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**INSTITUTE OF SOCIAL SCIENCES
AND APPLIED INFORMATICS**

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MASTER'S THESIS

**THE INFLUENCE OF THE APPLICATION OF ECO-INNOVATION IN
INTERNATION COMPANIES ON COMSUMER DECISION**

Kaunas 2026

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LIST OF ABBREVIATIONS

CSR	–	Corporate	Social	Responsibility
EKB	–	Engel–Kollat–Blackwell		Model
EU	–	European		Union
ESG	–	Environmental,	Social and	Governance
NGO	–	Non-Governmental		Organization
OECD	–	Organisation for Economic Co-operation and		Development
PCE	–	Perceived	Consumer	Effectiveness
R&D	–	Research	and	Development
SME	–	Small and	Medium-Sized	Enterprise
TPB	–	Theory of	Planned	Behaviour
UNCTAD – United Nations Conference on Trade and Development				
MNC – Multi National Corporation				
R&D – Research and Development				

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INTRODUCTION

The relevance of the topic

In recent years, the business world has been forced to reconsider how companies operate in the global market. Environmental issues, climate change and the growing pressure from governments, Non-Government Organizations (NGO) and society make it no longer possible for international companies to ignore sustainability dilemma. Eco-innovation, which can be broadly described as new products, services or processes that reduce environmental harm, has become one of the central themes in business studies (Rennings, 2000). It is not just a fashionable concept; rather, now it reflects a deeper transformation of how firms interact with markets and consumers. It is strongly believed that nowadays it is almost impossible to separate business strategies from environmental responsibility concerns, because reputational risks are too high. Eco-innovation must become one of the main topics for companies as it reduces the environmental impact, improves the operational efficiency, strengthens the competitive standing of organizations, and meets the rising demand of the consumers, not to forget regulation for more sustainable business practices (Ociepa-Kubicka & Pachura, 2017). In this sense, the topic is timely relevant, as well as practical, especially for international companies that must compete in diverse and demanding worldwide markets (OECD, 2009).

Problem	investigation	level
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The academic world has already produced an extensive number of studies on eco-innovation, especially in relation to technology, regulation and corporate responsibility. Scholars such as Rennings (2000) and Horbach (2008) emphasize the so-called “double externality problem”, meaning that eco-innovation provides benefits not only to the innovating company but also to society, which makes private investment more difficult in terms of return on investment. At the same time, consumer behavior is another large field of research. However, what seems to be less investigated is the intersection between eco-innovation in international firms and how exactly it influences consumer decision-making across different cultural and economic contexts. Some researchers like Carrillo-Hermosilla, del Río & Könnölä, (2010) talk about the systemic nature of eco-innovation, but they usually focus more on production or regulation than on the consumer perspective. Others like Demirel and Kesidou (2011) highlight the role of policy and cost pressures, but again the link with consumer decisions is not always central. So, the level of investigation is uneven – everybody knows a lot about environmental strategies or innovation management in general, but less about how these strategies shift consumer choices in the international markets.

On the one hand, companies are encouraged, and in some cases obliged by regulation, to innovate in a greener and more sustainable way (Porter & van der Linde, 1995). On the other hand, consumers are not always consistent: they claim to care about sustainability, but their actual purchasing behavior often shows a preference for cheaper or more convenient products (Auger & Devinney, 2007). This discrepancy creates uncertainty for international companies. Would it be wise for corporations to make significant investments for eco-innovation applications when customers might not necessarily reward those efforts with loyalty or willingness to pay extra. Do businesses risk losing reputation and competitiveness in markets where environmental awareness is rising. The problem lies in the unclear relationship between eco-innovation application and consumer decision-making, especially when cultural and market contexts differ so much from one country to another (Peattie & Crane, 2005). It is not simply a technical or economic issue, but also a behavioral and psychological one.

The essence of the problem

How does the application of eco-innovations in international companies influence consumer decision-making.

The object of the thesis is the influence of the application of eco-innovation in international companies on consumer decisions.

The aim of the thesis is to explore how eco-innovations implemented by international companies affect consumer decision-making processes.

