

The Mediating Role of Green Purchase Intention between Antecedents of Green Purchase Intention and Consumer's Green Buying Behaviour: Empirical Evidence in Ethiopia

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Received: October 30, 2022

Accepted: January 30, 2023

Online Published: February 8, 2023

doi:10.5539/ijms.v15n1p31

URL: <https://doi.org/10.5539/ijms.v15n1p31>

Abstract

Today, many companies have accepted responsibility to produce products and “go green”, because they have realized that they can reduce pollution and increase profits at the same time. The primary objective of this study was to investigate the role of green purchase intention as a mediator between antecedents of green purchase intention and green purchasing behavior in the Ethiopian context. Through a comprehensive literature review, the influencing factors of consumers' green purchase were explored. This study is cross sectional and quantitative in nature. The unit of analysis for the study is green product consumers, and data is gathered through a cross-section survey research technique. Data were collected from five major cities in Ethiopia using self-administered questionnaires and the mall intercept method. Field researchers approached over 500 people over the course of four weeks in five cities and asked them to complete a questionnaire and only 319 completed questionnaires were used for analysis. According to the findings, cognitive factors, green perceived value, green perceived quality, green perceived risk, consumer individual characteristics, green trust, collectivism, environmental advertisement, ecological packaging, high prices for ecological products and consumer spiritual orientation all have a significant positive influence on consumers' intentions to make green purchases. However, Perceived Behavioral Control; Perceived consumer effectiveness, Environmental Concern, Social Factors and Subjective norm all have insignificant effect on consumers green purchase intention. This study used structural equation modeling (SEM) to test the hypotheses. The results of the study also demonstrated that green purchase intention mediates the relationship between green purchase intention's antecedents and consumer purchase behavior because indirect effect estimates are higher than direct effect estimates ($0.305 > 0.278$). The findings of this study will provide orientations for enterprises engaged in green product diffusion and organizations responsible for environmental protection.

Keywords: green marketing, antecedents of green purchase intention, green purchase intention, green buying behaviour

1. Introduction

The role of marketing has come under scrutiny as the industrialized world's lifestyles and consumption patterns are a major cause of environmental damage. On the one hand, marketing has been chastised for contributing to environmental degradation by emphasizing consumption, thereby contributing to a throwaway society and emphasizing short-term consumer or customer desires. On the other hand, marketing can be seen as a key tool for changing people's attitudes toward consumption in general and not just among those who are environmentally conscious. Marketing can also be viewed as an important tool for selling new lifestyles and changing overall consumption habits, not just too environmentally conscious consumers. As a result, marketing should help to create more sustainable societies. From focusing on the production process, transaction, and exchange, marketing has evolved and broadened its scope to include environmental issues.

Green marketing can be defined in a variety of ways (Tjárnemo, 2001, pp. 34–36). Green marketing management is defined by (Paettie & Crane, 1995, p. 28) as “the holistic management process responsible for identifying, anticipating, and satisfying the needs of customers and society in a profitable and sustainable manner,” whereas Coddington (1993, p. 1) defines it as “marketing activities that recognize environmental stewardship as a business

development responsibility and business growth opportunity.” However, both definitions imply a broader eco-orientation than the marketing section, universal strategy, or philosophy.

Over the last few decades, environmental concerns have grown in importance among multinational corporations, governments, academics, and other stakeholders. Green marketing emerged in the 1970s, and green products became popular in the 1990s. Customers are becoming more environmentally conscious (Laroche & colleagues, 2001) Companies and consumers are becoming more conscious of the importance of green marketing. Compared to earlier markets, the market of today is more environmentally friendly, and consumer worry about their purchasing habits and other habits is rising (Paettie & Crane, 2005).

Environmental sustainability is defined as a management strategy that focuses on developing strategies that both protect the environment and generate profits for the company. It is an important but difficult social goal, and many businesses are taking at least some steps to protect and preserve the environment (Abadli & Kooli, 2022; Armstrong & Kotler, 2007, pp. 509–510). It is also the notion that environmental goals are not incompatible with long-term economic success, as it brings us closer to marketing (Grant, 2007, p. 2).

According to Chen and Chang (2012), green marketing activities include manufacturing, differentiating, pricing, and promoting products and services that can meet consumers’ environmental needs (Paettie, 1992, 2012). Green marketing efforts, according to Chen and Chang (2012), increase consumer purchase intentions. Companies must focus on reducing green perceived risk by providing trustworthy information, which helps to build trust with customers, improve green perceived value, and increase purchase intentions for green products. Green marketing, also known as ecological marketing and environmental marketing (Coddington, 1993), is an essential component of the holistic marketing concept.

Green marketing is a holistic marketing concept in which the production, marketing, consumption, and disposal of products and services are done in a way that is less harmful to the environment, with growing awareness about the implications of global warming, non-biodegradable solid waste, and the harmful impact of pollutants, among other things. Both marketers and consumers are becoming more aware of the need to transition to green products and services. The holistic marketing concept advocates the philosophy that businesses must develop products and marketing strategies that not only address the needs of consumers but also protect those consumers’ and society’s long-term interests (Kotler & Keller, 2005).

Rapid economic development and technological progress make people’s lives more convenient, but they also pose numerous environmental challenges, such as air pollution, climate change, and global warming (Butt, Saleem, Ishaq, Bukhari, & Faryal, 2022; Butt, Kuklane, Saleem, Zakar, Bukhari, & Ishaq, 2022). These issues have a direct impact on the long-term viability of economic development, the environment, and society. It has also drawn everyone’s attention to the environment. Environmentally conscious consumers have achieved positive and significant growth in environmental protection activities, attitudes, and knowledge over the last few decades. People are becoming more concerned about the environment, which has a direct impact on changes in personal lifestyles and values. Many consumers recognize the importance of the environment and are aware that their purchasing habits will have an impact on the ecological environment.

A green consumer is defined as someone who voluntarily engages in environmentally friendly consumer practices by marketing academics and practitioners (Peattie, 2001, pp. 187–191). Green or environmentally friendly activities, for example, deal with energy efficient operations, improved pollution controls, and recycled materials (Armstrong & Kotler, 2007, p. 509). Eco labels are a key tool in green marketing. Eco labels are labels that identify the overall environmental preference of a product or service within a specific product or service range. As a result, an eco-labeled product is entitled to bear a logo that includes the claim that the product was manufactured in accordance with certain environmental standards.

Unlike other green symbols or statements, an eco-label is required to have three parts: the certification standard, an independent accrediting body, and independent certification bodies. Consumers started to alter their habits and commercial ventures, and they gradually tended to increase their consumption of green goods (Kong et al., 2014). By conserving energy and resources, reducing or eliminating toxic waste, pollution, and the use of toxic substances, green products aim to protect or improve the environment (Ottman et al., 2006). They may be degradable, renewable, reusable, and/or recyclable, and they may have less of an environmental impact than conventional products (Dangelico & Pontrandolfo, 2010). Green products not only reduce environmental risk but also raise consumer and societal living standards.

The consideration that consumers give to the environment and green products will influence their purchasing choices (Pinto de Moura et al., 2012). Marketers must pay attention to consumer preferences and decision-making processes in order to promote green products (Cherrier et al., 2011). According to earlier research, there have been

numerous studies on the variables influencing consumers' intentions to make green purchases (Gil & Jacob, 2018; Sun & Wang, 2019; Hashim et al., 2020; Wang et al., 2020). A lightweight plastic bottle was the subject of an investigation by Lam et al. (2016), who confirmed that consumers' purchase intentions were significantly positively impacted by the product's perceived green value.

Consumers' subjective norms and green trust have both been shown to have a positive impact on consumers' intention to make a purchase (Konuk et al., 2015; Bong KO & Jin, 2017). According to Sreen et al. (2018), consumer attitudes toward green purchases can influence their intention to buy and ultimately their buying behavior. Other studies, though, have produced contradictory findings.

Few studies have examined the causes and effects of consumers' intentions to purchase environmentally friendly products, according to an analysis of studies on Ethiopian consumers' environmental behavior. The following research question was addressed in this study because there aren't many comprehensive published research studies on green marketing in Ethiopia:

- What impact do cognitive factors, consumer personal characteristics, societal factors, environmental advertising, ecological product packaging, the high cost of ecological products, and consumer spiritual orientation have on Ethiopian consumers' intention to buy green goods?
- Which of these variables significantly and favorably influences a consumer's intention to make green purchases?
- Does Green Purchase Intention mediate the relationship between Green Buying Behavior and Antecedents of Green Purchase Intention?

2. Literature Review

2.1 Theoretical Review

2.1.1 Reasoned Action Theory (TRA)

In an effort to address some of the criticisms of rational choice explanations, the Theory of Reasoned Action (TRA), which maintains that people are rational in their systematic use of information at their disposal and recognizes the significance of social influence on people's rationality, was developed (Ajzen & Fishbein, 1980). The outcome of a TRA model is influenced by the consumer's state of choice, both in the process of forming intentions and in the execution of behavior. TRA has been used in a variety of consumer behavior studies, including attitudes toward eating foods that have been genetically modified (Sparks, Shepherd, & Frewer, 1995), dieting (Sejwacz, Ajzen, & Fishbein, 1980), and purchasing environmentally friendly products (Scheepers & Wetzel's, 2007; Sheppard & Sherman, 1998).

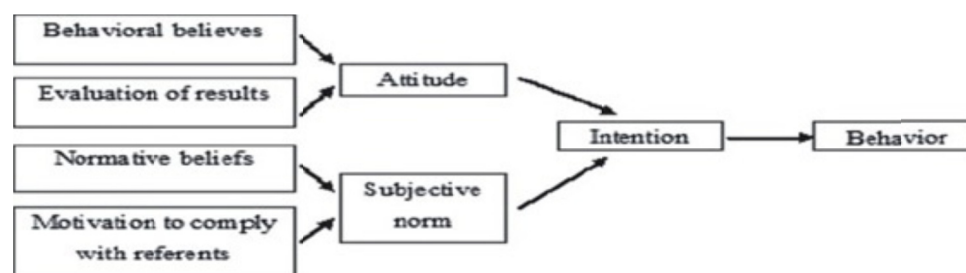


Figure- 1. Theory of Reasoned Action (TRA)

2.1.2 Theory of Planned Behaviour (TPB)

The Theory of Planned Behavior is a popular alternative strategy for forecasting intentions and behavior in the study of consumer behavior (Ajzen, 1991; Ajzen, 2002). It proposes three conceptually distinct factors that determine intention: behavioral attitude, subjective norm, and perceived behavioral control (Ajzen, 1991; Ajzen, 2002; Armitage & Conner, 2001; Ouellette & Wood, 1998). Depending on the behavior and circumstance, different antecedents have varying degrees of importance. The Theory of Planned Behavior (TPB) is a popular attitude model for examining links between individual beliefs, social norms, and green purchasing behavior (Kim & Chung, 2011). One of the most popular theories of behavioral decision-making is the theory of planned behavior (Ajzen, 1991). The theory of reasoned action (Fishbein et al., 1977), which explains the impact of individual

determinants, social context, and non-volitional determinants on intention, is where the TPB concept first appeared (Han & Kim, 2010). According to the TPB framework, three factors—attitude, subjective norm, and perceived behavioral control—combine to form a “behavioral intention” that then affects behavior. When examining consumers’ intentions to make green purchases, the prior literature has expanded the TPB model by including new variables based on the original variables.

For examining consumer behavior, this theory offers a useful framework (Goh & Balaji, 2016). This study proposed green perceived value, green perceived quality, and green perceived risk, as well as perceived consumer effectiveness, environmental knowledge, environmental concern, green trust, and collectivism as new predictors of green purchase intention. These new predictors were developed based on the previous literature, the expansion of the TPB model, and the ABC theory. When extending the TPB model, earlier studies have predicted the connection between these variables and green purchasing behavior (Ritter et al., 2015; Maichum et al., 2016; Paul et al., 2016; Hsu et al., 2017; Taufique & Vaithianathan, 2018; Liao et al., 2020).

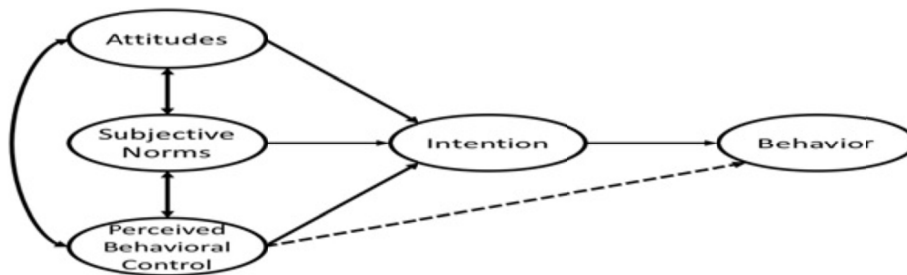


Figure 2. The Theory of Planned Behavior (TPB)

2.1.3 The Attitude-Behavior-Context (ABC) Theory

This investigation also makes use of the ABC theory to look at how consumer behavior affects consumers’ intentions to make green purchases (Guagnano et al., 1995). The central idea of ABC theory, according to Feldman and Hamm (2015), is a mean-end approach, which suggests that people first align their acts with the benefits they anticipate from their behaviors. The ABC theory is also used in this study to examine how consumer behavior affects consumers’ intentions to make green purchases (Guagnano et al., 1995). The ABC theory is the most widely used and practical framework for understanding how specific behaviors are influenced by attitudes (Goh & Balaji, 2016).

