adoption of green energy sources, which have lower environmental impacts as compared to conventional technologies and are created using natural resources including solar power, wind power, hydropower, and geothermal energy (Bhowmik et al., 2017). Green home appliances are energy-efficient and designed to increase energy efficiency and lower utility bills. The efficiency of the device will result in less use of energy. For instance, inverter air conditioners reduce electricity by 25-30% (Teoh et al., 2022). There are many green home appliances available in the market including inverter air conditioners, lighting, washing machines, refrigerators, ovens, televisions, and many more. Purchasing energy-efficient appliances benefits the economy and the environment (Bhutto et al., 2020). Policymakers in sustainability are emphasizing the responsibility of individual consumers to consider the environmental effects of their actions (Ek & Söderholm, 2010). The consumption patterns which are based on traditional practices are not sustainable (Tseng et al., 2013). There is a need to encourage consumers to adopt low-carbon practices which is crucial for emission reduction and energy conservation (Yang et al., 2020). The study by Maji (2015) showed that a 1% increase in green energy consumption contributes to nearly 1.26% economic growth (Maji, 2015). In response to climate change and global warming the transition from gasoline to electric vehicles (EVs) can significantly reduce the carbon footprint and improve air quality (Gulzari et al., 2022; Tang & Azman, 2024). Low-carbon technologies are crucial for reducing emissions, promoting a green economy, and environmental preservation for future generations (Zhang et al., 2020; Situngkir, 2024).

From the perspective of environmentalism, Eco-efficiency focuses on the use of sustainable resources that promote economic development and reduce greenhouse gas emissions (Asif et al., 2023). Sustainable consumption refers to the use of products and services with minimal environmental impact for current and future generations. Markets and profit motives are the drivers of consumption, while calls for sustainable development aim to limit negative effects on the environment, economy, and societies (Al-Nuaimi & Al-Ghamdi, 2022). A green consumer is someone who supports eco-friendly practices and has preferences for green products over standard alternatives (Ahmad & Zhang, 2020). Green consumer behavior (GCB) refers to the decision-making of an individual that considers environmental or social issues while purchasing (Peattie, 2010). Researchers argue that human consumption patterns are the primary contributors to environmental harm indicating a growing recognition of ethical consumerism and ecological protection in recent years (Ishaq et al., 2021). According to the GEO–2000 report, the two main reasons for environmental degradation are that the majority of people continue to suffer from poverty and the minority is involved in excessive consumption (UNEP, 2023). There is an urgent need for change in people's consumption habits to ensure a healthy and safer lifestyle for both the present and future generations (Nekmahmud et al., 2022; Al Masri & Wimanda, 2024).

Environmental pollution is among the global problems the world is currently facing. The lifestyles of people on Earth are not sustainable (Průša & Sadílek, 2019). Green marketing involves all activities aimed at fulfilling human needs and desires while minimizing environmental impact (Průša & Sadílek, 2019). Green marketing provides benefits to the company as well as acts as an important strategy for preserving the environment (Ahmad & Zhang, 2020). The main focus of traditional marketing is on satisfying immediate consumer needs. Consumers used to ignore post-consumption effects and the impact of their consumption on quality of life. Consumers appreciate companies who satisfy their extravagant wants of them. Due to this, the quality of life in the long run deteriorates (Quoquab & Mohammad, 2020). The management and planning of energy resources are crucial for economic growth and have a close link to sustainable development (Cai et al., 2011). The transformation of energy to consumption process often leads to increased greenhouse gas (GHG) emissions which is a global issue (Ur Rehman et al., 2019). Due to the increased middle-class segment in Pakistan, there is a significant increase in demand for home appliances and electronics, including TVs, washing machines, and air conditioners (Asif et al., 2023). So, there is an increased need for energy-efficient appliances to maintain environmental sustainability. In Pakistan, household energy consumption comprises 85% of the total energy consumption in the country (Ali et al.,

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2019). There is an increasing trend in the consumption of energy while the supply is inadequate in the case of Pakistan. As a country with increased energy demand, Pakistan is facing an energy crisis. The current shortfall of energy in Pakistan is almost 5000MW. The reason for the increased electricity demand is heavy residential loads (Chughtai et al., 2023; Bibi et al., 2024). It is estimated that the cost of a shortage of energy to the country is 4% of its GDP (Bhutto et al., 2020). Previously, researchers have applied the theory of planned behavior (TPB) to examine consumers' intention to purchase energy-efficient appliances. This included various factors such as price, environmental concerns, and environmental knowledge (EK) and ethical norms (Asif et al., 2022). EK has a significant influence on consumers' willingness to purchase energy-saving products. To improve EK and awareness among consumers, eco-labeling acts as a major tool to create awareness about eco-efficient appliances (Testa et al., 2015). The increasing number of environmentally-conscious consumers is creating opportunities for businesses to incorporate "eco-friendly" or "environmentally friendly" elements into their value proposition (Ahmad & Zhang, 2020). Moreover, Consumer interaction with green innovation products plays a significant in implementing consumer behavior (Khan et al., 2022; Rossi, 2023). To save electricity, companies are developing innovative solutions and are focusing on environmental sustainability and usage reduction while maintaining the same performance (Hameed & Khan, 2020). There is an increased focus among policymakers on energy and economic planning with environmental considerations (Ur Rehman et al., 2019). Over time, consumer support for environmental protection has increased, leading to an increase in the demand for green products (Kearney, 2014; Martin & Simintiras, 1995; William, 2023).

Literature on green consumer behavior is very limited in the case of underdeveloped countries (Ottman et al., 2006). This study aims to examine the impact of various factors on the green purchase behavior of electronic products among consumers in Pakistan. Various studies have been conducted in both developed and developing countries regarding green purchase behavior (Ahmad & Zhang, 2020; Ali et al., 2019; Asif et al., 2023; Bhowmik et al., 2017; Ek & Söderholm, 2010). However, little attention has been paid to Pakistan from the perspective of green marketing and consumer behavior toward the purchase of eco-friendly electronics. Pakistan has committed to decrease its emissions by 20% compared to a baseline estimate by 2030. To promote energy efficiency in various sectors it is recommended to set energy performance standards for appliances, equipment, and machinery and prohibit the manufacture, import, or sale of appliances that do not meet these standards (The World Bank, 2019).

2. Literature Review

Sustainable consumption is the process of reducing natural resource consumption, changing lifestyles, and consuming environmentally friendly products to meet current and future generations' needs (Biswas & Roy, 2015). Academic groups have been increasingly focused on understanding sustainable consumption behavior in recent years. Different models have been developed to understand green consumer behavior (Wang et al., 2014). After being influenced by EK and ness the next step for consumers is to get involved in green buying behavior (Adeola Adetola Ayodele et al., 2017). The consumer of green products is always committed to environmental conservation (Witek & Kuźniar, 2020). A study by Gam et al. (2010) shows that consumers are unwilling to pay more for green products.