Objectives of the thesis:

1. To summarise the concept and main types of eco-innovation discussed in academic and professional literature.
2. To systematize the main challenges and opportunities associated with implementing eco-innovations in international companies.
3. To identify the key factors that shape consumer behaviour in relation to environmentally friendly innovations.
4. To develop a conceptual research model explaining the relationship between eco-innovation practices implemented by international companies and consumer decision-making processes.
5. To assess the impact of eco-innovation practices on consumer purchase decision prospects in the consumer goods market.

The structure of the thesis.

The first part of the thesis introduces and defines the concept of eco-innovation, reviews different typologies and classifications and discusses its role in international companies. Then, it

analyses the challenges and opportunities companies face when implementing eco-innovations in a global environment, such as regulatory pressures, cost structures, and competitive advantages. The second chapter of the master thesis will analyse academic scholars from which an insight will be drawn to create research aims which will be analysed in the third chapter. The third part of thesis will be concentrated on the research methodology and empirical findings and hypothesis testing. The last conclusion will be drawn at the end of the thesis.

Thesis and research methods

The thesis will be based on a systematic analysis of academic sources, using methods such as comparative analysis, synthesis, and critical evaluation. The research will include empirical data collection using surveys to understand consumer perception on eco-innovation. The empirical research will help to build a conceptual framework that could be used later for empirical testing. Content analysis of academic literature, international business reports, and sustainability case studies will also be applied. Some qualitative insights from secondary data will be integrated, and, where relevant, quantitative data from existing surveys or industry statistics will be considered.

Literature used in the thesis

The master's thesis used international scientific publications, peer-reviewed journal articles, books on innovation management and sustainability, reports from organizations such as OECD, European Commission and UNCTAD, as well as recent research papers from databases like ScienceDirect, JSTOR, and Google Scholar. Authors such as Kemp and Pearson (2007), OECD (2009), and Horbach et al. (2012) are among the most frequently cited in eco-innovation research. Consumer behaviour theories from scholars like Kotler & Keller (2016), Ajzen (1991), and Thøgersen (2010) are also relevant for the analysis.

The theoretical significance of the thesis

The theoretical significance that this thesis holds stems from the fusion of the two perspectives that are studied in isolation: the internal application of eco-innovations within companies and the external process of consumer decision-making. Eco-innovation is often looked at from the angle of technological changes or corporate responsibility, while consumer behavior is generally studied from psychological or cultural viewpoints. This thesis attempts to link the two. The integration of these fields thus provides a wider perspective of how sustainability strategies companies develop may, in some instance, influence the consumer market decisions made by people or indeed be influenced by these decisions.

Creating a conceptual model that illustrates the interaction is the basis upon which the thesis rests for future studies that may be applied in diverse contexts and industries. In the meanwhile, the model is not only theoretical but practical, as well: it portrays eco-innovation as offering a dual benefit

of reducing environmental degradation while at the same time enhancing competitiveness, reputation and consumer trust. Sustainability is then presented as anything but an reflection; rather, it is a fundamental cornerstone of long-term business strategy.

The work stresses the importance of bridging the gap between abstract concepts in academia and the realities of consumer behavior. Too often, sustainability remains a topic of theoreticians, with concepts championed by them, while consumers choose pricing, convenience, or habit. Contributing to actual purchasing behavior in the presence of eco-innovations, so to speak, calls for the practical test of sustainability theories against the lived experiences of people in different markets. This view makes the study both relevant in theory and applicable practically.

Thus, the thesis's importance stems from trying to relate environmental responsibility with consumer dynamics. It suggests that eco-innovation should not be considered in isolation and merely as technical changes but rather part of a wider interfacing condition between companies and society. By setting eco-innovation between a business strategy and a consumer experience, the thesis tries to engender a more sustainable view of international business from all points of view.