Ajzen (2005) asserts that people give things ratings based on their perceptions, beliefs, and outcomes. As a result, we can say that the ABC theory serves as the primary framework for explaining and predicting behavior. The cost, accessibility, and social trends of interpersonal relationships are a few additional contextual factors that Feldman and Hamm (2015) identified as the basis for human behavior. In addition, they pointed out that not all attitudes necessarily correspond to expected behaviors.

A context is a setting that facilitates the accomplishment of specific behaviors, though it can also occasionally act as a constraint. The relationship between attitude and behavior can be mediated or reinforced by context, according to Sirieix et al. (2013). As a result, according to the ABC theory, the interaction between contextual factors and consumer attitudes is crucial (Salonen & Ahlberg, 2012).

A single theory is insufficient to explain the study’s objective. Because human behavior is so complex and can be analyzed from a wide range of perspectives, three theories have been combined in this study. The Theory of Reasoned Action (TRA) contends that an individual’s behavior is influenced by their intention to engage in the behavior, which is reliant on their attitude toward the behavior and subjective norms (Fishbein & Ajzen, 1977). In accordance with attitudes, arbitrary standards, and perceived behavioral control, people act rationally, claims the Theory of Planned Behavior.

These elements provide the framework for decision-making, despite not always being actively or consciously taken into account. However, the Attitude-Behavior-Context (ABC) model defines attitude as a group of thoughts, feelings, and deeds directed at a particular thing, person, or event. Attitudes are frequently influenced by experiences or upbringing. They can significantly affect how people behave and behave in various situations.

2.2 Empirical Literature Review and Hypotheses Development

2.2.1 Cognitive Factors and Purchase Intention

The Theory of planned behavior (TPB) model offers a useful framework for examining consumers' intentions to make green purchases. The TPB model's ability to explain behavior will be strengthened by the addition of new variables that have a broad impact on these behavioral intentions. Cognitive antecedents of behavior have been used to study the literature on green purchase intention. This study's cognitive factors refer to consumers' perceptions of green products, which are likely to have a significant influence on their intention to make green purchases. In general, purchasing intention is regarded as a requirement for encouraging and pressuring consumers to make actual purchases of goods and services.

For the purpose of determining actual behavior, many studies look at consumers' intentions. Chen and Chang (2012) believe that green purchase intention is the possibility of consumers wanting to buy environmentally friendly products.

H-1: Cognitive factors have a positive and a significant effect on green Purchase Intention.

2.2.1.1 Green Perceived Value

Long-term customer relationships depend on perceived value, which is also crucial for influencing customer trust and purchase intentions (Zhuang, Cumiskey, Xiao, & Alford, 2010; Kim, Zhao, & Yang, 2008). If someone has "positive expectations of the integrity and capability of another one," they are more likely to be vulnerable (Lin, Weng, & Hsieh, 2003). Customer trust and the intention to make green purchases were found to be positively influenced by perceived value (Chen & Chang, 2012). According to their environmental needs, sustainability expectations, and desires, consumers' overall assessments of what they pay for and receive from a good or service are referred to as "green perceived value" (Chen & Chang, 2012).

Perceived value, in a broader sense, refers to how customers view the overall value of goods and services. Consumers' perceptions of the advantages and utility they derive from using products, as well as the time and money they invest in doing so, are explained by perceived value (Kim et al., 2011). Value is what drives consumers. A positive word-of-mouth effect and an increase in purchase intentions can be created by perceived value, an attribute related to how consumers perceive the value of a product. The importance of perceived value to marketing performance stems from the fact that through consumer perception of value, businesses can influence consumers' propensity to make purchases (Zhuang et al., 2010).

Customers who care about the environment will purchase green goods because of their advantages for the environment (Yaacob & Zakaria, 2011). Perceived value, a significant intermediate state variable in the consumer purchase process, can act as a sign of consumer judgment and a major predictor of purchase intention (Mahesh, 2013). Tan and Goh (2018) argue that consumers are more likely to make purchases when the perceived value of green products is higher. The following hypotheses are put forth in light of the analysis just mentioned:

H-1a: Green perceived value has a positive and significant effect on green purchase intention.

2.2.1.2 Green Perceived Quality

Green perceived quality is how customers rate a brand's environmental excellence (Chen & Chang, 2013). Perceived quality, which reflects consumers' perceptions of the relative benefits of a given good or service, is a prerequisite for satisfaction and behavioral intention. The findings of Zeithaml's study define perceived quality as a consumer's assessment of a product's overall advantage over competing goods (Zeithaml, 1988). An important factor influencing consumers' purchasing decisions is perceived quality (Nekmahmud and Fekete-Farkas, 2020). According to Wang et al. (2020), perceived quality is now a part of the TPB, and they also examine Chinese consumers' intentions to buy food that has received a green certification. Wu and Chen (2014) discovered that consumer purchase intentions for green products were positively impacted by green perceived quality. The following hypotheses are put forth in light of the analysis just mentioned:

H-1b: Green perceived quality has a positive and a significant effect on green purchase intention.

2.2.1.3 Green Perceived Risk

The subjective expectation of loss is known as perceived risk, and consumers typically try to reduce perceived risk. Green perceived risk is defined by Chen and Chang (2012) as the anticipation of unfavorable environmental effects related to purchasing decisions. Customers may perceive some risk when buying a green product because it is challenging for them to fully understand it before buying due to information asymmetry. Customers might choose not to buy a green product if they feel there is a high risk involved. As a result, consumers' intentions to buy green products are negatively correlated with how risky they perceive those products to be. It has been discovered

that green purchase intention and behavior are negatively impacted by green perceived risk (Wu et al., 2015). Consumer behavior is impacted negatively by perceived risk, which has an adverse effect on consumers' purchasing decisions. As a result, consumers' intention to make green purchases is likely to rise as green perceived risk decreases (Tarabieh, 2020). The following hypotheses are put forth in light of the analysis above.

H-1c: Green perceived risk has a negative and significant effect on green purchase intention.

2.2.1.4 Perceived Behavioral Control

An individual's assessment of their capacity to carry out a particular behavior is referred to as perceived behavioral control (Ajzen, 1991). Perceptual behavior control, which is a crucial component of the TPB model, is the perception of the difficulty of carrying out a particular behavior, or, more specifically, the degree to which the person feels that the execution or non-execution of the behavior in question is under their voluntary control (Ajzen, 2006). Therefore, it is the level of control that one feels they have over the behavior's execution. Consumers who believe they have more resources and opportunities will perceive themselves to have more behavioral control when faced with external factors while making purchase decisions. Previous research has demonstrated that when consumers believe they can control these uncontrollable external factors, they are more likely to purchase green products (Xu et al., 2020). In a study of the factors affecting consumer purchase intentions in developing nations, Wang et al. (2019) discovered that perceived behavioral control had a significant impact on Tanzanian consumers' purchase intentions, but not Kenyan consumers. The following hypotheses are put forth based on the analysis above:

H-1d: Perceived behavioral control has a positive and a significant effect on green purchase intention.

2.2.1.5 Perceived Consumer Effectiveness

The extent to which consumers believe their individual actions contribute to resolving issues is known as perceived consumer effectiveness, which is a personal assessment of the significance of one's own efforts (Ellen et al., 1991). A person's perception of their ability as consumers to help solve problems and mitigate detrimental environmental effects (Tan, 2011). In studying consumer behavior, perceived consumer effectiveness has received a lot of attention. In earlier research (Dagher & Itani, 2014; Benda-Prokeinová et al., 2017), researchers identified perceived consumer effectiveness as a key factor in understanding consumers' environmentally friendly purchasing behavior. For instance, Sharma and Dayal (2016) discovered that perceived consumer effectiveness has a favorable impact on a consumer's intention to make a green purchase. This element has been discovered to be a crucial predictor of consumers' intention to make purchases and to be directly related to their attitudes toward green products (Sharma and Foropon, 2019). The following hypotheses are put forth in light of the analysis just mentioned:

H-1e: Perceived consumer effectiveness has a positive and significant effect on green purchase intention.

2.2.2 Consumer Individual Characteristics and Purchase Intention

Due to the diversity of consumers, different consumers have different intentions when it comes to purchasing green products. Despite the fact that researchers have improved the explanatory power of TPB by including personality constructs, there are few studies on the relationship between personality traits and environmentally friendly behaviors (Rhodes et al., 2002; Dezdar, 2017).

H-2: Consumer Individual Characteristics has a positive and significant effect on green Purchase Intention.

2.2.2.1 Awareness of Green Product

Customers' awareness of the environment and environmental consciousness affected their willingness to purchase green products. Consumer education influenced them to favor green brands and promotions that supported social causes. The pro-environmental values of consumers, according to Pickett-Baker and Ozaki (2008), may affect their pro-environmental purchasing decisions. Environmental knowledge includes knowledge of the physical environment, significant connections that have an impact on the environment, and personal environmental responsibility that promotes sustainable development (Fryxell & Lo, 2003). Researchers typically use various environmental knowledge concepts, such as general or specific environmental knowledge, subjective or objective environmental knowledge, to predict individual green behavior in the literature on environmental knowledge (Lee, 2017). According to this study, environmental knowledge refers to one's perception of how well they understand fundamental environmental issues. According to the literature, consumers' attention toward buying eco-friendly products grows as they learn more about the environment. Consumers' intentions to buy environmentally friendly products are significantly influenced by their knowledge of the environment (Wang et al., 2014). Environmental

consumer knowledge has been specifically identified as a significant predictor of Ahmad and Thyagaraj's (2015) and a favorable influencer of Choi and Johnson's (2019) green purchase intention. The following hypotheses are put forth based on the analysis above:

H-2a: Awareness of Green Product has a positive and significant effect on green purchase intention.

2.2.2.2 Environmental Concern

Environmental concern is the level of worry about environmental issues and a sign of efforts to address these issues (Dunlap & Jones, 2002). For the purposes of examining individual characteristics of green marketing, environmental concern is regarded as a crucial environmental factor. Customers who are more environmentally conscious tend to view green products favorably, maintaining a healthy and sustainable lifestyle (Paul et al., 2016). The environment will have an impact on consumer purchasing behavior, particularly for green products. Nekmahmud and Fekete-Farkas (2020) examined green purchases made by young consumers and discovered that these choices were significantly influenced by environmental considerations. Hartmann and Apaolaza-Ibáez (2012) examined the direct and indirect effects of environmental concerns and discovered a favorable impact on consumer attitude toward and purchase intention for green energy brands.

H-2b: Environmental concern has a positive and significant effect on green purchase intention.

2.2.2.3 Green Trust

Trust is regarded as a typical mechanism for lowering perceived transaction risk by elevating expectations of favorable outcomes and providing assurances about trustees' behavior. Green trust, according to Chen (2010), is the readiness to rely on a thing based on beliefs or expectations derived from its reliability, goodness, and environmental performance. When buying green products, consumers frequently require more trust than when buying traditional goods. An important factor in determining purchase intention is consumer trust. Since many consumers are unfamiliar with green products, trust has a stronger impact on their intention to buy. Tarabieh (2020) found that green trust significantly impacted green purchase intention. Another significant factor influencing consumers' decisions to purchase green products is trust. Although consumers buy green products to maintain a healthy environment, there have been some complaints about how these products are regulated and licensed in the UK (Harper & Makatouni, 2002). "Consumer's willingness to depend on a product or service of a brand as a result of his belief in its environmental credibility, benevolence, and ability" is the definition of "green trust" (Chen, 2013). Credibility is a crucial component of any green marketing strategy (Chen & Chang, 2012). Harris and Goode (2010) and Gefen and Straub (2010) found that consumer trust plays a significant role in influencing consumers' purchase intentions as well as their decision to make a second purchase.

H-2c: Green trust has a positive and significant effect on green purchase intention.

2.2.3 Social Factors and Purchase Intention

In addition to individual factors, the social environment and other people also have an impact on consumer purchase intentions for environmentally friendly products. Individual behavior decisions are influenced by social factors in many different ways, including peer pressure and collectivist ideologies. This study primarily examines the effects of subjective norms and collectivism on consumers' intentions to make green purchases. The term "subjective norm" describes the social pressure that people feel to engage in or refrain from a particular behavior (Ajzen, 1991). A significant value that influences people's consumption and decision-making is collectivism (Laroche et al., 2001). It asserts that a group's interests should take precedence over a person's wants and needs.

H-3: Social Factors has a positive and significant effect on green Purchase Intention.

2.2.3.1 Subjective Norm

The term "subjective norm" describes the social pressure that people feel to engage in or refrain from a particular behavior (Ajzen, 1991). Individuals are frequently influenced by those around them when making decisions. It depicts how people interact with society, i.e., how their reference group will view them if they engage in particular behaviors. Previous studies have demonstrated that people follow subjective norms either out of fear of social pressure from their primary referents or because their referents give them advice on socially acceptable or beneficial behaviors. Bong KO and Jin (2017) investigated female college students in China and the United States; in both countries, subjective norms had a positive impact on consumers' green purchase intention. When consumers realize that their "important others" recognize green purchase behavior, they tend to adopt it. Yeon Kim and Chung (2011) found that if "important others" thought organic skincare products were good, consumers had more intention to purchase these products.

H-3a: Subjective norm has a positive and significant effect on green purchasing intention.

2.2.3.2 Collectivism

Collectivism, according to McCarty and Shrum (1994), refers to individuals who are prone to protect the environment for the prosperity of the entire society. People who live in collectivist societies are more likely to practice green purchasing because they are more cooperative, more willing to lend a hand, and place more value on group goals than individual ones. A significant value that influences people's consumption and decision-making is collectivism (Laroche et al., 2001). It asserts that a group's interests should take precedence over a person's wants and needs. People from collectivistic cultures are more interdependent and group-oriented, whereas those from individualistic cultures tend to be independent and self-oriented.