The Global concern over environmental degradation is increasing with time as the environment continues to worsen (Sharma & Bansal, 2013). A study by Stanley and Lasonde (1996) found that consumers who are more involved in environmental issues are more likely to evaluate the true merits of consumption and production than those who are less involved. Environmental conscious behavior is increasing to attain sustainable development (Kautish & Sharma, 2018). Environmental consciousness (EC) has a significant influence on individuals' motivation to change their behavior and social practices to address environmental issues (Jones & Dunlap, 2010). A study by Van Doorn and Verhoef (2011) revealed that consumers' interest in EC and willingness to pay for sustainable products is growing. Green customers are those who are more conscious about green products. Environmental consciousness has a positive impact on green purchase behavior (Wang et al., 2014). Over the past decade, environmental concerns have increased, leading to increased programs aimed at reducing their impact on the ecosystem (Gleim et al., 2013). Consumers who are more conscious of the environment prioritize environmental protection and its impact on human health and society (Prentice et al., 2019). Recent years have seen different opinions on green consumerism. Some researchers argue that consumers' purchasing decisions are based on extrinsic motivations rather than intrinsic environmental concerns. Therefore, many authors have assessed green consumerism differently and a range of contradictory arguments can be found (Akehurst et al., 2012). The importance of environmental concerns was also observed in the purchase of hybrid cars (Wang et al., 2017).

Various studies show that there is a positive relationship between environmental concern and green purchase behavior (Nekmahmud & Fekete-Farkas, 2020; Zhang et al., 2019).

A classic meta-analysis approach found that EK significantly predicts environmentally friendly behaviors (Liu et al., 2020). Knowledge about environmental problems is crucial for environmental consciousness and action (Gifford & Nilsson, 2014). Studies show that while EK is important for influencing behaviors, it is insufficient to encourage eco-friendly actions (Fryxell and Lo, 2003). The consumers' EK has a positive effect on environmental attitudes and sense of well-being and this influences their purchasing behavior (Lin & Niu, 2018). A study by Waris & Hameed (2020a) indicates that consumers are aware of the environmental benefits of energy-efficient appliances, suggesting that marketers should design products that contribute to sustainability. Studies show that EK is positively correlated with green purchasing behavior (Pagiaslis & Krontalis, 2014). Knowledge of renewable energy increases consumers' intention to pay more for sustainable energy sources (Bang et al., 2000).

While some studies show that there is no significant relationship between EK and pro-environmental behavior (Laroche et al., 2001), other studies revealed a significant relationship between green knowledge and green purchasing behavior (Amoako, Dzogbenuku, & Abubakari, 2020; Yadav & Pathak, 2016).

Perceived benefits are the advantages that fulfill consumers' needs and desires (Wu, 2003), and play a crucial role in motivating consumption intention and behaviors (Yang, Tu, et al., 2020). Consumers are often more likely to engage in behaviors where the benefits exceed the costs (Lin, 2015). Among low-income households' quality benefits are the most prevailing benefit to adopting intention behavior while among higher-income households energy saving benefits are the most prevailing benefits (Akroush et al.,

2018). A study by O'Driscoll et al. (2013) identifies the reasons for adopting renewable energy systems as energy cost savings, environmental benefits, and independence from conventional energy sources. A study shows that green perceived benefit has a strong positive influence on consumers' green purchase decisions (Nekmahmud & Fekete-Farkas, 2020). To increase consumers' perceived value of green products, marketers must highlight the function of such products, create a positive environmental image, and communicate ecological value to customers (Liao et al., 2020).

Eco-labeling is used to inform a consumer about the environmental impact of their consumption throughout the life cycle of the product (Wojnarowska et al., 2021). Eco-labels can increase consumer confidence in eco-friendly products (Bougherara & Combris, 2009). Eco-labeling aims to educate consumers about the environmental impact of their consumption and to encourage sustainable consumption, while also motivating governments and producers to meet environmental standards (Galarraga Gallastegui, 2002). Consumers are used to evaluating the quality of green products by looking at the eco-labels (Gandhi, 2020). The study by Waris & Hameed (2020b) indicates that consumers' understanding of eco-labels significantly influences the functional values and green trust of products. A study by HASHIM et al. (2018) concluded that eco-labeling has a positive influence on the purchase of home electronic products in Malaysia. A study by Nguyen -Viet (2022) showed that Eco-labels promote green purchase intentions and brand equity creation. Eco-labels are a source of information for consumers regarding the environmental impact of their consumption and they help them identify the environmentally preferable products. Firms can get help by eco-labeling to attract consumers based on trust and reliability.

Consumer trust and decision-making regarding energy-efficient home appliances largely depend on information on ecolabels. Marketers should standardize and enhance the supervision of the eco-labeling scheme (Waris & Hameed, 2020b). Environmental protection labels should be attached to green product packaging by enterprises. This information can encourage consumers to play their part in environmental protection (Wang et al., 2019). Nguyen et al. (2016) concluded the study by suggesting that information about the benefits and energy rating labels should be mentioned on energy-efficient appliances for consumer knowledge.

In today's competitive environment, maintaining loyal customers is crucial for organizations to develop (Panda et al., 2020). Consumer attention towards eco-friendly products is increasing which indicates that consumers are more likely to be loyal to products that support environmental issues (Maniatis, 2016). Hence, loyalty towards green products can influence consumers' green purchasing decisions (Damayanti & Audita Nuvriasari, 2021).

Research shows that customers who are satisfied with the purchase of green products are more likely to purchase again, tolerate higher prices, and recommend the products to others (Chang & Fong, 2015; Hur et al., 2012). However, customers who are not satisfied with the purchase are more likely to switch to other brands because of their failed expectations (Moon et al., 2016). A study by Nazim et al. (2020) shows that stronger consumer loyalty towards a product brand leads to increased purchasing decisions. Various research indicates that customer loyalty is positively associated with purchase behavior (Souiden & Pons, 2009; Yaseen, Tahira, Gulzar, & Anwar, 2011). Consumer loyalty towards sustainable development plays an important role for companies to take advantage of green opportunities (Balmer et al., 2009). A study by Amoako, Dzogbenuku, Doe, et al. (2020) found that customer loyalty influences them to buy more from the organization committed to green marketing. The increased customer loyalty can overlook the price increase. So, customer loyalty can help to pass on green marketing costs.