The practical significance of the thesis

The practical importance of this master's thesis is the contribution to the understanding of the influence of the eco-innovation application in international companies on consumer decision-making processes. The findings of the research have a practical contribution for the international companies that want to implement the environmentally responsible strategies and strengthen their competitiveness in the international markets. The study emphasises the significance of sustainable packaging, eco-labels, environmental communication, green trust and perceived product quality in influencing consumer purchase behaviour and brand perception. The findings can help companies to develop more effective sustainability-oriented marketing and business strategies to increase consumer trust, purchase intention and long-term customer loyalty. In addition, the research helps to better understand sustainable consumer behaviour and may be useful for managers, policy makers and sustainability specialists

Structure and scope of the thesis

The scope of Master thesis includes introduction, 3 chapters, conclusion and recommendation. In total 80 pages, 4 figures, 14 tables, and 78 references.

1. THEORETICAL BACKGROUND: CONCEPT, APPLICATION OF ECO-INNOVATION IN INTERNATIONAL COMPANIES AND CONSUMER DECISIONS

The essence of this chapter is to understand what is eco-innovations and what different types of eco-innovations companies can adopt. The chapter will also link the companies and customers if eco-innovations terms are understood on the same level. At the end of the chapter the link will be developed between companies and customers if eco-innovation makes an impact on decision making.

1.1. Definition and types of eco-innovation

When talking about eco-innovation, the first and maybe the most obvious challenge is to agree on what the term really means. Different scholars and organisations use slightly different definitions, and sometimes it feels like the concept is still evolving. In simple terms, eco-innovation refers to innovations that result in a reduction of environmental impact. But this short phrase hides a lot of complexity that still needs to be studied and investigated among businesses and consumers. According to Kemp and Pearson (2007), eco-innovation can be defined as “the production, assimilation or exploitation of a product, production process, service, management or business method that is novel to the organisation and which results, throughout its life cycle, in a reduction of environmental risk, pollution or other negative impacts of resource use compared to relevant alternatives.” This definition is often cited, maybe because it connects the novelty aspect with the environmental performance dimension.

The Organisation for Economic Co-operation and Development (OECD, 2009) provides another perspective, stressing that eco-innovation is not only about new technologies but also about new organisational and institutional arrangements that reduce environmental risks and improve ecological efficiency. In fact, the OECD notes that eco-innovation can be “any form of innovation aiming at significant and demonstrable progress toward the goal of sustainable development, through reducing impacts on the environment, enhancing resilience to environmental pressures, or achieving a more efficient and responsible use of natural resources.” It is interesting that this formulation already anticipates climate change and resource scarcity as major global challenges.

Some researchers underline that eco-innovation is essentially a subset of innovation, but with an explicit environmental purpose. Rennings (2000) is widely called it “environmentally motivated innovation,” and he argued that it often generates what he described as a “double externality”: first, knowledge spillovers typical of all innovations, and second, positive environmental externalities that benefit society at a large. This idea is still central today, because it explains why eco-innovation may

require additional public support – companies might not invest enough on their own since they cannot capture all the benefits or return on investment.

At the same time, there are debates about whether eco-innovation should be understood only as technology-oriented solutions or also as changes in behaviour, organisation, and even lifestyles strategies. Carrillo-Hermosilla, del Río and Könnölä (2010) propose a systemic definition: eco-innovation is about new ideas, behaviours, products, processes and systems that contribute to a sustainable environment. It is strongly believed that this broader view more convincing, because in practice environmental change often depends not only on new machines but also on how people and organisations use them. For instance, a company can adopt the most energy-efficient equipment, but if employees are not trained to operate it properly, the environmental benefits may be limited or not valuable.

When it comes to the types of eco-innovation, literature usually distinguishes several categories. The most common classification is based on the object of innovation:

Product eco-innovation. This refers to the development of new goods and services that have a lower environmental impact during their life cycle. For example, designing more energy-efficient appliances, biodegradable packaging, or cars with reduced CO₂ emissions. As Hojnik and Ruzzier (2016) point out, product eco-innovation can create competitive advantages because it meets the growing consumer demand for green products, or the satisfaction to have an impact on reduction on CO₂ emissions. Similarly like Porter M. E (1991), hypothesis suggests that to sustain competitive advantage in international market companies must invest in sustainable development. However, the uncertainty of facts remain for such investments, since consumers do not always want to pay more for environmentally friendly features.