Interdependence, intragroup harmony, family security, group goals, and cooperation are values that collectivism places a strong emphasis on. Strong collectivists prioritize group interests over individual ones and are prepared to give up the latter in favor of the former (Zhao & Chen, 2008). Numerous facets of social behavior have been found to be impacted by collectivism. Collectivists tend to be more environmentally conscious because they frequently consider how their actions affect society, and as a result, they are more likely to choose green products when making purchases (Kim et al; 2011). Lee (2017) discovered that Chinese consumers' intentions to make green purchases were significantly impacted by collectivism. Therefore, the idea of collectivism has a significant impact on consumers' intentions to make green purchases. The following hypotheses are put forth in light of the analysis just mentioned:

H-3b: Collectivism has a positive and significant effect on green purchasing intention.

2.2.4 Environmental Advertisement and Purchase Intention

Customers claim that environmental advertisements are more effective at increasing their understanding of green products and assisting them in making wise decisions (Akehurst et al., 2012). Therefore, environmental advertising can aid in increasing consumer motivation to purchase eco-friendly goods. The following hypotheses are put forth in light of the analysis just mentioned:

H-4: Environmental advertisement positively and significantly influences green purchase intention.

2.2.5 Ecological Packaging and Purchase Intention

According to Hartmann and Ibanez (2006) consumers will more likely buy a green product having ecological packaging provided they meet cost benefit analysis. Sustainability is also demanded from industrial suppliers, and exporters are under pressure for supplying eco-packed products (Saxena & Khandelwal, 2012). Based on the above analysis, the following hypotheses are proposed:

H-5: Ecological packaging has a positive and significant effect green purchase intention.

2.2.6 High Prices of Ecological Products and Purchase intention

Green marketing first came into existence in the 1970s, and green products rose to popularity in the 1990s. Environmental awareness is growing among consumers (Laroche & others, 2001). Now, businesses and consumers are paying closer attention to green marketing (Paettie & Crane, 2005). The market of today differs from that of the past in that it is more environmentally friendly. Today's consumers are more conscious of their shopping behavior and purchases. Customers who care about the environment are willing to pay high prices for these goods (Laroche et al., 2001). The following hypotheses are put forth in light of the analysis just mentioned:

H-6: High prices of ecological products have a negative and significant effect on green purchase intention.

2.2.7 Consumer Spiritual-Orientation and Purchase Intention

Due to growing environmental concerns, consumers are emphasizing environmentally friendly products more and more (Sharma & Sharma, 2015). Consumers' adoption of environmentally sustainable behaviors seems to be driven by their awareness of and concern for the environment. According to Jackson (2006), there are four main factors that can encourage people to make environmentally friendly or sustainable purchasing decisions: (a) laws and regulations from the government; (b) incentive-based education programs to change people's attitudes; (c) small group/community management; and (d) moral, religious, or ethical appeals. Of these four, ethical conduct or its companion spiritual orientation has been extensively researched by academics (Belk, Wallendorf, & Sherry Jr, 1989; Pepper, Jackson, & Uzzell, 2009)

It is important to note that interconnectedness, love, compassion, contentment, forgiveness, responsibility, and harmony are all forms of spiritual expression (Burkhardt & Nagai-Jacobson, 2002; Dalai Lama, 1999; Dyson, Cobb, & Forman, 1997). A sense of connectedness within oneself is an intrapersonal expression of spirituality. Interpersonal and transpersonal expressions of spirituality are references to other people and the natural world

(Reed, 1992). Recently, researchers have made connections between the spiritual concepts of transcendental aspect, mindfulness, empathy, and reverence for nature and those of sustainable/environmental consumption (Ehrenfeld, 2008; Sheth, Sethia, & Srinivas, 2011). Therefore, a subjective view of spirituality expresses a person's connection to the earth, nature, and the universe, which is typically high among people who have a spiritual orientation. They express a sense of self-care, community, and respect for nature through this connection, and this fosters sustainable and environmental intentions. In light of the likelihood that spiritual orientation will result in GPI, the following assertion can be made:

H-7: Consumers' spiritual orientation has a positive and significant effect on green Purchase Intention.

2.2.8 Purchasing Intention and Purchase Decision

In general, purchasing intention is regarded as a requirement for encouraging and pressuring consumers to make actual purchases of goods and services (Kooli, Al Habsi, & Abadli, 2018). To test actual consumer behavior, many studies look at consumers' intentions. According to Chen and Chang (2012), consumers may have a green purchase intention if they want to buy eco-friendly goods. In order to preserve or not harm the environment, consumers are purchasing green products (Brian et al., 2001). Considering buying green products, switching to other brands for environmental reasons, and switching to green versions of products are the three items Chan (2001) suggested can be used to measure the likelihood that a consumer will make a green purchase. Customers' current and future purchasing decisions for green or environmentally friendly products can be measured using their green purchase intention.

H-8: Purchasing Intention has a Positive and a significant effect on Consumers Green Buyer behaviour.

2.2.9 Consumers Green Buying Behaviour

Consumers should be aware of the products marketed in green marketing before making a green marketing purchase. If customers are unfamiliar with the brand, they are less likely to buy green products (Glegg et al., 2005). Businesses that produce advertisements with a stronger emphasis on a green, eco-friendly image will affect the purchasing choices of their customers. Users prefer to identify with businesses whose brand image is connected to the environment. Customers modified their purchasing habits and bought goods they viewed as green (Ottman, 1993). This is due to the fact that related marketing initiatives for green products can assist businesses in raising brand awareness and cultivating a favorable perception of their company among consumers (Adkins, 2004; Varadarajan & Menon, 1988). The needs, desires, and purchasing power of consumers determine their purchasing behavior (Binder & Blankenberg, 2017). Compared to other consumers, green consumers demand goods that fulfill both their psychological and personal needs (i.e., the products that are not harmful to the environment). Businesses that are able to satisfy these social and psychological needs of green customers will have a large and devoted customer base.

H-9: Purchasing Intention mediates the relationship between antecedents of green product Purchasing Intention & Consumers Green Buyer behaviour.

3. Conceptual Framework

This study proposed a conceptual framework based on the Theory of Reasoned Action (TRA) theory, as well as the Theory of Planned Behavior (PPB) and ABC theory, as well as a rigorous empirical review that demonstrates the Mediating Role of Green Purchase Intention between Green Purchase Intention Antecedents and Green Buying Behavior.

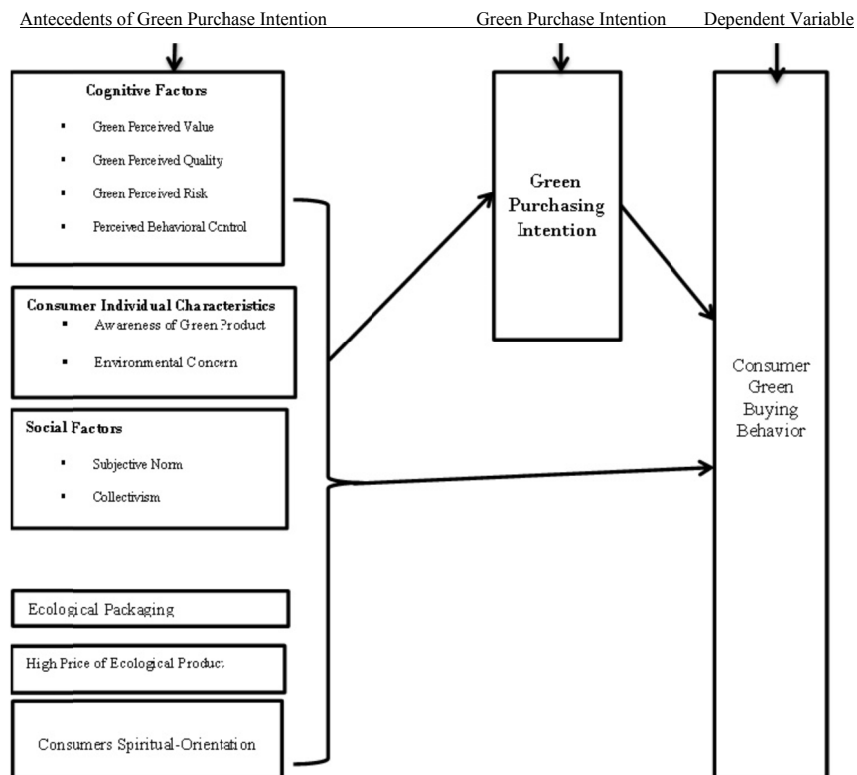


Figure 3. Own Research Model

Source: Own Research Model.

4. Research Methodology

4.1 Population and Sampling Design

The current study's unit of analysis is all green product consumers, and data was collected through a cross-section survey research technique. Using self-administered questionnaires, the mall intercept method was used to collect data in five Ethiopian cities (Addis Ababa, Bahir Dar, Gonder, Awassa, and Nazareth). The cities to be sampled were selected using judgment sampling. Green products were more likely to be purchased by city dwellers than by rural consumers. The vast majority of these customers buy green products to benefit the environment.

Most international studies have found that urban consumers favor buying eco-friendly products. Urban consumers were thought to be more aware of green products, so marketing to them was thought to provide insight into green consumer behavior. Due to the lack of availability of well-documented data on Ethiopian consumers of green goods, responses were collected from the aforementioned cities using the convenience sampling methodology. Respondents were sporadically approached throughout the week as they were shopping in malls.

To reduce sampling biases, data was collected at different times of the week. When collecting data, researchers frequently employ the mall intercept method because it yields comprehensive results (Bush & Hair, 1985). Respondents were given detailed explanations of the study's objectives and asked to help. Field researchers approached over 500 people in five cities over the course of four weeks and asked them to complete a questionnaire. 319 completed surveys were available for use in the analysis. Many people declined the survey because they had never bought green products before. The demographic information for the sample is shown in Table 1.

4.2 Research Instrument

Following a thorough review of the literature, the questionnaire was developed. This questionnaire was divided into four sections: Section I is concerned with the respondent's general profile; Section II is connected with the antecedents of green purchasing intention; Section III is involved with green purchasing intention; and Section IV is concerned with consumer purchasing behavior. Sections II, III, and IV of the research questionnaire contain items that use a 5-point Likert scale to test the hypothesis. The research questionnaire was pretested before being

tested on a representative sample of 40 people. The feedback was used to improve the questionnaire used to collect data.

5. Results and Discussion

5.1 Demographic Profile

340 of the 500 questionnaires that were distributed between June 1 and July 30 were returned at the end of the data collection process. However, 319 questionnaires were used for statistical analysis, yielding a response rate of 63.8 percent. Table 1 shows the demographic profile of the respondents. 86.4 percent of the 319 respondents were male, while 13.6 percent were female. Similarly, 43 percent were between the ages of 10 and 30, 37 percent were between the ages of 31 and 40, 16 percent were between the ages of 41 and 50, and 4 percent were between the ages of 51 and 60. In terms of monthly income, 16% earned between Birr 10,000 and 20,000, 46% earned between Birr 20,000 and 30,000, 30% earned more than 30,000, and 8% earned between Birr 5,000 and 10,000.

Table 1. Profile of respondents

| Item | Description | Frequency | Percent (%) |
|-----------------------|-------------------|-----------|-------------|
| Gender | Male | 276 | 86.4% |
| | Female | 44 | 13.6% |
| | Total | 319 | 100% |
| Age Category | 10–30 | 137 | 43% |
| | 31–40 | 118 | 37% |
| | 41–50 | 51 | 16% |
| | 51–60 | 13 | 4% |
| | Total | 319 | 100% |
| Monthly Income | 5,000–10000 | 25 | 8% |
| | 10,0001–20,000 | 51 | 16% |
| | 20,0001–30,000 | 147 | 46% |
| | Above Birr 30,000 | 96 | 30% |
| Number of Observation | | 319 | 100% |

Source: Own Computation, 2022.

5.2 Data Analysis and Hypothesis Examination

The Partial Least Squares (PLS) technique and the SmartPLS 3 software were used to analyze the research model (Ringle, Wende, & Becker, 2015). The measurement model (measure validity and reliability) was examined first, followed by the structural model -testing the hypothesized relationship (Hair et al., 2017; Ramayah et al., 2011, 2013; Rahman et al., 2016). A bootstrapping method (5000 resamples) was also used to test the significance of the path coefficients and loadings (Hair et al., 2017).

5.3 Measurement Model

Before analyzing the data with the SMART-PLS statistical tool, it was first entered into SPSS and a preliminary stage of measurement item was identified. The measurement model's psychometric properties were then evaluated using SMART-PLS in terms of internal consistency, reliability, convergent validity, and discriminant validity. The sampling adequacy (0.82) and Cronbach alpha (0.941) reliability measures were also validated using SPSS 20. Two types of validity were investigated to evaluate the measurement model: convergent validity and discriminant validity.

5.4 Reliability and Convergent Validity

The measurement's convergent validity is typically determined by examining the loadings, average variance extracted (AVE), and composite reliability (Gholami et al., 2013; Rahman et al., 2015). A measurement instrument is reliable if the question-statements (or other measures) associated with each latent variable are understood by different respondents in the same way. As a result, all Cronbach alpha coefficients that evaluate items in terms of unidimensionality as a set of scale items are greater than 0.7, ranging from 0.701 to 0.891, indicating good internal consistency.