Green innovation plays an important role in sustainable development and aims to minimize the negative environmental impact of product recycling stages (Khan et al., 2021). The focus of green technology innovation is on developing technologies and products that conserve energy and raw materials while enhancing energy efficiency (Trapp & Kanbach, 2021). Green innovation reduces environmental damage and promotes sustainability. The increased knowledge and awareness about green innovation can lead to increased intention to purchase eco-friendly products (Setiawan et al.,2024). Wang et al. (2019) suggested that marketers should create an environmental brand image and also should come up with innovations in green products to meet the expectations of consumers and to increase consumers' trust towards the green products. Customer engagement and green innovation will motivate consumers to buy eco-friendly products (Zameer & Yasmeen, 2022).

3. Theoretical Framework

The theoretical framework outlines the relationships between variables related to the situation problem and explaining these relationships. The following theoretical framework is suggested for the current study. There is a higher order independent variable formed by combining 6 latent variables named as Environmental Knowledge (EK), Environmental Consciousness (EC), Green Perceived Benefits (GPB), Eco-Labeling (EL), Green Loyalty (GL) and Green Innovation (GI) that affects the dependent variable Consumer Behavior (CB).

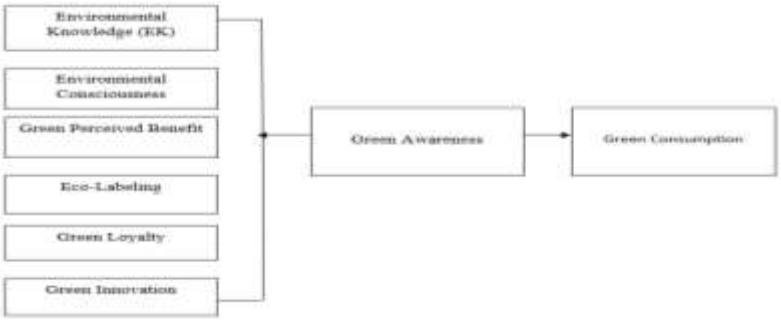

Figure 1: Model to study impact of Green Awareness on Green Consumption

Based on the above discussion, the following relationships are hypothesized:

Hypothesis 1a: Environmental Knowledge (EK) is a factor of green awareness (GA)

Hypothesis 1b: Environmental Consciousness (EC) is a factor of green awareness (GA)

Hypothesis 1c: Green perceived benefit (GPB) is a factor of green awareness (GA)
Hypothesis 1d: Eco-labeling (EL) is a factor of green awareness (GA)
Hypothesis 1e: Green loyalty (GL) is a factor of green awareness (GA)
Hypothesis 1f: Green innovation (GI) is a factor of green awareness (GA)
Hypothesis 2: Green Awareness (GA) has a significant impact on green consumption (GC)

4. Methodology

4.1 Sampling, Data Acquisition, and Estimation Method

This quantitative research aims to investigate the factors influencing consumer behavior towards environmentally friendly electronic products in Pakistan. A cross-sectional survey design will be employed to collect data from a sample of consumers using structured questionnaires. The unit of analysis for this study is the individual respondents who are the users of green electronic products. The individuals participating in the study must have buying power and also, they were educated so they were able to participate and respond to the survey (Floh & Madlberger, 2013). The data collected from each respondent will contribute to the overall analysis of the relationships between independent variables (e.g., EK, consciousness, loyalty, innovation, perceived benefits, eco-labeling) and the dependent variable (green consumption). The population of this study is the consumers from Lahore. The sample size of the population is 430 consumers. Researchers revealed that a 300-500 sample size can be of good standard for large population (Comrey & Lee, 1992). The data was collected from three famous malls of Lahore including Packages Mall, Emporium Mall, and Fortress Square Mall. Out of 430 questionnaires, 330 were distributed in the mentioned malls. The remaining 100 questionnaires were shared by Google Forms with the potential consumers. 400 questionnaires are used for further analysis. For any study measurement is compulsory. The data collection was based on the questionnaire using a 5-point Likert scale. SPSS software has been used in the research process to check the quality of questionnaire material. Bryman (1984) revealed that the Questionnaire is considered the preferred method for research that is quantitative. The likert scale follows the following pattern, 1= Strongly Disagree (SD), 2= Disagree (D), 3= Neutral (N), 4= Agree (A), 5= Strongly Agree (SA). The data collected from the questionnaires was arranged and punched in MS Excel into simple tabular form and further, it was copied to SPSS software where the coding took place. In the beginning, the missing values and outliers were treated in SPSS. CRONEBACH ALPHA was checked to analyze the reliability of the instruments. Further, the Structural equation modeling (SEM) technique was applied to analyze the relations among variables.

4.2 Estimation Method

The present study has developed higher order Green Awareness variable (dependent variable) with the help of six first order latent variables. The independent variables EK, Environmental consciousness, Eco-labeling, and Green loyalty contain 7 items each, while Green perceived benefit consists of 5 items and green innovation consists of 6 items. The dependent variable Consumer behavior consists of 7 items. Exploratory Factor Analysis (EFA) was conducted to see how many of the considered variables are measuring various variables of the study.

5. Result and Discussion

5.1 Exploratory Factor Analysis (EFA)

EFA was conducted in the first stage of analysis. Five measurement variables were used to determine the EK variable. Similarly, the variables environmental consciousness, green loyalty, eco-labeling, and consumer behavior were determined with the help of 5, 7, 7, and 6 measurement variables respectively. The results of EFA are presented below.

The value of Cronbach's alpha checks the internal consistency reliability and its value must be equal or greater than 0.70 (Santos, 1999). It shows that all the variables have internal consistency reliability as the values are greater than 0.70. The values of CR lie between 0 and 1 and the desirable CR values should be greater than 0.60. A CR value ranging between 0.70 and 0.90 is regarded as more acceptable and adequate. It can be observed that all CR values fall with the desirable threshold range of 0.70 to 0.90. This suggests that the measurement model of this study is highly reliable. As, the instruments are reliable the next step is to check for convergent validity. Convergent validity assesses the degree to which constructs have a theoretical relation with each other. Average Variance Extracted (AVE) is used in order to measure the degree of convergence amongst the constructs. The acceptable threshold value for AVE is 0.50 and above. But, studies show that AVE values above 0.3 are also acceptable (Fornell & Larcker, 1981). The above table depicts that all values of AVA surpass the minimum threshold level of AVA. Hence, the presence of convergent validity is confirmed. Factor loading is a method where multiple items are used to measure a variable, illustrating the contribution of each individual item (Lambert et al., 1991). The loadings of less than 0.30 are considered to be low and above are considered satisfactory. Whereas, the loading of greater than 0.70 are considered as high and favorable. EK2, EK3, EC1, EC6, and GC7 are deleted from the analysis due to low factor loading. Two variables green perceived benefit and green innovation are also deleted from the analysis due to the low factor loadings. The minimum factor loading for a measurement variable was 0.409 and maximum factor loading was 0.786. In this way, all the other measurement variables except above mentioned were retained for the confirmatory factor analysis (CFA). The minimum factor loading for a measurement variable was 0.409 and maximum factor loading was 0.786.