Process eco-innovation. This type focuses on changes in production methods and technologies that reduce resource use, emissions, or waste. For instance, implementing closed-loop water systems in manufacturing or switching to renewable energy sources in production facilities. According to Horbach (2008), process eco-innovations are often driven by regulatory pressure, because companies need to comply with environmental standards. On the other hand, they can also reduce costs in the long run by saving energy and materials.

Organisational eco-innovation. Not all innovations are about physical products or processes. Sometimes the key lies in changing management practices, organisational culture, or supply chain management. For example, adopting environmental management systems such as ISO 14001 or creating cross-functional teams to promote sustainability goals can be seen as organisational eco-innovations (OECD, 2009). These changes might not be visible to consumers directly, but they can influence the overall environmental performance of a company and build trust.

Marketing and service eco-innovation. Some authors, like de Medeiros, Ribeiro and Cortimiglia (2014), argue that innovation in marketing strategies and services also plays a crucial role. Offering new business models such as product-service systems, where customers pay for using a service instead of owning a product, can significantly reduce material consumption. One of the most popular example today car-sharing platforms or bike-sharing schemes. They are not technological breakthroughs in themselves, but they represent new ways of delivering value with lower environmental impact.

Systemic eco-innovation. This is perhaps the most ambitious and complex type. It involves changes that go beyond a single firm and require cooperation across industries, governments and consumers. An example would be the transition toward circular economy systems, where waste from one sector becomes an input for another. As Andersen (2008) explains, systemic eco-innovation requires coordination at multiple levels and often depends on institutional changes, new regulations and shifts in social norms.

In reality, these categories often overlap. A new product might require a new process and a new service model might only succeed if organisational structures adapt accordingly. The boundaries are not always clear and sometimes it feels that scholars themselves are not consistent. But maybe that is normal – innovation by definition is about breaking boundaries, so why should eco-innovation be different?

Another way to classify eco-innovations is by their degree of novelty. Some are incremental, meaning small improvements in existing products or processes, like reducing the thickness of plastic bottles to save material. Others are more radical, such as the development of electric vehicles that fundamentally change how transportation is organised (Bocken et al., 2014). There are also disruptive eco-innovations, which not only replace existing products but also create entirely new markets. For example, renewable energy technologies like solar photovoltaics have disrupted traditional energy systems.

Moreover, there is a temporal dimension. Eco-innovations can be preventive, aiming to avoid environmental damage before it happens, or they can be end-of-pipe solutions that deal with pollution after it has occurred. The former are generally considered more sustainable, but they may require higher initial investment and changes in consumer habits. For instance, switching to plant-based diets could be seen as a preventive eco-innovation in the food industry, whereas carbon capture technologies are more of an end-of-pipe approach.

It is also important to highlight that eco-innovation is not only a matter for manufacturing industries. The service sector, which in many economies now dominates GDP, also provides numerous opportunities. For example, digitalisation and e-commerce can reduce the need for physical

stores and thus decrease energy consumption, although they also create new challenges such as packaging waste and extra delivery costs (Boons & Lüdeke-Freund, 2013). In tourism, eco-innovation might involve developing sustainable travel packages, eco-friendly accommodations, or virtual tourism experiences.

Eco-innovation must be understood in the international context. Companies operating across different countries face diverse environmental regulations, consumer expectations and infrastructural conditions. What counts as an eco-innovation in Europe may not be perceived the same way in Asia or Africa. For instance, introducing solar home systems in rural Africa is a radical eco-innovation that directly improves quality of life, while in developed countries solar panels are already part of mainstream energy policy. As Andersen (2008) and Carrillo-Hermosilla et al. (2010) remind us, eco-innovation is highly context-dependent, and its types and impacts may vary significantly across regions.

In conclusion, the definition of eco-innovation is multifaceted as we can see in Table 1, and the types are diverse. From product and process improvements to organisational, marketing, and systemic changes, eco-innovation can take many forms. Some definitions are narrower, focusing on technology, while others are broader, including social and institutional innovations. The evidence indicates that it is useful to keep this openness, because environmental challenges are complex and cannot be solved with a single type of innovation. It might be a little messy, but perhaps this messiness reflects reality better than a rigid categorization.