Cronbach alpha, on the other hand, is based on the constraining assumption that all indicators are equally important. Another way to look at reliability is as the proportion of measure variance attributable to the underlying dimension (Werts et al., 1974). According to Chin et al. (1996, p. 33), while Cronbach's alpha, with its assumption of parallel measures, represents a lower bound estimate of internal consistency, the composite

reliability provides a more accurate estimate. Similarly, the composite reliability of all latent variables in this study is greater than 0.7, with values ranging from 0.702 to 0.876 for all measures. Similarly, Dhillon Goldstin rho, which is acceptable above 0.7, measures internal consistency like composite reliability (Gefen, 2000). However, the average variance extraction (AVE) of all variables is greater than 0.5. The commonly recommended AVE threshold for acceptable validity is 0.5 (Fornell & Larcker, 1981).

Table 2. Reliability analysis

| | Cronbach's alpha | Composite reliability (rho_a) | Average variance extracted (AVE) |
|-----------------------------------|------------------|-------------------------------|----------------------------------|
| Awareness of Green Product | 0.719 | 0.787 | 0.505 |
| Consumer Buying Behavior | 0.701 | 0.722 | 0.546 |
| Collectivism | 0.791 | 0.717 | 0.610 |
| Environmental Concern | 0.845 | 0.801 | 0.564 |
| Ecological Packaging | 0.725 | 0.762 | 0.559 |
| High Price of Ecological Products | 0.819 | 0.712 | 0.674 |
| Environmental Advertisement | 0.891 | 0.710 | 0.550 |
| Green Perceived Risk | 0.831 | 0.790 | 0.727 |
| Green Trust | 0.783 | 0.734 | 0.759 |
| Green Perceived Quality | 0.852 | 0.702 | 0.566 |
| Green Perceived Value | 0.835 | 0.706 | 0.665 |
| Green Purchasing Intention | 0.739 | 0.876 | 0.591 |
| Perceived Behavioral Control | 0.805 | 0.799 | 0.721 |
| Perceived Consumer Effectiveness | 0.856 | 0.845 | 0.556 |
| Subjective Norm | 0.809 | 0.770 | 0.634 |
| Spiritual-Orientation | 0.738 | 0.783 | 0.573 |

Source: Own Computation, 2022.

5.4.1 Discriminant Validity

The Fornell-Larcker criterion can also be used with AVE to establish discriminant validity. The square root of AVE for any latent variable should be greater than its correlation with any other latent variable. This means that any latent variable's variance with its block of indicators is greater than any other latent variable's variance. In SmartPLS output, the square root of AVE appears in the diagonal cells of the Fornell-Larcker criterion table, and correlations appear below it. Discriminant validity exists in absolute value terms when the top number (which is the square root of AVE) in any factor column is greater than the numbers (correlations) below it.

Table 3. Latent variable correlation and discriminant validity

| | AGP | CBB | COL | EC | ECP | EPE | Envadv | GPR | GT | GPQ | GPV | GPI | PBC | PCE | SUB | SprOrient |
|-----------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|
| AGP | 0.711 | | | | | | | | | | | | | | | |
| CBB | 0.176 | 0.739 | | | | | | | | | | | | | | |
| COL | 0.128 | 0.138 | 0.781 | | | | | | | | | | | | | |
| EC | 0.057 | 0.448 | 0.185 | 0.751 | | | | | | | | | | | | |
| ECP | 0.030 | 0.482 | 0.276 | 0.267 | 0.748 | | | | | | | | | | | |
| EPE | 0.027 | 0.069 | 0.210 | 0.056 | 0.022 | 0.821 | | | | | | | | | | |
| Envadv | 0.011 | 0.277 | 0.047 | 0.587 | 0.594 | 0.028 | 0.742 | | | | | | | | | |
| GPR | 0.009 | 0.069 | 0.226 | 0.350 | 0.268 | 0.210 | 0.573 | 0.853 | | | | | | | | |
| GT | 0.197 | 0.238 | 0.101 | 0.551 | 0.559 | 0.034 | 0.550 | 0.338 | 0.871 | | | | | | | |
| GPQ | 0.184 | 0.309 | 0.317 | 0.417 | 0.470 | 0.236 | 0.399 | 0.227 | 0.282 | 0.752 | | | | | | |
| GPV | 0.020 | 0.227 | 0.114 | 0.736 | 0.541 | 0.008 | 0.551 | 0.371 | 0.339 | 0.616 | 0.815 | | | | | |
| GPI | 0.228 | 0.553 | 0.440 | 0.298 | 0.267 | 0.270 | 0.295 | 0.249 | 0.261 | 0.437 | 0.220 | 0.769 | | | | |
| PBC | 0.092 | 0.147 | 0.175 | 0.551 | 0.571 | 0.085 | 0.685 | 0.204 | 0.560 | 0.423 | 0.521 | 0.089 | 0.849 | | | |
| PCE | 0.125 | 0.237 | 0.187 | 0.037 | 0.061 | 0.001 | 0.413 | 0.026 | 0.019 | 0.434 | 0.092 | 0.275 | 0.159 | 0.746 | | |
| SUB | 0.003 | 0.259 | 0.016 | 0.496 | 0.571 | 0.321 | 0.423 | 0.263 | 0.604 | 0.120 | 0.413 | 0.259 | 0.467 | 0.042 | 0.796 | |
| SprOrient | 0.349 | 0.405 | 0.110 | 0.312 | 0.196 | 0.200 | 0.171 | 0.176 | 0.236 | 0.222 | 0.404 | 0.486 | 0.082 | 0.219 | 0.196 | 0.757 |

Source: Own Computation, 2022.

Indicators should load well on the factors they are designed to measure in a good model, and cross-loadings with factors they are not designed to measure should be noticeable. Discriminant validity is demonstrated when each

measurement item only has a weak correlation with the construct with which it is theoretically associated. The correlation between the latent variable score and the measurement item is high when there is an appropriate pattern of loading, which means that the measurement item loads heavily on the theoretically assigned factor and not heavily on other factors. When compared to the cross-loading of other variables, all loadings in this case clearly showed a proper pattern of loading. No indicator variable should, at the very least, have a stronger correlation with another latent variable than with its own latent variable. If it does, the model's specifications are flawed. Ideally, factor structures are straightforward, which is generally interpreted to mean that intended loadings should be higher than 0.6. (Some use 0.5). The achieved indicators in the table above load on each factor just perfectly acceptable. For more information as shown in Table 4:

Table 4. Discriminate validity

| | AGP | COL | Envadv | EC | ECP | EPE | CBB | GPI | GPQ | GPR | GPV | GT | PBC | PCE | SprOrient | SUB |
|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|-------|
| AGP1 | 0.507 | 0.144 | 0.255 | 0.112 | 0.095 | 0.254 | 0.011 | 0.003 | 0.128 | 0.011 | 0.051 | 0.002 | 0.117 | 0.101 | 0.057 | 0.048 |
| AGP2 | 0.646 | 0.044 | 0.049 | 0.057 | 0.036 | 0.086 | 0.093 | 0.090 | 0.102 | 0.079 | 0.000 | 0.004 | 0.101 | 0.135 | 0.005 | 0.175 |
| AGP3 | 0.560 | 0.072 | 0.080 | 0.014 | 0.004 | 0.021 | 0.123 | 0.068 | 0.074 | 0.097 | 0.049 | 0.136 | 0.008 | 0.136 | 0.093 | 0.172 |
| AGP4 | 0.753 | 0.084 | 0.067 | 0.053 | 0.197 | 0.160 | 0.026 | 0.247 | 0.085 | 0.098 | 0.034 | 0.051 | 0.022 | 0.144 | 0.013 | 0.055 |
| AGP5 | 0.626 | 0.174 | 0.241 | 0.138 | 0.141 | 0.092 | 0.148 | 0.221 | 0.285 | 0.204 | 0.243 | 0.070 | 0.017 | 0.126 | 0.063 | 0.160 |
| AGP6 | 0.794 | 0.049 | 0.048 | 0.056 | 0.002 | 0.028 | 0.177 | 0.056 | 0.090 | 0.083 | 0.151 | 0.179 | 0.137 | 0.016 | 0.087 | 0.284 |
| COL1 | 0.070 | 0.600 | 0.200 | 0.480 | 0.374 | 0.043 | 0.349 | 0.229 | 0.444 | 0.150 | 0.461 | 0.103 | 0.395 | 0.061 | 0.158 | 0.056 |
| COL2 | 0.132 | 0.799 | 0.399 | 0.411 | 0.463 | 0.081 | 0.331 | 0.290 | 0.367 | 0.032 | 0.330 | 0.317 | 0.351 | 0.162 | 0.301 | 0.045 |
| COL3 | 0.210 | 0.621 | 0.421 | 0.473 | 0.447 | 0.100 | 0.333 | 0.079 | 0.389 | 0.239 | 0.471 | 0.119 | 0.390 | 0.121 | 0.409 | 0.096 |
| COL4 | 0.026 | 0.508 | 0.008 | 0.432 | 0.360 | 0.175 | 0.482 | 0.233 | 0.025 | 0.348 | 0.063 | 0.069 | 0.407 | 0.112 | 0.420 | 0.142 |
| COL5 | 0.108 | 0.657 | 0.157 | 0.343 | 0.306 | 0.195 | 0.459 | 0.382 | 0.354 | 0.325 | 0.325 | 0.154 | 0.245 | 0.058 | 0.401 | 0.136 |
| COL6 | 0.149 | 0.567 | 0.137 | 0.410 | 0.297 | 0.068 | 0.458 | 0.246 | 0.303 | 0.041 | 0.467 | 0.025 | 0.398 | 0.191 | 0.042 | 0.035 |
| EAD1 | 0.047 | 0.081 | 0.662 | 0.400 | 0.389 | 0.047 | 0.074 | 0.427 | 0.365 | 0.120 | 0.305 | 0.168 | 0.290 | 0.077 | 0.205 | 0.190 |
| EAD10 | 0.201 | 0.101 | 0.507 | 0.454 | 0.432 | 0.043 | 0.061 | 0.288 | 0.484 | 0.405 | 0.135 | 0.043 | 0.104 | 0.175 | 0.417 | 0.002 |
| EAD2 | 0.100 | 0.026 | 0.551 | 0.439 | 0.493 | 0.124 | 0.047 | 0.089 | 0.470 | 0.448 | 0.451 | 0.046 | 0.172 | 0.033 | 0.463 | 0.064 |
| EAD3 | 0.054 | 0.009 | 0.586 | 0.343 | 0.310 | 0.066 | 0.085 | 0.091 | 0.429 | 0.368 | 0.326 | 0.040 | 0.159 | 0.211 | 0.360 | 0.192 |
| EAD4 | 0.086 | 0.037 | 0.657 | 0.237 | 0.176 | 0.089 | 0.230 | 0.182 | 0.488 | 0.355 | 0.474 | 0.109 | 0.132 | 0.108 | 0.422 | 0.027 |
| EAD5 | 0.047 | 0.214 | 0.514 | 0.371 | 0.337 | 0.090 | 0.089 | 0.280 | 0.420 | 0.265 | 0.390 | 0.046 | 0.163 | 0.215 | 0.242 | 0.063 |
| EAD6 | 0.042 | 0.087 | 0.650 | 0.131 | 0.499 | 0.132 | 0.009 | 0.120 | 0.440 | 0.403 | 0.415 | 0.154 | 0.107 | 0.425 | 0.370 | 0.094 |
| EAD7 | 0.019 | 0.326 | 0.506 | 0.387 | 0.311 | 0.217 | 0.241 | 0.014 | 0.390 | 0.175 | 0.335 | 0.079 | 0.180 | 0.479 | 0.118 | 0.161 |
| EAD8 | 0.159 | 0.069 | 0.611 | 0.443 | 0.347 | 0.021 | 0.082 | 0.183 | 0.334 | 0.277 | 0.477 | 0.130 | 0.185 | 0.179 | 0.353 | 0.094 |
| EAD9 | 0.214 | 0.008 | 0.817 | 0.176 | 0.041 | 0.094 | 0.251 | 0.104 | 0.378 | 0.292 | 0.492 | 0.025 | 0.143 | 0.290 | 0.418 | 0.019 |
| EC1 | 0.053 | 0.057 | 0.416 | 0.557 | 0.199 | 0.240 | 0.430 | 0.045 | 0.367 | 0.209 | 0.358 | 0.054 | 0.011 | 0.104 | 0.258 | 0.032 |
| EC10 | 0.128 | 0.225 | 0.157 | 0.654 | 0.323 | 0.104 | 0.330 | 0.325 | 0.466 | 0.293 | 0.472 | 0.045 | 0.441 | 0.234 | 0.375 | 0.014 |
| EC11 | 0.203 | 0.052 | 0.199 | 0.605 | 0.448 | 0.074 | 0.491 | 0.191 | 0.510 | 0.298 | 0.265 | 0.118 | 0.109 | 0.001 | 0.299 | 0.194 |
| EC2 | 0.057 | 0.116 | 0.124 | 0.534 | 0.332 | 0.208 | 0.346 | 0.138 | 0.185 | 0.102 | 0.200 | 0.026 | 0.335 | 0.047 | 0.131 | 0.039 |
| EC3 | 0.003 | 0.139 | 0.148 | 0.824 | 0.104 | 0.012 | 0.355 | 0.299 | 0.558 | 0.487 | 0.418 | 0.257 | 0.482 | 0.076 | 0.152 | 0.187 |
| EC4 | 0.005 | 0.419 | 0.306 | 0.755 | 0.182 | 0.007 | 0.159 | 0.248 | 0.408 | 0.264 | 0.453 | 0.222 | 0.472 | 0.093 | 0.402 | 0.164 |
| EC5 | 0.040 | 0.480 | 0.018 | 0.803 | 0.498 | 0.098 | 0.345 | 0.259 | 0.292 | 0.276 | 0.454 | 0.324 | 0.334 | 0.079 | 0.293 | 0.223 |
| EC6 | 0.231 | 0.376 | 0.138 | 0.627 | 0.185 | 0.129 | 0.236 | 0.202 | 0.269 | 0.126 | 0.394 | 0.016 | 0.355 | 0.276 | 0.252 | 0.043 |
| EC7 | 0.151 | 0.045 | 0.033 | 0.565 | 0.393 | 0.053 | 0.355 | 0.198 | 0.333 | 0.252 | 0.067 | 0.072 | 0.283 | 0.038 | 0.324 | 0.396 |
| EC8 | 0.018 | 0.208 | 0.107 | 0.754 | 0.489 | 0.190 | 0.300 | 0.367 | 0.334 | 0.192 | 0.069 | 0.158 | 0.260 | 0.246 | 0.301 | 0.478 |
| EC9 | 0.183 | 0.226 | 0.173 | 0.650 | 0.340 | 0.023 | 0.342 | 0.182 | 0.341 | 0.212 | 0.475 | 0.006 | 0.498 | 0.128 | 0.321 | 0.074 |
| ECP1 | 0.001 | 0.008 | 0.314 | 0.201 | 0.532 | 0.071 | 0.410 | 0.217 | 0.393 | 0.236 | 0.456 | 0.005 | 0.393 | 0.273 | 0.412 | 0.072 |
| ECP2 | 0.053 | 0.206 | 0.416 | 0.257 | 0.599 | 0.240 | 0.430 | 0.045 | 0.367 | 0.209 | 0.358 | 0.054 | 0.106 | 0.104 | 0.258 | 0.032 |
| ECP3 | 0.057 | 0.225 | 0.124 | 0.334 | 0.532 | 0.208 | 0.346 | 0.138 | 0.185 | 0.102 | 0.200 | 0.026 | 0.335 | 0.047 | 0.131 | 0.039 |
| ECP4 | 0.003 | 0.139 | 0.148 | 0.244 | 0.904 | 0.012 | 0.136 | 0.299 | 0.158 | 0.487 | 0.418 | 0.257 | 0.482 | 0.076 | 0.193 | 0.187 |
| ECP5 | 0.005 | 0.419 | 0.306 | 0.136 | 0.882 | 0.007 | 0.259 | 0.248 | 0.408 | 0.264 | 0.453 | 0.222 | 0.472 | 0.093 | 0.402 | 0.164 |
| ECP6 | 0.022 | 0.480 | 0.065 | 0.067 | 0.613 | 0.267 | 0.031 | 0.000 | 0.177 | 0.375 | 0.005 | 0.073 | 0.212 | 0.121 | 0.471 | 0.105 |
| EPE1 | 0.065 | 0.032 | 0.090 | 0.049 | 0.103 | 0.696 | 0.071 | 0.172 | 0.021 | 0.258 | 0.112 | 0.188 | 0.073 | 0.145 | 0.371 | 0.022 |
| EPE2 | 0.157 | 0.068 | 0.066 | 0.094 | 0.077 | 0.549 | 0.103 | 0.036 | 0.085 | 0.003 | 0.059 | 0.048 | 0.026 | 0.147 | 0.112 | 0.037 |
| EPE3 | 0.015 | 0.067 | 0.068 | 0.071 | 0.031 | 0.685 | 0.041 | 0.170 | 0.118 | 0.120 | 0.164 | 0.183 | 0.033 | 0.060 | 0.220 | 0.266 |
| EPE4 | 0.091 | 0.154 | 0.312 | 0.053 | 0.067 | 0.571 | 0.009 | 0.046 | 0.068 | 0.071 | 0.042 | 0.146 | 0.057 | 0.163 | 0.040 | 0.093 |
| GBB1 | 0.060 | 0.035 | 0.098 | 0.135 | 0.037 | 0.146 | 0.588 | 0.044 | 0.016 | 0.113 | 0.096 | 0.015 | 0.154 | 0.041 | 0.200 | 0.070 |
| GBB10 | 0.249 | 0.237 | 0.049 | 0.332 | 0.281 | 0.061 | 0.564 | 0.068 | 0.103 | 0.270 | 0.065 | 0.357 | 0.054 | 0.102 | 0.238 | 0.327 |
| GBB11 | 0.012 | 0.134 | 0.361 | 0.341 | 0.395 | 0.067 | 0.666 | 0.140 | 0.267 | 0.215 | 0.173 | 0.283 | 0.248 | 0.161 | 0.228 | 0.160 |
| GBB12 | 0.114 | 0.075 | 0.024 | 0.094 | 0.056 | 0.172 | 0.524 | 0.034 | 0.017 | 0.023 | 0.026 | 0.007 | 0.059 | 0.036 | 0.091 | 0.120 |

| | | | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| GBB13 | 0.091 | 0.057 | 0.052 | 0.001 | 0.032 | 0.060 | 0.593 | 0.129 | 0.053 | 0.140 | 0.049 | 0.009 | 0.025 | 0.069 | 0.119 | 0.133 |
| GBB2 | 0.049 | 0.066 | 0.030 | 0.086 | 0.073 | 0.125 | 0.677 | 0.141 | 0.143 | 0.064 | 0.069 | 0.077 | 0.286 | 0.132 | 0.041 | 0.170 |
| GBB3 | 0.191 | 0.029 | 0.211 | 0.177 | 0.223 | 0.013 | 0.581 | 0.036 | 0.278 | 0.212 | 0.179 | 0.314 | 0.158 | 0.165 | 0.152 | 0.196 |
| GBB4 | 0.044 | 0.007 | 0.156 | 0.081 | 0.135 | 0.025 | 0.654 | 0.088 | 0.161 | 0.071 | 0.126 | 0.085 | 0.052 | 0.119 | 0.007 | 0.054 |
| GBB5 | 0.023 | 0.021 | 0.190 | 0.148 | 0.193 | 0.049 | 0.535 | 0.059 | 0.072 | 0.159 | 0.019 | 0.318 | 0.057 | 0.195 | 0.201 | 0.086 |
| GBB6 | 0.014 | 0.146 | 0.167 | 0.273 | 0.289 | 0.060 | 0.624 | 0.059 | 0.106 | 0.207 | 0.109 | 0.329 | 0.182 | 0.170 | 0.156 | 0.124 |
| GBB7 | 0.135 | 0.027 | 0.179 | 0.007 | 0.004 | 0.008 | 0.520 | 0.069 | 0.144 | 0.123 | 0.101 | 0.120 | 0.337 | 0.119 | 0.069 | 0.193 |
| GBB8 | 0.190 | 0.034 | 0.032 | 0.228 | 0.243 | 0.179 | 0.610 | 0.050 | 0.003 | 0.034 | 0.095 | 0.258 | 0.203 | 0.035 | 0.118 | 0.320 |
| GBB9 | 0.059 | 0.168 | 0.075 | 0.325 | 0.342 | 0.112 | 0.713 | 0.018 | 0.079 | 0.147 | 0.249 | 0.300 | 0.015 | 0.184 | 0.152 | 0.329 |
| GPI1 | 0.045 | 0.425 | 0.118 | 0.217 | 0.228 | 0.256 | 0.007 | 0.649 | 0.152 | 0.286 | 0.116 | 0.193 | 0.178 | 0.098 | 0.338 | 0.377 |
| GPI10 | 0.263 | 0.367 | 0.104 | 0.116 | 0.178 | 0.040 | 0.024 | 0.503 | 0.095 | 0.076 | 0.022 | 0.047 | 0.033 | 0.070 | 0.049 | 0.173 |
| GPI11 | 0.129 | 0.159 | 0.250 | 0.132 | 0.114 | 0.102 | 0.177 | 0.665 | 0.138 | 0.197 | 0.158 | 0.204 | 0.055 | 0.232 | 0.085 | 0.193 |
| GPI12 | 0.015 | 0.274 | 0.123 | 0.064 | 0.165 | 0.336 | 0.163 | 0.551 | 0.085 | 0.144 | 0.082 | 0.116 | 0.110 | 0.042 | 0.181 | 0.297 |
| GPI2 | 0.098 | 0.109 | 0.287 | 0.040 | 0.186 | 0.148 | 0.009 | 0.643 | 0.149 | 0.028 | 0.067 | 0.132 | 0.308 | 0.133 | 0.129 | 0.211 |
| GPI3 | 0.102 | 0.125 | 0.426 | 0.274 | 0.148 | 0.091 | 0.095 | 0.565 | 0.044 | 0.163 | 0.191 | 0.179 | 0.184 | 0.072 | 0.035 | 0.149 |
| GPI4 | 0.465 | 0.310 | 0.252 | 0.081 | 0.094 | 0.068 | 0.340 | 0.524 | 0.362 | 0.333 | 0.182 | 0.219 | 0.003 | 0.192 | 0.202 | 0.277 |
| GPI5 | 0.119 | 0.232 | 0.149 | 0.090 | 0.003 | 0.107 | 0.056 | 0.540 | 0.034 | 0.090 | 0.067 | 0.045 | 0.129 | 0.309 | 0.029 | 0.021 |
| GPI6 | 0.004 | 0.045 | 0.240 | 0.075 | 0.057 | 0.127 | 0.226 | 0.610 | 0.111 | 0.203 | 0.058 | 0.165 | 0.075 | 0.081 | 0.074 | 0.001 |
| GPI7 | 0.155 | 0.067 | 0.013 | 0.010 | 0.077 | 0.024 | 0.001 | 0.605 | 0.067 | 0.129 | 0.080 | 0.002 | 0.079 | 0.164 | 0.093 | 0.110 |
| GPI8 | 0.086 | 0.291 | 0.117 | 0.004 | 0.084 | 0.054 | 0.068 | 0.502 | 0.122 | 0.075 | 0.003 | 0.205 | 0.136 | 0.169 | 0.084 | 0.087 |
| GPI9 | 0.026 | 0.174 | 0.029 | 0.193 | 0.132 | 0.163 | 0.034 | 0.656 | 0.045 | 0.086 | 0.062 | 0.016 | 0.013 | 0.092 | 0.050 | 0.096 |
| GPQ1 | 0.259 | 0.224 | 0.141 | 0.488 | 0.490 | 0.087 | 0.381 | 0.253 | 0.665 | 0.081 | 0.265 | 0.177 | 0.410 | 0.057 | 0.429 | 0.243 |
| GPQ11 | 0.070 | 0.195 | 0.200 | 0.480 | 0.374 | 0.043 | 0.349 | 0.229 | 0.550 | 0.444 | 0.461 | 0.103 | 0.395 | 0.061 | 0.158 | 0.056 |
| GPQ12 | 0.132 | 0.107 | 0.107 | 0.411 | 0.463 | 0.081 | 0.331 | 0.290 | 0.532 | 0.367 | 0.330 | 0.317 | 0.351 | 0.162 | 0.301 | 0.045 |
| GPQ2 | 0.153 | 0.109 | 0.108 | 0.452 | 0.405 | 0.030 | 0.433 | 0.197 | 0.709 | 0.228 | 0.116 | 0.207 | 0.402 | 0.137 | 0.322 | 0.143 |
| GPQ3 | 0.074 | 0.234 | 0.059 | 0.345 | 0.403 | 0.155 | 0.393 | 0.323 | 0.632 | 0.155 | 0.314 | 0.176 | 0.485 | 0.036 | 0.381 | 0.059 |
| GPQ4 | 0.104 | 0.110 | 0.079 | 0.357 | 0.430 | 0.321 | 0.283 | 0.189 | 0.611 | 0.306 | 0.288 | 0.127 | 0.382 | 0.034 | 0.136 | 0.064 |
| GPQ5 | 0.054 | 0.106 | 0.030 | 0.432 | 0.047 | 0.243 | 0.360 | 0.230 | 0.767 | 0.458 | 0.345 | 0.242 | 0.425 | 0.016 | 0.186 | 0.183 |
| GPQ6 | 0.126 | 0.213 | 0.028 | 0.353 | 0.297 | 0.134 | 0.156 | 0.008 | 0.603 | 0.207 | 0.201 | 0.041 | 0.393 | 0.197 | 0.362 | 0.116 |
| GPQ7 | 0.223 | 0.052 | 0.059 | 0.394 | 0.334 | 0.109 | 0.441 | 0.258 | 0.547 | 0.327 | 0.379 | 0.055 | 0.491 | 0.018 | 0.498 | 0.012 |
| GPQ8 | 0.302 | 0.095 | 0.053 | 0.393 | 0.332 | 0.300 | 0.208 | 0.021 | 0.514 | 0.249 | 0.347 | 0.006 | 0.268 | 0.039 | 0.454 | 0.063 |
| GPQ9 | 0.230 | 0.121 | 0.214 | 0.372 | 0.296 | 0.084 | 0.263 | 0.122 | 0.790 | 0.216 | 0.356 | 0.063 | 0.430 | 0.287 | 0.184 | 0.036 |
| GPR1 | 0.210 | 0.030 | 0.421 | 0.473 | 0.447 | 0.100 | 0.333 | 0.239 | 0.189 | 0.579 | 0.471 | 0.119 | 0.390 | 0.121 | 0.409 | 0.096 |
| GPR2 | 0.026 | 0.106 | 0.008 | 0.432 | 0.360 | 0.175 | 0.482 | 0.348 | 0.025 | 0.733 | 0.063 | 0.069 | 0.407 | 0.112 | 0.420 | 0.142 |
| GPR3 | 0.108 | 0.016 | 0.157 | 0.343 | 0.306 | 0.195 | 0.459 | 0.325 | 0.354 | 0.782 | 0.325 | 0.154 | 0.245 | 0.058 | 0.401 | 0.136 |
| GPR4 | 0.149 | 0.094 | 0.137 | 0.410 | 0.297 | 0.068 | 0.458 | 0.041 | 0.303 | 0.546 | 0.467 | 0.025 | 0.398 | 0.191 | 0.042 | 0.035 |
| GPR5 | 0.047 | 0.081 | 0.074 | 0.300 | 0.389 | 0.047 | 0.662 | 0.120 | 0.365 | 0.827 | 0.305 | 0.168 | 0.290 | 0.077 | 0.205 | 0.190 |
| GPV1 | 0.231 | 0.101 | 0.138 | 0.327 | 0.185 | 0.129 | 0.236 | 0.126 | 0.269 | 0.202 | 0.794 | 0.016 | 0.355 | 0.276 | 0.252 | 0.043 |
| GPV2 | 0.151 | 0.045 | 0.033 | 0.265 | 0.393 | 0.053 | 0.355 | 0.252 | 0.333 | 0.198 | 0.670 | 0.072 | 0.283 | 0.038 | 0.324 | 0.396 |
| GPV3 | 0.018 | 0.208 | 0.107 | 0.075 | 0.489 | 0.190 | 0.300 | 0.192 | 0.334 | 0.367 | 0.694 | 0.158 | 0.260 | 0.246 | 0.301 | 0.478 |
| GPV4 | 0.183 | 0.226 | 0.173 | 0.450 | 0.340 | 0.023 | 0.342 | 0.212 | 0.341 | 0.182 | 0.755 | 0.006 | 0.498 | 0.128 | 0.321 | 0.074 |
| GPV5 | 0.128 | 0.008 | 0.157 | 0.354 | 0.323 | 0.104 | 0.330 | 0.293 | 0.466 | 0.325 | 0.718 | 0.045 | 0.441 | 0.234 | 0.375 | 0.014 |
| GPV6 | 0.203 | 0.052 | 0.199 | 0.051 | 0.448 | 0.074 | 0.491 | 0.298 | 0.510 | 0.191 | 0.765 | 0.118 | 0.151 | 0.001 | 0.299 | 0.194 |
| GPV7 | 0.175 | 0.116 | 0.084 | 0.288 | 0.372 | 0.020 | 0.330 | 0.352 | 0.583 | 0.303 | 0.797 | 0.120 | 0.374 | 0.175 | 0.327 | 0.252 |
| GPV8 | 0.193 | 0.101 | 0.162 | 0.309 | 0.268 | 0.143 | 0.406 | 0.317 | 0.392 | 0.160 | 0.655 | 0.052 | 0.110 | 0.010 | 0.392 | 0.146 |
| GPV9 | 0.213 | 0.080 | 0.016 | 0.267 | 0.256 | 0.190 | 0.484 | 0.418 | 0.111 | 0.196 | 0.634 | 0.199 | 0.439 | 0.107 | 0.272 | 0.129 |
| GT1 | 0.175 | 0.145 | 0.084 | 0.288 | 0.372 | 0.020 | 0.330 | 0.303 | 0.297 | 0.352 | 0.120 | 0.583 | 0.374 | 0.175 | 0.327 | 0.252 |
| GT2 | 0.193 | 0.101 | 0.162 | 0.309 | 0.268 | 0.143 | 0.406 | 0.160 | 0.355 | 0.317 | 0.052 | 0.692 | 0.096 | 0.010 | 0.392 | 0.146 |
| GT3 | 0.213 | 0.080 | 0.016 | 0.267 | 0.256 | 0.190 | 0.484 | 0.196 | 0.634 | 0.418 | 0.199 | 0.711 | 0.439 | 0.107 | 0.272 | 0.129 |
| GT4 | 0.259 | 0.145 | 0.141 | 0.488 | 0.490 | 0.087 | 0.381 | 0.253 | 0.526 | 0.166 | 0.177 | 0.807 | 0.410 | 0.057 | 0.329 | 0.243 |
| GT5 | 0.153 | 0.195 | 0.108 | 0.452 | 0.118 | 0.030 | 0.433 | 0.197 | 0.512 | 0.171 | 0.207 | 0.823 | 0.402 | 0.137 | 0.238 | 0.143 |
| GT6 | 0.074 | 0.234 | 0.059 | 0.345 | 0.403 | 0.155 | 0.393 | 0.323 | 0.314 | 0.316 | 0.176 | 0.655 | 0.485 | 0.036 | 0.344 | 0.059 |
| PBC1 | 0.100 | 0.110 | 0.047 | 0.439 | 0.493 | 0.124 | 0.251 | 0.089 | 0.470 | 0.448 | 0.451 | 0.046 | 0.772 | 0.033 | 0.463 | 0.064 |
| PBC2 | 0.054 | 0.009 | 0.085 | 0.343 | 0.310 | 0.066 | 0.386 | 0.091 | 0.429 | 0.368 | 0.326 | 0.040 | 0.659 | 0.211 | 0.360 | 0.192 |
| PBC3 | 0.086 | 0.037 | 0.230 | 0.037 | 0.158 | 0.089 | 0.157 | 0.182 | 0.488 | 0.355 | 0.474 | 0.109 | 0.932 | 0.108 | 0.422 | 0.027 |
| PBC4 | 0.047 | 0.214 | 0.089 | 0.371 | 0.337 | 0.090 | 0.114 | 0.280 | 0.420 | 0.265 | 0.390 | 0.046 | 0.763 | 0.215 | 0.242 | 0.063 |
| PCE1 | 0.042 | 0.087 | 0.009 | 0.131 | 0.499 | 0.132 | 0.650 | 0.120 | 0.440 | 0.403 | 0.415 | 0.154 | 0.168 | 0.525 | 0.370 | 0.094 |
| PCE2 | 0.019 | 0.326 | 0.241 | 0.387 | 0.311 | 0.217 | 0.106 | 0.014 | 0.390 | 0.175 | 0.335 | 0.079 | 0.180 | 0.679 | 0.118 | 0.161 |
| PCE3 | 0.159 | 0.069 | 0.082 | 0.443 | 0.347 | 0.021 | 0.211 | 0.183 | 0.334 | 0.277 | 0.477 | 0.130 | 0.148 | 0.579 | 0.353 | 0.094 |
| PCE4 | 0.214 | 0.008 | 0.251 | 0.176 | 0.304 | 0.094 | 0.417 | 0.104 | 0.378 | 0.292 | 0.492 | 0.025 | 0.143 | 0.690 | 0.418 | 0.019 |
| PCE5 | 0.201 | 0.057 | 0.061 | 0.454 | 0.432 | 0.043 | 0.507 | 0.288 | 0.484 | 0.405 | 0.135 | 0.043 | 0.044 | 0.575 | 0.417 | 0.002 |

| | | | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PCE6 | 0.001 | 0.026 | 0.314 | 0.301 | 0.332 | 0.071 | 0.410 | 0.217 | 0.393 | 0.236 | 0.456 | 0.005 | 0.139 | 0.673 | 0.412 | 0.072 |
| SPR1 | 0.489 | 0.206 | 0.152 | 0.006 | 0.073 | 0.021 | 0.057 | 0.128 | 0.011 | 0.029 | 0.043 | 0.266 | 0.241 | 0.078 | 0.572 | 0.079 |
| SPR10 | 0.114 | 0.213 | 0.223 | 0.087 | 0.125 | 0.093 | 0.025 | 0.236 | 0.021 | 0.023 | 0.108 | 0.086 | 0.165 | 0.131 | 0.572 | 0.178 |
| SPR11 | 0.013 | 0.015 | 0.017 | 0.170 | 0.128 | 0.212 | 0.192 | 0.168 | 0.129 | 0.094 | 0.300 | 0.293 | 0.049 | 0.163 | 0.681 | 0.214 |
| SPR2 | 0.072 | 0.220 | 0.021 | 0.021 | 0.128 | 0.228 | 0.024 | 0.049 | 0.154 | 0.273 | 0.014 | 0.141 | 0.093 | 0.283 | 0.517 | 0.060 |
| SPR3 | 0.002 | 0.041 | 0.020 | 0.057 | 0.123 | 0.123 | 0.084 | 0.130 | 0.096 | 0.115 | 0.117 | 0.023 | 0.016 | 0.003 | 0.643 | 0.010 |
| SPR4 | 0.177 | 0.030 | 0.072 | 0.149 | 0.028 | 0.093 | 0.121 | 0.034 | 0.117 | 0.217 | 0.140 | 0.083 | 0.206 | 0.187 | 0.543 | 0.101 |
| SPR5 | 0.203 | 0.287 | 0.054 | 0.418 | 0.263 | 0.092 | 0.162 | 0.041 | 0.281 | 0.248 | 0.454 | 0.337 | 0.019 | 0.201 | 0.602 | 0.172 |
| SPR6 | 0.005 | 0.356 | 0.099 | 0.240 | 0.304 | 0.215 | 0.153 | 0.032 | 0.140 | 0.099 | 0.072 | 0.019 | 0.057 | 0.009 | 0.742 | 0.101 |
| SPR7 | 0.051 | 0.040 | 0.021 | 0.067 | 0.058 | 0.136 | 0.138 | 0.092 | 0.078 | 0.056 | 0.258 | 0.165 | 0.148 | 0.124 | 0.700 | 0.027 |
| SPR8 | 0.044 | 0.038 | 0.036 | 0.121 | 0.203 | 0.005 | 0.085 | 0.018 | 0.128 | 0.248 | 0.063 | 0.021 | 0.266 | 0.235 | 0.689 | 0.097 |
| SPR9 | 0.040 | 0.080 | 0.011 | 0.027 | 0.090 | 0.028 | 0.044 | 0.047 | 0.048 | 0.141 | 0.142 | 0.013 | 0.241 | 0.117 | 0.763 | 0.207 |
| SUB1 | 0.104 | 0.022 | 0.079 | 0.357 | 0.430 | 0.321 | 0.283 | 0.189 | 0.151 | 0.105 | 0.288 | 0.127 | 0.382 | 0.034 | 0.064 | 0.736 |
| SUB2 | 0.054 | 0.106 | 0.030 | 0.432 | 0.247 | 0.243 | 0.360 | 0.230 | 0.156 | 0.170 | 0.345 | 0.242 | 0.425 | 0.016 | 0.183 | 0.857 |
| SUB3 | 0.126 | 0.213 | 0.028 | 0.353 | 0.297 | 0.134 | 0.156 | 0.008 | 0.207 | 0.303 | 0.201 | 0.041 | 0.393 | 0.197 | 0.116 | 0.562 |
| SUB4 | 0.223 | 0.052 | 0.059 | 0.394 | 0.334 | 0.109 | 0.441 | 0.258 | 0.327 | 0.347 | 0.379 | 0.055 | 0.491 | 0.018 | 0.012 | 0.598 |
| SUB5 | 0.302 | 0.095 | 0.053 | 0.393 | 0.332 | 0.300 | 0.208 | 0.021 | 0.249 | 0.314 | 0.347 | 0.006 | 0.268 | 0.039 | 0.063 | 0.654 |
| SUB6 | 0.230 | 0.121 | 0.214 | 0.372 | 0.296 | 0.084 | 0.263 | 0.122 | 0.216 | 0.090 | 0.356 | 0.063 | 0.430 | 0.287 | 0.036 | 0.784 |
| SUB7 | 0.030 | 0.030 | 0.015 | 0.437 | 0.362 | 0.222 | 0.305 | 0.129 | 0.309 | 0.384 | 0.373 | 0.139 | 0.350 | 0.077 | 0.169 | 0.665 |

Source: Own Computation, 2022.

5.4.2 Collinearity Statistics (VIF)

The collinearity issue must be avoided by using a VIF of 5 or less, or a tolerance level of 0.2 or higher (Hair et al., 2011). It is recommended to use a latent variable threshold of 3.3 or less when using VIFs to test multicollinearity in a manner similar to this. It is necessary to confirm the correlation between the predictors of a variable when factor loadings are greater than 0.70 values in order to judge whether multi-collinearity tests are viable. Multiple co-linearity inflates standard errors incorrectly and occasionally causes some model parameters to become unstable (Kock, 2012). Variance inflation factors (VIFs) are analyzed for each of the predictor variables to determine the level of multicollinearity. According to Table 5, every VIF value was less than 3.3, falling between the recommended threshold values of 1.350 and 2.841, indicating the absence of multi-collinearity for all outer indicators. The inner VIF values, which range from 1.705 to 2.317, are also below the advised level.