5.2 Confirmatory Factor Analysis

CFA was performed to confirm the factor structure identified in the EFA. The model fit indices (CFI and GFI $\geq$ 0.90, RMR and RMSEA $\leq$ 0.08) for all variables indicated a good fit between the hypothesized model and the observed data.

The results suggest that the constructs measured are valid and reliable representations of the underlying factors. The significant path coefficients for EK, Environmental Consciousness, Eco-Labeling, and Green Loyalty further validate these constructs as indicators of green awareness.

5.3 SEM Analysis

SEM analysis is presented in Figure 2 and the values of all the fit indices are according to defined limits given in Table 2. We can consider this model is good fitted as the value of CFI and GFI are greater than 0.90 and values of RMR and RMSEA are less than maximum limit of 0.08. The detail results of SEM are presented in Figure 2 showing coefficients of different paths.

Table 1: EFA Results

Variables and Measurements	Factor Loadings	Cronbach's Alpha	Average Variance Extracted (AVE)	Composite Reliability (CR)
Environmental Knowledge		0.794	0.33	0.70
EK1	0.614			
EK4	0.549			
EK5	0.438			
EK6	0.737			
EK7	0.504			
Environmental Consciousness		0.830	0.37	0.73
EC2	0.409			
EC3	0.461			
EC4	0.621			
EC5	0.727			
EC7	0.758			
Eco-Labeling		0.878	0.48	0.86
EL1	0.563			
EL2	0.676			
EL3	0.708			
EL4	0.756			
EL5	0.765			
EL6	0.755			
EL7	0.598			
Green Loyalty		0.73	0.42	0.83
GL1	0.706			
GL2	0.733			
GL3	0.703			
GL4	0.668			
GL5	0.608			
GL6	0.616			
GL7	0.503			
Consumer Behavior		0.789	0.416	0.80
CB1	0.542			
CB2	0.786			
CB3	0.635			
CB4	0.578			
CB5	0.655			
CB6	0.645			

Table 2: Goodness of the Fit Results of Confirmatory Factor Analysis

	x^2/df	CFI	GFI	TLI	RMR	RMSEA
Benchmark values	≤3	≥0.90	≥0.90	≥0.90	≤0.08	≤0.08
Environmental Knowledge (EK)	2.980	0.970	0.986	0.939	0.027	0.070
Environmental Consciousness (EC)	2.670	0.990	0.989	0.974	0.024	0.065
Eco-Labeling (EL)	1.689	0.996	0.992	0.990	0.016	0.042
Green Loyalty (GL)	1.477	0.993	0.987	0.987	0.034	0.035
Green Consumption (GC)	2.741	0.985	0.985	0.968	0.018	0.066

The Figure 2 shows the results of the SEM Model. GC is abbreviation for green consumption and it is the dependent variable, GA stands for green awareness which is the independent variable formed by combining EK, EC, EL and GL. The results of SEM show that the four indicators (EK, Environmental Consciousness, Eco-Labeling and Green Loyalty) of Green Awareness have significant (at 1 % level) path coefficients of 0.94, 0.82, 0.55 and 0.62 respectively. Two variables namely green innovation and green perceived benefit are deleted to improve the results. The results indicate the first hypothesis H1a is accepted which means that EK is a factor of GA as indicated by (β=0.94, p-value = 0.000). The second hypothesis H1b also stands accepted as indicated by (β=0.82, p-value = 0.000). It means that EC is a factor of GA. The third hypothesis H3 is also accepted (β=0.55, p-value = 0.000) which means that EL is a factor of (GA). The fourth hypothesis H4 is validated as indicated by (β=0.72, p-value = 0.000) which means that Green loyalty (GL) is a factor of green awareness. The final hypothesis H2 also stands accepted (β =0.75, p-value =0.000) on the basis which it can be deduced that there is a positive relationship between GA and GC. These results show that all four indicators taken in this study are key indicators of green awareness variable. In this way, hypotheses H1a, H1b, H1c and H1d are validated. The error terms of some of the measurement variables are correlated to improve the fitness of the model. The details of the hypotheses and related decision are presented in Table 3.

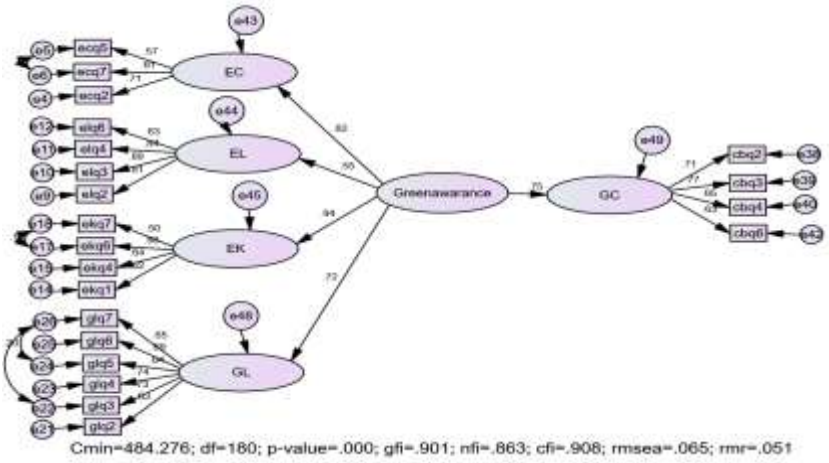

Figure 2: SEM Model

5.3 Test Hypothesis and Results

By utilizing the Theory of Planned Behavior presented by (Ajen, 1991), the Signaling Theory presented by (Spence, 1973), and the diffusion of innovation theory by (Rogers, 1962) along with other constructs, the reason for conducting this research work is to answer some questions and existing relationships among variables included in this study in the context of Pakistan.