Table 1

Types of Eco-Innovation According to Different Authors

Author / Source	Main Types of Eco-Innovation
Rennings (2000)	Product innovation; Process innovation; Organizational innovation; Marketing innovation
Kemp & Pearson (2007)	Product; Process; Organizational methods; Business models
Horbach (2008)	End-of-pipe technologies; Cleaner production; Eco-products
Andersen (2008)	Component innovations; System innovations; Radical vs. incremental eco-innovations
Carrillo-Hermosilla, del Río & Könnölä (2010)	Product; Process; Organizational; Institutional; Systemic innovations
de Medeiros, Ribeiro & Cortimiglia (2014)	Product; Process; Marketing; Organizational; System-level changes
Bocken, Short, Rana & Evans (2014)	Technological eco-innovations; Social eco-innovations; Business model innovations

Source: Compiled by the author based on Rennings (2000), Kemp and Pearson (2007), Horbach (2008), Andersen (2008), Carrillo-Hermosilla, del Río, and Könnölä (2010), de Medeiros, Ribeiro, and Cortimiglia (2014), and Bocken, Short, Rana, and Evans (2014).

In the given table 1 it is evident that eco-innovations have many forms, tangible and intangible, appearing in many forms, such as sustainable packaging, recyclable materials, energy-

efficient technologies, environmental communication, eco-labels, green branding and sustainability-oriented business strategies.

1.2. Challenges and opportunities in implementing eco-innovations in international companies

Talking about eco-innovation in theory often feels inspiring, but when it comes to practice, the story becomes more complicated. International companies face a range of challenges when they try to implement green innovations, and at the same time there are also clear opportunities that can strengthen competitiveness. This presents a paradox, as eco-innovation creates both challenges and opportunities for international companies.

One of the most discussed challenges is the cost factor. Developing eco-innovations are often requires enormous investment. Research and development (R&D) activities, new equipment, training employees – all these require financial resources. According to Horbach, Rammer and Rennings (2012), environmental innovations are frequently more costly at the beginning than conventional innovations, because firms must invest in both technology and compliance with stricter regulations. Corporations complain that payback periods are uncertain, as a result, they hesitate to invest. In a way, this is ironic: eco-innovation is supposed to bring efficiency, but the initial stage often looks like a burden. Comparing different sectors, as presented in table 2, the return on investment varies between sector, for instance according to OECD (2025) renewable energy sector considered as highest investment return, following by food manufacturing companies who gain increased consumer trust (Willett, W., Rockström, J., Loken, B., et al. 2019).

Table 2

Sectors with highest return on eco-innovations

Sector	Main Eco-Innovation Activities	Main Benefits
Renewable energy	Solar, wind, clean energy technologies	High investment growth
Food industry	Sustainable packaging, waste reduction	Increased consumer trust
Manufacturing	Energy efficiency, recycling	Higher productivity
Circular economy	Reuse and resource efficiency	Long-term economic value

Source: Created by the author based on OECD (2024), McKinsey (2025), and Ellen MacArthur Foundation (2021).

Another challenge is regulatory complexity. International firms operate in multiple countries, and each has its own environmental laws and standards. What is acceptable in one region may be

illegal in another, due to political, economical or religious beliefs. For example, European Union regulations on carbon emissions and waste management are generally stricter than in some developing countries. As OECD (2019) points out, this regulatory diversity creates additional costs and confusion for multinational corporations. In some cases it might even discourage companies from introducing eco-innovations globally, because they need to adapt them to different local contexts.

Cultural and consumer differences also play a role. For instance, in Scandinavia consumers are often very environmentally conscious, so companies that offer eco-friendly products can build strong reputations and market share (Thøgersen & Zhou, 2012). However, in other regions, like parts of Asia or Latin America, price sensitivity may outweigh environmental concerns. This makes it difficult for companies to decide whether to standardise their eco-innovations or adapt them locally. Without consideration, this is one of the trickiest issues, because it is not just about technology but about values and perceptions, which are harder to measure. Still, there are also opportunities that motivate companies. One major opportunity is cost savings in the long term. Although initial investments are high, eco-innovations can reduce energy and material consumption, leading to lower operational costs. For example, switching to renewable energy sources may require capital, but in the long run it can reduce dependence on fossil fuels and energy price volatility (Porter & van der Linde, 1995). Many companies have already reported that energy efficiency measures pay for themselves within a few years.