Table 5. Collinearity statistics (VIF)

| Constructs | Factors | Outer VIF Values | GPI | GBB |
|-----------------------------|---------|------------------|-------|-----|
| Awareness of Green Product | AGP1 | 1.023 | 2.266 | |
| | AGP2 | 1.513 | | |
| | AGP3 | 1.515 | | |
| | AGP4 | 1.109 | | |
| | AGP5 | 1.039 | | |
| | AGP6 | 1.073 | | |
| Collectivism | COL1 | 1.187 | 1.721 | |
| | COL2 | 1.515 | | |
| | COL3 | 1.579 | | |
| | COL4 | 2.387 | | |
| | COL5 | 2.485 | | |
| | COL6 | 1.551 | | |
| Environmental Advertisement | EAD1 | 1.234 | 1.785 | |
| | EAD10 | 3.160 | | |
| | EAD2 | 2.751 | | |
| | EAD3 | 1.723 | | |
| | EAD4 | 2.638 | | |
| | EAD5 | 2.165 | | |
| | EAD6 | 1.619 | | |
| | EAD7 | 2.031 | | |
| | EAD8 | 3.099 | | |
| EAD9 | 3.057 | 1.389 | | |

| | | | | |
|-----------------------------------|-------|-------|-------|-------|
| Environmental Concern | EC1 | 3.085 | 2.013 | |
| | EC10 | 1.862 | | |
| | EC11 | 2.607 | | |
| | EC2 | 2.291 | | |
| | EC3 | 2.567 | | |
| | EC4 | 2.061 | | |
| | EC5 | 2.077 | | |
| | EC6 | 1.924 | | |
| | EC7 | 2.396 | | |
| | EC8 | 2.524 | | |
| Ecological Packaging | ECP1 | 1.730 | 2.389 | |
| | ECP2 | 2.473 | | |
| | ECP3 | 1.762 | | |
| | ECP4 | 1.989 | | |
| | ECP5 | 1.935 | | |
| | ECP6 | 1.103 | | |
| High Price of Ecological Products | EPE1 | 1.070 | 1.873 | |
| | EPE2 | 1.185 | | |
| | EPE3 | 1.120 | | |
| | EPE4 | 1.052 | | |
| Consumer Buying Behavior | GBB1 | 1.414 | 1.720 | |
| | GBB10 | 1.469 | | |
| | GBB11 | 2.214 | | |
| | GBB12 | 1.304 | | |
| | GBB13 | 1.251 | | |
| | GBB2 | 2.125 | | |
| | GBB3 | 1.609 | | |
| | GBB4 | 1.502 | | |
| | GBB5 | 1.431 | | |
| | GBB6 | 2.001 | | |
| | GBB7 | 1.976 | | |
| | GBB8 | 1.696 | | |
| | GBB9 | 1.719 | | |
| Green Purchasing Intention | GPI1 | 1.286 | 1.673 | |
| | GPI10 | 1.127 | | |
| | GPI11 | 1.214 | | 1.848 |
| | GPI12 | 1.186 | | |
| | GPI2 | 1.294 | | |
| | GPI3 | 1.288 | | |
| | GPI4 | 1.196 | | |
| | GPI5 | 1.812 | | |
| | GPI6 | 1.899 | | |
| | GPI7 | 1.767 | | |
| GPI8 | 1.782 | | | |
| GPI9 | 1.169 | | | |
| Green Perceived Quality | GPQ1 | 2.330 | 1.775 | |
| | GPQ11 | 1.683 | | |
| | GPQ12 | 1.417 | | |
| | GPQ2 | 2.169 | | |
| | GPQ3 | 2.175 | | |
| | GPQ4 | 3.032 | | |
| | GPQ5 | 2.041 | | |
| | GPQ6 | 1.903 | | |
| | GPQ7 | 1.702 | | |
| | GPQ8 | 2.255 | | |
| | GPQ9 | 1.799 | | |
| | GPR1 | 1.304 | | 2.062 |

| | | | |
|----------------------------------|-------|-------|-------|
| Green Perceived Risk | GPR2 | 2.323 | |
| | GPR3 | 2.438 | |
| | GPR4 | 1.809 | |
| | GPR5 | 1.845 | |
| Green Perceived Value | GPV1 | 1.837 | |
| | GPV2 | 1.974 | 1.889 |
| | GPV3 | 1.685 | |
| | GPV4 | 1.562 | |
| | GPV5 | 1.894 | |
| | GPV6 | 2.903 | |
| | GPV7 | 2.310 | |
| | GPV8 | 1.798 | |
| | GPV9 | 1.301 | |
| Green Trust | GT1 | 1.274 | |
| | GT2 | 1.329 | 1.585 |
| | GT3 | 1.424 | |
| | GT4 | 2.003 | |
| | GT5 | 2.186 | |
| | GT6 | 1.259 | |
| Perceived Behavioral Control | PBC1 | 1.779 | |
| | PBC2 | 1.439 | |
| | PBC3 | 2.215 | |
| | PBC4 | 1.730 | |
| Perceived Consumer Effectiveness | PCE1 | 1.446 | 1.721 |
| | PCE2 | 1.609 | |
| | PCE3 | 3.062 | |
| | PCE4 | 2.540 | |
| | PCE5 | 2.374 | |
| | PCE6 | 1.557 | |
| Spiritual-Orientation | SPR1 | 1.149 | |
| | SPR10 | 1.154 | 1.389 |
| | SPR11 | 1.292 | |
| | SPR2 | 1.185 | |
| | SPR3 | 1.533 | |
| | SPR4 | 1.813 | |
| | SPR5 | 1.472 | |
| | SPR6 | 1.376 | |
| | SPR7 | 1.493 | |
| | SPR8 | 2.451 | |
| SPR9 | 2.125 | | |
| Subjective Norm | SUB1 | 1.977 | 1.334 |
| | SUB2 | 1.638 | |
| | SUB3 | 1.799 | |
| | SUB4 | 1.623 | |
| | SUB5 | 2.018 | |
| | SUB6 | 1.506 | |
| | SUB7 | 1.509 | |

Source: Own Computation, 2022.

5.4.3 R-Square and Q-square

The R square for this study was large and modest. The R^2 value of 0.550 demonstrated that approximately 55% of the variations in consumers' green purchasing intentions could be explained by factors such as green perceived quality, green perceived value, green perceived risk, perceived behavioral control, perceived consumer effectiveness, green trust, environmental concern, product awareness, environmental advertising, subjective norm, collectivism, spiritual orientation, high price of ecological products, and ecological packaging. The R^2 value of 0.406 indicated that approximately 30.6 percent of the variations in green buying behavior decisions could be used

to predict green purchasing intentions.

Table 6. Quality criteria

| | R-Square | R -Square Adjusted |
|----------------------------|----------|--------------------|
| Green Purchasing Intention | 0.550 | 0.475 |
| Green Buying Behavior | 0.306 | 0.299 |

Source: Own Computation (2022).

5.4.4 F-Square

According to Cohen (1988), a “small” effect size is 0.02, a “medium” effect size is 0.15, and a “high” effect size is 0.35. We can conclude that the model’s effect of green purchasing intention on consumer purchasing behavior is significant. Similarly, the effect of High Price of Ecological Products and Spiritual Orientation from the model is High on Green Purchasing Intention while the effect of Collectivism, Environmental Advertisement, Green Perceived Risk, Green Trust, Green Perceived Quality, and Green Perceived Value are Medium effect on Green Purchasing Intention and the effect of Awareness of Green Products, Ecological Concern, Ecological Packaging, Perceived Behavioral Control, and Perceived Consumer Effectiveness are Low on Green Purchasing.

Table 7. Effect size (F Square)

| | AGP | CBB | HPE | EC | ECP | COLL | Envadv | GPR | GT | GPQ | GPV | GPI | PBC | PCE | SUB | SprOr |
|--------|-----|-------|-----|----|-----|------|--------|-----|----|-----|-----|-------|-----|-----|-----|-------|
| AGP | | | | | | | | | | | | 0.003 | | | | |
| CBB | | | | | | | | | | | | | | | | |
| HPE | | | | | | | | | | | | 0.153 | | | | |
| EC | | | | | | | | | | | | 0.017 | | | | |
| ECP | | | | | | | | | | | | 0.011 | | | | |
| COLL | | | | | | | | | | | | 0.038 | | | | |
| Envadv | | | | | | | | | | | | 0.037 | | | | |
| GPR | | | | | | | | | | | | 0.047 | | | | |
| GT | | | | | | | | | | | | 0.051 | | | | |
| GPQ | | | | | | | | | | | | 0.024 | | | | |
| GPV | | | | | | | | | | | | 0.071 | | | | |
| GPI | | 0.441 | | | | | | | | | | | | | | |
| PBC | | | | | | | | | | | | 0.017 | | | | |
| PCE | | | | | | | | | | | | 0.017 | | | | |
| SUB | | | | | | | | | | | | 0.004 | | | | |
| SprOr | | | | | | | | | | | | 0.198 | | | | |

Source: Own Computation, 2022.

5.5 Hypothesis Testing Results

Hair et al. (2017) recommended using a bootstrapping procedure with a resample of 5,000 samples to examine the R^2 , beta (β), and corresponding t-values in order to evaluate the structural model. They also recommended that researchers report the effect sizes in addition to these fundamental metrics (f^2). According to Sullivan and Feinn (2012), a p-value can tell the reader whether an effect exists, but it cannot tell them how big of an effect it is. Both the substantive significance (effect size) and statistical significance (p-value) are crucial findings to be reported when reporting and interpreting studies (p. 279).

As shown in Figure 4, factors that affect green purchase intention include perceived quality, perceived value, perceived risk, perceived behavioral control, perceived consumer effectiveness, perceived trust, environmental concern, awareness of products, environmental advertising, subjective norm, collectivism, spiritual orientation, high price of ecological products, and ecological packaging. For green purchase intention, the variance explained by these factors of dimensions is 55%. In turn, consumer green behavioral outcomes are influenced by green purchase intentions; 30.6 percent of the variance is explained by this dimension. The results of this study show that among the antecedents, green perceived value, green perceived quality, green trust, environmental concern, green advertisement, ecological packaging, spiritual orientation, and collectivism are positively correlated to green purchasing intention and are found to be significant predictors of green purchasing intention.

The high cost of ecological products and green perceived risk, on the other hand, are discovered to be significant

predictors of green purchasing intention and have a negative correlation with it. Hahn and Ang (2017) suggest using Bayesian techniques, Bayes factors or likelihood ratios, effect size estimates and confidence intervals, decision-theoretic modeling, and Bayesian methods to report results in quantitative studies with rigor. In accordance with recommendations, we have reported effect sizes and confidence intervals.

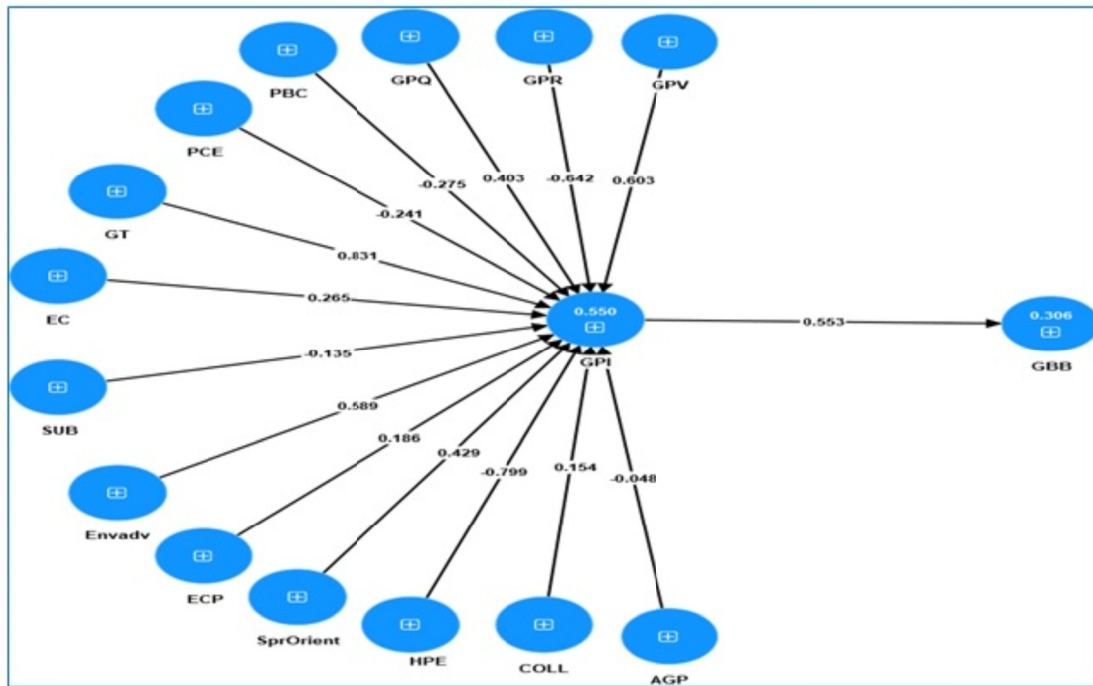


Figure 4. Mediating role of green purchase intention between antecedents of green purchase intention and green buying behavior

Source: Own Computation, 2022.

As shown on Table 8, eight (8) of the nine (9) proposed hypothesis and six of the ten (10) sub-hypotheses for this study were supported.