Table 3: Test Hypothesis and Results

Hypothesis	β	P-value	Result
Environmental Knowledge (EK) is a factor of green awareness	0.94	0.000	H1a is supported
Environmental Consciousness (EC) is a factor of green awareness	0.82	0.000	H1b is supported
Eco-labeling (EL) is a factor of green awareness	0.55	0.000	H1c is supported
Green loyalty (GL) is a factor of green awareness	0.72	0.000	H1d is supported
Green Awareness has a significant impact on green consumption	0.75	0.000	H2 is supported

6. Discussion

For this study, data was collected from three shopping malls in Lahore. The findings were identical to the hypothesized model. All hypothesis of the model was supported by the study. Results show that EK is a key driver of green awareness with a coefficient of 0.94, at the p=0.000 it means results were significant. The results show that EK has a direct influence on green awareness. Green awareness focuses on the understanding of related eco-friendly behaviors that contribute to sustainability. Green awareness is a subset of environmental awareness. A study by Liu et al. (2020) found that EK significantly predicts environmentally friendly behaviors. Our results are in line with previous studies by Kaiser and Fuhrer (2003) and Frick, Kaiser, and Wilson (2004) who found that increased EK is correlated with higher levels of environmental awareness and pro-environmental behaviors. Results show that environmental consciousness is a key driver of green awareness with the coefficient 0.82, at the p=0.000 which means the results were significant. The result is in line with the Theory of Planned Behavior (TPB) by Ajzen (1991), which highlights the importance of environmental values and consciousness in driving pro-environmental behaviors. Effective communication strategies can enhance environmental consciousness and green awareness (Peattie & Peattie, 2009). A study by Kollmuss and Agyeman (2002) found that individuals with high environmental consciousness are more likely to engage in eco-friendly behaviors. Consumers who are more conscious of the environment prioritize environmental protection and its impact on human health and society (Prentice et al., 2019). Results show that eco-labeling is a factor of green awareness with the coefficient 0.55, at the p=0.000 which means the results are significant. Eco-labels describe that the production process of the product is eco-efficient and therefore, the product is secure for long-term consumption (Alamsyah et al., 2021). Results show that green loyalty is a factor of green awareness with the coefficient 0.72, at p=0.000 which means the results are significant. The support of the hypothesis indicates that consumers who are more aware of environmental issues are more likely to be loyal to green products. The result is in line with the Self-Determination Theory (SDT), suggesting that behavior is driven by intrinsic and extrinsic motivations (Ryan & Deci, 2000). Results show that green awareness has a significant positive impact on consumer behavior with the coefficient 0.75, at the p=0.000 which means the results are significant. Green awareness significantly impacts consumer behavior by shaping attitudes, intentions, and actual purchasing decisions toward eco-friendly products. This result is confirmed by Mourad et al. (2012) stating that green awareness can influence customer behavior toward a preference for eco-friendly products.

7. Implication

The study highlights the importance of consumer education in promoting eco-friendly products, suggesting that educational campaigns and programs should focus on educating consumers about the environmental benefits of green electronics and the significance of eco-labeling. This model presents a picture that green awareness helps to make green consumption behavior and in this way the organization can develop strategies to enhance green behavior to ensure environmental sustainability.

8. Limitation

The main limitation associated with the study is the sample size and this is because the data collected for the study is very limited and was collected in a very short period. The data was collected only from the consumers who were shopping at the three malls of Lahore so it does not include samples from all cities of Pakistan there is the possibility that it may not be the best representative of the entire Pakistani population. People living in different areas may have different consumption patterns due to differences in cultures. Thus, this may limit the generalizability of this study. Future researchers are encouraged to take a more generalized sample of the population to test consumer behavior more generally.

References

Adeola Adetola Ayodele, Amos Ejiro Panama, & Eguononefe Akemu. (2017). Green Awareness and Consumer Purchase Intention of Environmentally-Friendly Electrical Products in Anambra, Nigeria. *Journal of Economics and Sustainable Development*, *8*(22), 98–112.

Ahmad, W., & Zhang, Q. (2020). Green purchase intention: Effects of electronic service quality and customer green psychology. *Journal of Cleaner Production*, *267*, 122053.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211.

Akehurst, G., Afonso, C., & Martins Gonçalves, H. (2012). Re-examining green purchase behaviour and the green consumer profile: new evidences. *Management Decision*, *50*(5), 972–988.

Akroush, M. N., Zuriekat, M. I., Al Jabali, H. I., & Asfour, N. A. (2018). Determinants of purchasing intentions of energy-efficient products. *International Journal of Energy Sector Management*, *13*(1), 128–148.

Al Masri, R., & Wimanda, E. (2024). The Role of Green Supply Chain Management in Corporate Sustainability Performance. *Journal of Energy and Environmental Policy Options*, *7*(2), 1-9.

Alamsyah, D. P., Othman, N. A., Bakri, M. H., Udjaja, Y., & Aryanto, R. (2021). Green awareness through environmental knowledge and perceived quality. *Management Science Letters*, 271–280.

Ali, S., Danish, M., Khuwaja, F. M., Sajjad, M. S., & Zahid, H. (2019). The Intention to Adopt Green IT Products in Pakistan: Driven by the Modified Theory of Consumption Values. *Environments*, *6*(5), 53.

Al-Nuaimi, S. R., & Al-Ghamdi, S. G. (2022). Sustainable Consumption and Education for Sustainability in Higher Education. *Sustainability*, *14*(12), 7255.

Asif, M. H., Zhongfu, T., Irfan, M., & Işık, C. (2022). Do environmental knowledge and green trust matter for purchase intention of eco-friendly home appliances? An application of extended theory of planned behavior. *Environmental Science and Pollution Research*, *30*(13), 37762–37774.

Balmer, J. M. T., Powell, S. M., & Elving, W. J. L. (2009). Explicating corporate identity. *Corporate Communications: An International Journal*, *14*(4).

Bang, H.-K., Ellinger, A. E., Hadjimarcou, J., & Traichal, P. A. (2000). Consumer concern, knowledge, belief, and attitude toward renewable energy: An application of the reasoned action theory. *Psychology and Marketing*, *17*(6), 449–468.

Bhowmik, C., Bhowmik, S., Ray, A., & Pandey, K. M. (2017). Optimal green energy planning for sustainable development: A review. *Renewable and Sustainable Energy Reviews*, *71*, 796–813.

Bhutto, M. Y., Liu, X., Soomro, Y. A., Ertz, M., & Baeshen, Y. (2020). Adoption of Energy-Efficient Home Appliances: Extending the Theory of Planned Behavior. *Sustainability*, *13*(1), 250.

Bibi, C., Tabassum, S., & Roussel, Y. (2024). International Environmental Law: Challenges and Opportunities for Biodiversity Conservation. *Journal of Energy and Environmental Policy Options*, *7*(2), 28-35.

Biswas, A., & Roy, M. (2015). Green products: An Exploratory Study on the Consumer Behaviour in Emerging Economies of the East. *Journal of Cleaner Production*, *87*(1), 463–468.

Cai, Y. P., Huang, G. H., Tan, Q., & Liu, L. (2011). An integrated approach for climate-change impact analysis and adaptation planning under multi-level uncertainties. Part II. Case study. *Renewable and Sustainable Energy Reviews*, *15*(6), 3051–3073.

Chang, N.-J., & Fong, C.-M. (2015). The Influence of Green Product Quality and Green Consumer Behavior on Customer Satisfaction and Customer Loyalty. *Asia-Pacific Journal of Business Venturing and Entrepreneurship*, *10*(6), 37–46.

Chughtai, A., Uqaili, M. A., Mirjat, N. H., & Shaikh, F. U. (2023). Diagnosis of Energy Crisis of Pakistan and Assessment of DSM as Viable Solution. *Engineering Proceedings*, *46*(1), 35.

Comrey, A. L., & Lee, H. B. (1992). A first course in factor analysis. Hillsdale, NJ: Erlbaum.

Damayanti, E., & Audita Nuvriasari. (2021). Pengaruh Green Packaging, Green Advertising, Green Perceived Value, Dan Brand Image Terhadap Keputusan Pembelian Konsumen The Body Shop. *Jurnal Ilmiah Mahasiswa Ekonomi Manajement*, *6*(2), 385–404.

Ek, K., & Söderholm, P. (2010). The devil is in the details: Household electricity saving behavior and the role of information. *Energy Policy*, *38*(3), 1578–1587.

Floh, A., & Madlberger, M. (2013). The role of atmospheric cues in online impulse-buying behavior. *Electronic Commerce Research and Applications*, *12*(6), 425–439.

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, *18*(1), 39–50.

Fryxell, G.E., Lo, C.W., 2003. The influence of environmental knowledge and values on managerial behaviours on behalf of the environment: an empirical examination of managers in China. *J. Bus. Ethics*, 46 (1), 45–69.

Gam, H. J., Cao, H., Farr, C., & Kang, M. (2010). Quest for the eco-apparel market: a study of mothers' willingness to purchase organic cotton clothing for their children. *International Journal of Consumer Studies*, *34*(6), 648–656.

Gifford, R., & Nilsson, A. (2014). Personal and social factors that influence pro-environmental concern and behaviour: A review. *International Journal of Psychology*, *49*(3), 141–157.
Gleim, M. R., Smith, J. S., Andrews, D., & Cronin, J. J. (2013). Against the Green: A Multi-method Examination of the Barriers to Green Consumption. *Journal of Retailing*, *89*(1), 44–61.
Green, T., & Peloza, J. (2014). Finding the Right Shade of Green: The Effect of Advertising Appeal Type on Environmentally Friendly Consumption. *Journal of Advertising*, *43*(2), 128–141.
Gulzari, A., Wang, Y., & Prybutok, V. (2022). A green experience with eco-friendly cars: A young consumer electric vehicle rental behavioral model. *Journal of Retailing and Consumer Services*, *65*(65), 102877.
Hameed, I., & Khan, K. (2020). An extension of the goal-framing theory to predict consumer's sustainable behavior for home appliances. *Energy Efficiency*, *13*(7), 1441–1455.
Hashim, N. H., Yahya, W. K., & Asrul, S. A. (2018). Ethnicity, Social Influence, Eco-Label and Purchase Intention of Consumers of Green Home Electronic Products. *Social and Management Research Journal*, *15*(2), 48.
Hur, W.-M., Kim, Y., & Park, K. (2012). Assessing the Effects of Perceived Value and Satisfaction on Customer Loyalty: A "Green" Perspective. *Corporate Social Responsibility and Environmental Management*, *20*(3), 146–156.
Ishaq, M. I., Sarwar, H., & Ahmed, R. (2021). "A healthy outside starts from the inside": A matter of sustainable consumption behavior in Italy and Pakistan. *Business Ethics, the Environment & Responsibility*, *30*(S1), 61–86.
Jones, R. E., & Dunlap, R. E. (2010). The Social Bases of Environmental Concern: Have They Changed Over Time?1. *Rural Sociology*, *57*(1), 28–47.
Kaiser, F. G., & Fuhrer, U. (2003). Ecological behavior's dependency on different forms of knowledge. *Applied Psychology: An International Review*, *52*(4), 598-613.
Kautish, P., & Sharma, R. (2018). Study on relationships among terminal and instrumental values, environmental consciousness and behavioral intentions for green products. *Journal of Indian Business Research*, *13*(1), 1–29.
Kearney, M. (2014). The new rules of green marketing: strategies, tools, and inspiration for sustainable branding. *Journal of Marketing Management*, *30*(13-14), 1520–1521.
Khan, M. A. S., Du, J., Malik, H. A., Anuar, M. M., Pradana, M., & Yaacob, M. R. B. (2022). Green innovation practices and consumer resistance to green innovation products: Moderating role of environmental knowledge and pro-environmental behavior. *Journal of Innovation & Knowledge*, *7*(4), 100280.
Khan, P. A., Johl, S. K., & Johl, S. K. (2021). Does Adoption of ISO 56002-2019 and Green Innovation Reporting Enhance the Firm Sustainable Development Goal performance? an Emerging Paradigm. *Business Strategy and the Environment*, *30*(7).
Khan, S. N., & Mohsin, M. (2017). The power of emotional value: Exploring the effects of values on green product consumer choice behavior. *Journal of Cleaner Production*, *150*(0959-6526), 65–74.
Kollmuss, A., & Agyeman, J. (2002). Mind the Gap: Why Do People Act Environmentally and What Are the Barriers to pro-environmental behavior? *Environmental Education Research*, *8*(3), 239–260.
Lambert, Z. V., Wildt, A. R., & Durand, R. M. (1991). Approximating Confidence Intervals for Factor Loadings. *Multivariate Behavioral Research*, *26*(3), 421–434.
Liao, Y.-K., Wu, W.-Y., & Pham, T.-T. (2020). Examining the Moderating Effects of Green Marketing and Green Psychological Benefits on Customers' Green Attitude, Value and Purchase Intention. *Sustainability*, *12*(18), 7461.
Lin, S.-P. (2015). Raising Public Awareness: The Role of the Household Sector in Mitigating Climate Change. *International Journal of Environmental Research and Public Health*, *12*(10), 13162–13178.
Liu, P., Teng, M., & Han, C. (2020). How does environmental knowledge translate into pro-environmental behaviors? The mediating role of environmental attitudes and behavioral intentions. *Science of the Total Environment*, *728*(138126), 138126.
Maji, I. K. (2015). Does clean energy contribute to economic growth? Evidence from Nigeria. *Energy Reports*, *1*, 145–150.
Maniatis, P. (2016). Investigating factors influencing consumer decision-making while choosing green products. *Journal of Cleaner Production*, *132*(1), 215–228.
Martin, B., & Simintiras, A. C. (1995). The impact of green product lines on the environment. *Marketing Intelligence & Planning*, *13*(4), 16–23.
Moon, S.-J., Costello, J. P., & Koo, D.-M. (2016). The impact of consumer confusion from eco-labels on negative WOM, distrust, and dissatisfaction. *International Journal of Advertising*, *36*(2), 246–271.
Mourad, M., & Serag Eldin Ahmed, Y. (2012). Perception of green brand in an emerging innovative market. *European Journal of Innovation Management*, *15*(4), 514–537.
Nazim, M., Sharif, M. S., Zeb, N., Maqbool, A., Mazhar, M., & Bakhsh, A. (2020). The Power of Green Brand Loyalty: Exploring the Effect of Green Perceived Value, Green Perceived Risk and Green Trust on the Green Repurchase Decision. *Paradigms*, 14(1), 234-238.
Nekmahmud, Md., & Fekete-Farkas, M. (2020). Why Not Green Marketing? Determinates of Consumers' Intention to Green Purchase Decision in a New Developing Nation. *Sustainability*, *12*(19), 7880.
Nekmahmud, Md., Ramkissoon, H., & Fekete-Farkas, M. (2022). Green purchase and sustainable consumption: A comparative study between European and non-European tourists. *Tourism Management Perspectives*, *43*, 100980.
Nguyen, T. N., Lobo, A., & Greenland, S. (2016). Energy efficient household appliances in emerging markets: the influence of consumers' values and knowledge on their attitudes and purchase behaviour. *International Journal of Consumer Studies*, *41*(2), 167–177.
Ottman, J. A., Stafford, E. R., & Hartman, C. L. (2006). Avoiding Green Marketing Myopia: Ways to Improve Consumer Appeal for Environmentally Preferable Products. *Environment: Science and Policy for Sustainable Development*, *48*(5), 22–36.
Pagiaslis, A., & Krontalis, A. K. (2014b). Green Consumption Behavior Antecedents: Environmental Concern, Knowledge, and Beliefs. *Psychology & Marketing*, *31*(5), 335–348.