Table 8. Hypothesis testing

| Hypothesis | Relationship | Std Beta(β) | STDEV | T value ($ \beta/STDEV $) | P-Value | VIF | Decision |
|------------|-------------------|---------------------|-------|-----------------------------|---------|-------|---------------|
| H1 | CF -> GPI | 0.366 | 0.057 | 6.421 | 0.018 | 1.647 | Supported |
| H-1a | GPV -> GPI | 0.603 | 0.057 | 10.579 | 0.000 | 2.062 | Supported |
| H-1b | GPQ -> GPI | 0.403 | 0.061 | 6.607 | 0.000 | 1.673 | Supported |
| H-1c | GPR -> GPI | -0.642 | 0.059 | -10.881 | 0.000 | 1.775 | Supported |
| H-1d | PBC -> GPI | -0.275 | 0.069 | -3.986 | 0.015 | 1.873 | Not supported |
| H-1e | PCE -> GPI | -0.241 | 0.054 | -4.463 | 0.022 | 1.721 | Not Supported |
| H2 | CIC -> GPI | 0.264 | 0.054 | 4.889 | 0.021 | 1.799 | Supported |
| H-2a | AGP -> GPI | -0.048 | 0.053 | -0.906 | 3.402 | 2.266 | Not Supported |
| H-2b | EC -> GPI | 0.265 | 0.059 | 4.492 | 0.020 | 1.389 | Supported |
| H-2c | GT -> GPI | 0.831 | 0.085 | 9.776 | 0.000 | 1.889 | Supported |
| H3 | SF -> GPI | 0.054 | 0.067 | 0.806 | 3.632 | 2.975 | Not Supported |
| H-3a | SUB -> GPI | -0.135 | 0.068 | -1.985 | 0.045 | 1.334 | Not Supported |
| H-3b | COLL -> GPI | 0.154 | 0.066 | 2.333 | 0.043 | 1.721 | Supported |
| H4 | EnvAdv -> GPI | 0.589 | 0.062 | 9.500 | 0.000 | 1.785 | Supported |
| H5 | ECP -> GPI | 0.186 | 0.059 | 3.153 | 0.035 | 2.013 | Supported |
| H6 | HPE -> GPI | -0.799 | 0.085 | -9.400 | 0.000 | 2.389 | Supported |
| H7 | SprOr -> GPI | 0.429 | 0.067 | 6.403 | 0.09 | 1.389 | Supported |
| H8 | GPI -> GBB | 0.553 | 0.068 | 8.132 | 0.000 | 1.720 | Supported |
| H9 | AGPI -> GPI-> GBB | 0.304 | 0.066 | 4.621 | 0.04 | 1.705 | Supported |

Source: Own Computation, 2022.

Furthermore, the mediating role of Green Purchase Intention has been investigated. In other words, Green Purchase Intention's mediating roles assess the indirect effect of antecedent forces on consumer purchasing behavior. When a third variable/construct intervenes between two other related constructs, a mediating effect is created (Hair et al., 2010). The indirect effects are calculated by multiplying the path coefficient from the independent variable to the mediator variable by the path coefficient from the mediator variable to the dependent variable.

The SEM analysis produced direct and indirect impact analysis (mediating effect). Table 9 displays the indirect effect estimates and the mediating effect. As a result, green purchase intention mediates the effect of antecedents of Green Purchase Intention on consumer purchase behavior, as the indirect effect estimates are higher than the direct effect estimates ($0.305 > 0.278$).

Table 9. Mediating role of antecedents of green purchase intention on green purchase intention behavior

| Hypothesis | Direct Effect | Indirect Effect | Status | Evidence |
|------------|---------------|-----------------|---------|-----------|
| H9 | 0.278 | 0.305 | Mediate | Supported |

Source: Own Computation, 2022.

5.6 Discussion of Results

Nine (9) main hypotheses and ten (10) sub-hypotheses with theoretical and empirical support were empirically tested using data collected from five major cities in Ethiopia. The study discusses the research findings and how they relate to previous literature in the sections that follow.

According to Hypothesis 1, "Cognitive factors have a positive and significant impact on green Purchase Intention" ($\beta = 0.366$, $P = 0.018 < .05$). The findings of this study are in line with a large number of earlier studies (Yusuf, Awang, Jusoff, & Ibrahim, 2017; Hen & Chang, 2012; Chen, Chang, & Chen, 2012).

- According to sub-Hypothesis H1a, the intention to make green purchases is positively impacted by the perceived value of going green ($\beta = 0.603$, $P = 0.000 < .05$). The results of this study are consistent with a large number of earlier studies (Zhuang, Cumiskey, Xiao, & Alford, 2010; Lin, Weng, & Hsieh, 2003; Chen & Chang, 2012; Zhuang et al., 2010; Tan & Goh, 2018).
- In sub-Hypothesis H1b, it is proposed that green perceived quality will significantly and favorably influence consumers' intentions to make green purchases ($\beta = 0.403$, $P = 0.000 < .05$). The results of this study agree with those of numerous earlier studies in a significant way (Chen & Chang, 2013; Nekmahmud & Fekete-Farkas, 2020; Wang et al., 2020; Wu & Chen, 2014).
- According to sub-hypothesis h1c, green purchase intention is negatively impacted by perceived green risk ($\beta = -0.642$, $P = 0.000 < .05$). The findings of this study significantly agree with those of numerous earlier studies (Chen & Chang, 2012; Wu et al., 2015; Tarabieh, 2020).
- According to sub-hypothesis h1d, consumers' intentions to make green purchases are positively impacted by their perceptions of behavioral control ($\beta = -0.275$, $P = 0.015 < .05$). The results of this study contradict those of earlier studies (Ajzen, 1991; Ajzen, 2006; Xu et al., 2020; Wang et al., 2019). Thus, further investigation need to be done.
- According to sub-hypothesis h1e, perceived consumer effectiveness influences consumers' intentions to make green purchases favorably ($\beta = -0.241$, $P = 0.022 < .05$). The results of this study are inconsistent with many previous studies (Ellen et al., 1991; Tan, 2011; Dagher & Itani, 2014; Benda-Prokeinová et al., 2017; Sharma & Dayal, 2016; Dagher & Itani, 2014; Benda-Prokeinová et al., 2017; Sharma & Foroapon, 2019). Thus, further investigation need to be done.

Hypothesis -2 postulates that "Consumer Individual Characteristics has a positive and significant effect on green Purchase Intention" ($\beta = 0.264$, $P = 0.021 < .05$). The results of this study are consistent with the results of numerous earlier studies (Rhodes et al., 2002; Dezdar, 2017).

- Sub-hypothesis h2a states that awareness of green products has a positive effect on green purchase intention ($\beta = -0.048$, $P = 3.402 < .05$). "The results of this study are consistent with the results of earlier studies" (Pickett-Baker & Ozaki, 2008; Fryxell & Lo, 2003; Lee, 2017; Wang et al., 2014; Ahmad & Thyagaraj, 2015; Choi & Johnson, 2019).
- Sub-hypothesis h2b postulate that Environmental concern has a positive effect on green purchase intention

($\beta = 0.265$, $P = 0.020 < .05$). “The results of this study are inconsistent with the results of earlier studies” ((Dunlap & Jones, 2002; Paul et al., 2016; Nekmahmud & Fekete-Farkas, 2020; Hartmann & Apaolaza-Ibáñez, 2012). This requires further investigation.

- Sub-hypothesis h2c postulates that green trust has a positive effect on consumers’ intentions to make green purchases ($\beta = 0.831$, $P = 0.000 < .05$). The results of this study agree with many earlier studies’ findings (Chen, 2010; Tarabieh, 2020; Harper & Makatouni, 2002; Chen & Chang, 2012; Harris & Goode, 2010; Gefen & Straub, 2004).

The third hypothesis claims (H-3) that “social factors have a positive and significant effect on green purchase intention” ($\beta = 0.054$, $P = 3.632 < .05$). The findings of this study do not agree with those of earlier studies (Ajzen, 1991; Laroche et al., 2001). This requires further investigation.

- According to sub-hypothesis h3a, subjective norm has a positive effect on consumers’ intentions to make green purchases ($\beta = 0.054$, $P = 3.632 < .05$). This study’s findings are inconsistent with previous findings (Ajzen, 1991; Bong KO & Jin, 2017; Yeon Kim & Chung, 2011). Thus, further investigation need to be done.
- In Sub-Hypothesis h3b, it is proposed that collective action will have a favorable impact on consumers’ intentions to make green purchases ($\beta = 0.154$, $P = 0.043 < .05$). The findings of this study strongly agree with those of numerous earlier studies (McCarty & Shrum, 1994; Laroche et al., 2001; Zhu & Chen, 2008).

According to Hypothesis #4, “Environmental advertising significantly and positively influences green purchase intention” ($\beta = 0.589$, $P = 0.000 < .05$). The results of this study are consistent with those of numerous earlier studies (Akehurst et al., 2012; Saxena & Khandelwal, 2012; Hartmann & Ibanez, 2005), among others.

According to Hypothesis # 5, “Ecological packaging has a favorable and significant impact on green purchase intention” ($\beta = 0.186$, $P = 0.035 < .05$). This study’s findings are in line with the findings of numerous earlier studies (Hartmann & Ibanez, 2005; Saxena & Khandelwal, 2012).

According to hypothesis 6, “High prices of ecological products had a negative and significant effect on green purchase intention” ($\beta = -0.799$, $P = 0.000 < .05$). The results of this study are consistent with the outcomes of numerous earlier studies (Laroche et al., 2001; Paettie & Crane, 2005).

In accordance with Hypothesis 7, “Consumers’ spiritual orientation has a positive and significant effect on green Purchase Intention” ($\beta = 0.429$, $P = 0.009 < .05$). The outcomes of many earlier studies are consistent with the findings of this study (Sharma & Kesharwani, 2015; Sharma & Sharma, 2013; Jackson, 2006; Belk, Wallendorf, & Sherry Jr, 1989; Pepper, Jackson, & Uzzell, 2009; Ehrenfeld, 2008; Sheth, Sethia, & Srinivas, 2011).

According to Hypothesis 8, “Consumers’ “Purchasing Intention Has a Positive and Significant Effect on Consumer Green Buying Behavior” ($\beta = 0.553$, $P = 0.000 < .05$). This study’s findings are consistent with those of a large number of earlier studies (Chen & Chang, 2012; Brian et al., 2001).

According to Hypothesis 9, “Purchasing Intention mediates the relationship between antecedents of green product Purchasing Intention & Consumers Green Buyer Behavior” ($\beta = 0.304$, $P = 0.004 < .05$). The results of this study are in line with many earlier studies’ findings (Glegg et al., 2005; Adkins, 2004; Varadarajan & Menon, 1988; Ottman, 1998; Binder & Blankenberg, 2017).

6. Conclusion

Previous research, whether conducted in Ethiopia or elsewhere, has overlooked the role of green purchase intention in mediating the relationship between antecedents of green purchase intention and green purchasing behavior. Furthermore, there was no agreement in previous studies on the characteristics of antecedents of green purchase intention and green purchasing behavior. The impact of each dimension of green purchase intention antecedents (cognitive factors, green perceived value, green perceived quality, and green perceived risk, consumer individual characteristics, green trust, collectivism, environmental advertisement, ecological packaging, high prices for ecological products, and consumer spiritual orientation, perceived ability to control behavior, perceived consumer effectiveness, environmental concern, social factors, and subjectivity). According to the study, cognitive factors, green perceived value, green perceived quality, and green perceived risk, consumer individual characteristics, green trust, collectivism, environmental advertisement, ecological packaging, high prices for ecological products, and consumer spiritual orientation all have a significant influence on consumers’ intentions to make green purchases.

The perceived ability to control behavior, perceived consumer effectiveness, environmental concern, social factors, and subjective norm, on the other hand, did not significantly affect consumers’ intentions to make green

purchases. The study's findings also showed that the relationship between consumers' green purchasing behavior and green purchase intention is mediated by green purchase intention. The findings of this study will also offer recommendations to companies selling eco-friendly products and to agencies in charge of environmental protection. The more consumers are concerned about environmental issues, the more they intent to buy green products.

Given the aforementioned findings and results, it is advised that marketers and policymakers create and implement green business strategies and policies that benefit both businesses and the environment. When a practitioner focuses on the causes of green consumer behavior, the size of the green market may grow. Employers should educate their staff about environmental sustainability. Additionally, they ought to implement green business practices. In response, businesses and NGOs should start green campaigns to raise public concern for the environment and environmental awareness. Government should organize forums, marches, and campaigns to promote environmental sustainability. In order to encourage consumers to purchase green products, they should also relax the duties and taxes on the production of green goods. All academic institutions need to update their curricula to address environmental issues and encourage environmentally friendly behavior.

7. Limitations and Future Research

The primary goal of the study was to examine the mediating role of green purchase intention between antecedents of green purchase intention and consumers' green purchasing behavior on selected cities in Ethiopia. This study was carried out in five of the biggest cities in Ethiopia. Future research may broaden the developed conceptual framework to incorporate additional Ethiopian cities. Consumers' intentions to make green purchases were found to be significantly influenced by cognitive factors, green perceived value, green perceived quality, green perceived risk, consumer individual characteristics, green trust, collectivism, environmental advertisement, ecological packaging, high prices for ecological products, and consumer spiritual orientation. In order to keep on making money, green product marketers must pay close attention to these factors. Since perceived behavioral control, perceived consumer effectiveness, perceived environmental concern, perceived social factors, and subjective norm were found to have relatively negligible effects on consumers' intentions to purchase green products, additional focus group discussions and interviews with consumers who have already purchased green products are required.

Future research can also use consumer values (functional value, social value, emotional value, conditional value, and epistemic value) as antecedents of the intention to make a green purchase. Purchase intention mediated the relationship between antecedents of purchase intention and consumer green buying behavior. This study framework model can be examined by using additional variables as mediators such as Green advertising. Green buying behaviour can be used as a mediating variable between green buying behavior antecedents and consumer satisfaction with green purchasing behavior. The relationship between consumer green buying behavior and purchase intention antecedents was mediated by purchase intention. Additional variables, such as personality, income level, age groups, and educational levels, can be used as moderators to examine the framework model for this study. The study's framework model didn't take demographic factors into account, and future research could look at how differently consumers' intentions to buy green products vary by demographic group.

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