Panda, T. K., Kumar, A., Jakhar, S., Luthra, S., Garza-Reyes, J. A., Kazancoglu, I., & Nayak, S. S. (2020). Social and environmental sustainability model on consumers' altruism, green purchase intention, green brand loyalty and evangelism. *Journal of Cleaner Production*, *243*(1), 118575.

Peattie, K. (2010). Green Consumption: Behavior and Norms. *Annual Review of Environment and Resources*, *35*(1), 195–228.

Peattie, K., & Peattie, S. (2009). Social marketing: A pathway to consumption reduction? *Journal of Business Research*, *62*(2), 260–268.

Prentice, C., Chen, J., & Wang, X. (2019). The influence of product and personal attributes on organic food marketing. *Journal of Retailing and Consumer Services*, *46*, 70–78.

Průša, P., & Sadílek, T. (2019b). Green Consumer Behavior: The Case of Czech Consumers of Generation Y. *Social Marketing Quarterly*, *25*(4), 243–255.

Quoquab, F., & Mohammad, J. (2020). A Review of Sustainable Consumption (2000 to 2020): What We Know and What We Need to Know. *Journal of Global Marketing*, *33*(5), 1–30.

Rossi, S. (2023). Exploring the Relationship between Economic Growth, Energy Consumption, Trade Openness, and Carbon Dioxide Emissions: A Case Study of Italy. *Journal of Energy and Environmental Policy Options*, *6*(3), 19-24.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68-78.

Santos, J. R. A. (1999). Cronbach's alpha: A tool for assessing the reliability of scales. *Journal of extension*, 37(2), 1-5.

Setiawan, B., Sumurung, H., & Salwa, N. (2024). Influence Of Green Innovation On Consumer Purchase Intentions For Eco-Friendly Products. *Riset: Jurnal Aplikasi Ekonomi Akuntansi Dan Bisnis*, *6*(1), 001 - 015.

Sharma, K., & Bansal, M. (2013). Environmental consciousness, its antecedents and behavioural outcomes. *Journal of Indian Business Research*, *5*(3), 198–214.

Situngkir, H. (2024). The Role of Corporate Social Responsibility in Enhancing Company Value: Evidence from Sustainable Companies. *Journal of Energy and Environmental Policy Options*, *7*(2), 17-27.

Souiden, N., & Pons, F. (2009). Product recall crisis management: the impact on manufacturer's image, consumer loyalty and purchase intention. *Journal of Product & Brand Management*, *18*(2), 106–114.

Spence, M. (1973). Job Market Signaling. *The Quarterly Journal of Economics*, *87*(3), 355–374.

Stanley, L.R. and Lasonde, K.M. (1996). The relationship between environmental issue involvement and environmentally-conscious behavior: an exploratory study. *Advances in Consumer Research*, 23, 183-188.

Tang, W., & Azman, M. (2024). Enhancing Environmental Awareness Through Public Awareness Programs. *Journal of Energy and Environmental Policy Options*, *7*(2), 10-16.

Teoh, C. W., Khor, K. C., & Wider, W. (2022). Factors Influencing Consumers' Purchase Intention Towards Green Home Appliances. *Frontiers in Psychology*, *13*.

Testa, F., Iraldo, F., Vaccari, A., & Ferrari, E. (2015). Why Eco-labels can be Effective Marketing Tools: Evidence from a Study on Italian Consumers. *Business Strategy and the Environment*, *24*(4), 252–265.

The World Bank. *Energy Efficiency Roadmap for Pakistan*; The World Bank: Washington, DC, USA, 2019.

Trapp, Caledonia. T. C., & Kanbach, Dominik. K. (2021). Green Entrepreneurship and Business models: Deriving Green Technology Business Model Archetypes. *Journal of Cleaner Production*, *297*, 126694.

Tseng, M.-L., Chiu, A. S. F., Tan, R. R., & Siriban-Manalang, A. B. (2013). Sustainable consumption and production for Asia: sustainability through green design and practice. *Journal of Cleaner Production*, *40*, 1–5.

UNEP. (2023, February 22). *GEO 2000*. Global Environment Outlook (GEO).

Ur Rehman, S. A., Cai, Y., Mirjat, N. H., Walasai, G. D., & Nafees, M. (2019). Energy-environment-economy nexus in Pakistan: Lessons from a PAK-TIMES model. *Energy Policy*, *126*, 200–211.

van Doorn, J., & Verhoef, P. C. (2011). Willingness to pay for organic products: Differences between virtue and vice foods. *International Journal of Research in Marketing*, *28*(3), 167–180.

Wang, P., Liu, Q., & Qi, Y. (2014). Factors Influencing Sustainable Consumption behaviors: a Survey of the Rural Residents in China. *Journal of Cleaner Production*, *63*(1), 152–165.

Wang, S., Fan, J., Zhao, D., Yang, S., & Fu, Y. (2014). Predicting consumers' intention to adopt hybrid electric vehicles: using an extended version of the theory of planned behavior model. *Transportation*, *43*(1), 123–143.

Wang, Z., Wang, X., & Guo, D. (2017). Policy implications of the purchasing intentions towards energy-efficient appliances among China's urban residents: Do subsidies work? *Energy Policy*, *102*, 430–439.

Waris, I., & Hameed, I. (2020). An empirical study of purchase intention of energy-efficient home appliances: the influence of knowledge of eco-labels and psychographic variables. *International Journal of Energy Sector Management*, *14*(6), 1297–1314.

William, F. (2023). Sustainable Energy Solutions for Urban Residences in Australia through Hybrid Systems. *Journal of Energy and Environmental Policy Options*, *6*(3), 1-7.

Witek, L., & Kuźniar, W. (2020). Green Purchase Behavior: The Effectiveness of Sociodemographic Variables for Explaining Green Purchases in Emerging Market. *Sustainability*, *13*(1), 209.

Wojnarowska, M., Sołtysik, M., & Prusak, A. (2021b). Impact of eco-labelling on the implementation of sustainable production and consumption. *Environmental Impact Assessment Review*, *86*, 106505.

Wu, S. (2003). The relationship between consumer characteristics and attitude toward online shopping. *Marketing Intelligence & Planning*, *21*(1), 37–44.

Yang, C., Tu, J.-C., & Jiang, Q. (2020). The Influential Factors of Consumers' Sustainable Consumption: A Case on Electric Vehicles in China. *Sustainability*, *12*(8), 3496.

Yang, R., Yue, C., Li, J., Zhu, J., Chen, H., & Wei, J. (2020). The Influence of Information Intervention Cognition on College Students' Energy-Saving Behavior Intentions. *International Journal of Environmental Research and Public Health*, *17*(5), 1659.

Yaseen, N., Tahira, M., Gulzar, A., & Anwar, A. (2011). Impact of brand awareness, perceivedquality and customer loyalty on brand profitability and purchase intention: A resellers' view. *Interdisciplinary Journal of Contemporary Research in Business,* 3(8), 833–837.

Zameer, H., & Yasmeen, H. (2022). Green innovation and environmental awareness driven green purchase intentions. *Marketing Intelligence & Planning*, *40*(5), 624–638.

Zhang, L., Fan, Y., Zhang, W., & Zhang, S. (2019). Extending the Theory of Planned Behavior to Explain the Effects of Cognitive Factors across Different Kinds of Green Products. *Sustainability*, *11*(15), 4222.

Zhang, X., & Dong, F. (2020). Why Do Consumers Make Green Purchase Decisions? Insights from a Systematic Review. *International Journal of Environmental Research and Public Health*, *17*(18), 6607.

Questionnaire

Please choose one response for each question.

1.1 Gender: ☒ Male ☐ Female ☐ Other

1.2 Age: ☒ 18-25 years ☐ 26-45 years ☐ 46-60 years

1.3 Income (per month in rupees): ☒ below 32000 ☐ 32,000-59,999 ☐ 60,000-99,999 ☐ 1,00,000-1,49,999 ☐ 150,000 and above

1.4 Highest Degree completed: ☐ Bachelors ☐ Masters ☒ Other: Please specify --------

Note: To which extent do you agree with the following statements. Tick the answer which is appropriate for you out of the given options.

SD= Strongly Disagree, DA= Disagree, N= Neutral, A= Agree, SA= Strongly Agree

Terms to Know: 1. Eco-friendly (Positive impact on environment) 2. Green Products (Products claiming to be recyclable and improving environment) 3. Green Electronic Products (Energy Saver Bulbs, Invertor AC, Invertor Refrigerators, Solar Panels, Air Humidifiers, Electronic Bikes)

	Environmental Consciousness	SD	DA	N	A	SA
1	I am concerned about environmental issues.					
2	I follow rules and regulations to protect the environment.					
3	I actively seek information about eco-friendly electronic products through social media.					
4	I always prefer electronic products that are eco-friendly.					
5	I always try to motivate others to keep the environment healthy.					
6	I always discourage environmental damaging activities.					
7	My purchase decision is influenced by environmental factors.					

	Environment Knowledge	SD	DA	N	A	SA
1	I understand the meaning of the term "eco-friendly".					
2	I understand the meaning of the term "organic".					
3	I understand the meaning of "environmental sustainability".					
4	I am aware of the negative impact of environmental damage for future generations.					
5	Eco-friendly electronic products are available in the market.					
6	My consumption pattern has an impact on environment.					
7	Being environmentally sustainable is important for economic growth.					

	Green Perceived Benefit	SD	DA	N	A	SA
1	Eco-friendly electronic products are beneficial for health.					
2	Eco-friendly electronic products are cost saving (for producers).					
3	Eco-friendly electronic products are a better alternative to non-green electronic products.					
4	Eco-friendly electronic products have more environmental benefits.					
5	Consuming eco-friendly electronic products have more benefit than its cost (for consumer).					

	Eco Labeling	SD	DA	N	A	SA
1	I understand the meaning of the term "Eco Labelling".					
2	I always look for eco labels before making purchase.					
3	I always prefer product with eco Labels in case of same product from different brands.					
4	Eco-labels have an influence on my purchase behavior.					

5	Eco-labels are a source of information for consumers.					
6	Eco-labels are easy to read.					
7	Eco-label information is accurate for eco-friendly products.					

	Green Loyalty	SD	DA	N	A	SA
1	I often purchase an electronic product from same brand again and again if it is eco-friendly.					
2	It is a right decision to purchase a product again and again if it is good for the environment.					
3	I cannot switch to other electronic brands if the environmental benefit associated with the current brand is more.					
4	A brand's commitment to environmental sustainability influence my loyalty with that brand.					
5	I would prefer to choose an electronic brand that actively promotes environmental sustainability.					
6	A brand's commitment to environmental sustainability is compulsory for making me loyal to them.					
7	I always recommend the electronic brand promoting sustainability with my friends and family.					

	Innovativeness	SD	DA	N	A	SA
1	I always prefer to try new eco-friendly electronic products in the market.					
2	I am an early adopter of new green electronic products in the market (pre-booking).					
3	I am likely to adopt new green electronic products when they become available in the market.					
4	I often seek information about new eco-friendly electronic products.					
5	I always support innovation in any eco-friendly electronic product I'm using already.					
6	I always prefer to adopt innovation in eco-friendly electronic product I'm using already.					

	Consumer Behavior	SD	DA	N	A	SA
1	I prefer eco-friendly electronics over non-eco-friendly electronics.					
2	As environmental awareness is increasing, scope of green marketing will also be increased.					
3	I would choose environmentally friendly electronic options in the future.					
4	I would support businesses that actively take part in eco-friendly technologies.					
5	I would prefer the electronic brands who have clear initiative towards going green.					
6	I would prefer electronic products with minimal carbon footprints (harmful gases generated by our actions) in future.					
7	I intent to not shift to non-eco-friendly electronic brand from eco-friendly one regardless of price difference.					