Another opportunity is market differentiation. As Peattie and Crane (2005) note, eco-innovation can become a powerful tool for creating competitive advantage, because it allows firms to position themselves as sustainable and responsible. Consumers are increasingly attentive to the environmental impact of their purchases, even if, as mentioned earlier, their actual behaviour does not always match their attitudes (Auger & Devinney, 2007). Nevertheless, offering greener products can attract a niche segment willing to pay a premium, which in turn can strengthen brand loyalty. There is also an opportunity related to legitimacy and reputation. International companies are under constant public scrutiny. NGOs, media and even investors are watching closely how firms behave in relation to the environment matters. As Dangelico and Pujari (2010) suggest, eco-innovation can improve a company's image and reduce the risk of reputational damage. In times when corporate scandals quickly spread globally through social media, being seen as an innovator in sustainability can provide a kind of insurance against public criticism and negative image.

Furthermore, eco-innovation opens opportunities for collaboration and new network opportunities. Many environmental challenges, like climate change or plastic waste, cannot be solved by one entity alone. They require cooperation across supply chains, governments, universities, research institutes and even competitors. Carrillo-Hermosilla et al. (2010) emphasise that eco-

innovation often takes a systemic form, which involves multiple actors. For international companies, this can be an opportunity to build partnerships, gain access to new knowledge and strengthen their global presence.

At the same time, some scholars note that eco-innovation can drive technological leadership. Firms that adopt new green technologies earlier may set industry standards and benefit from first-mover advantages. Bocken et al. (2014) discuss how pioneers in sustainable business models, like Tesla in electric vehicles production, have not only captured new markets but also forced incumbents to follow. This shows that eco-innovation can be a way to influence entire industries, which is a huge strategic opportunity. Of course, not all opportunities are guaranteed. Sometimes eco-innovations fail because of lack of consumer acceptance. There are many cases where green products did not sell as expected, either because consumers did not trust environmental claims or because they considered the products inconvenient (Rex & Baumann, 2007). Greenwashing scandals have made consumers more sceptical, and this is a challenge that firms must address with transparency and credibility.

Another difficulty is organisational resistance. Employees and managers might be used to existing routines and may not welcome changes that eco-innovation demands. According to Hojnik and Ruzzier (2016), organisational culture is a critical barrier – without leadership commitment and employee involvement, eco-innovations are less likely to succeed. It is strongly believe this is very true, because even the best technological solution will not work if people inside the company are not motivated to use it properly. In summary, implementing eco-innovation in international companies is not a straightforward process. There are significant challenges, such as high costs, regulatory complexity, consumer inconsistency and organisational resistance. However, there are also strong opportunities in long run: long-term cost savings, differentiation, reputational gains and leadership in new markets. It is for sure a paradox – eco-innovation is both a risk and an opportunity. Maybe that is why it attracts so much attention from both academics and practitioners. It is not only about saving the planet, but also about reshaping the way companies compete and survive in the global economy.

Table 3

The challenges of eco-innovation in international companies are often mirrored by parallel opportunities, which suggests that strategic approaches can turn barriers into sources of competitive advantage.

Challenges	Opportunities
High initial costs of R&D, new technologies, staff training (Horbach, Rammer & Rennings, 2012)	Long-term cost savings through energy efficiency and resource optimisation (Porter & van der Linde, 1995; García-Granero et al., 2021)
Regulatory complexity across different countries; diverse standards and compliance burdens (OECD, 2019)	Competitive advantage in stricter regulatory environments; shaping global industry norms (Bocken et al., 2014; Juracka, 2024)

Challenges	Opportunities
Consumer price sensitivity; unwillingness to pay a “green premium” (Auger & Devinney, 2007)	Market differentiation and access to environmentally conscious segments (Peattie & Crane, 2005; Sharma, Paço & Kautish, 2023)
Risk of consumer scepticism due to greenwashing (Delmas & Burbano, 2011)	Stronger brand reputation and consumer trust through credible eco-labelling and ESG disclosure (Dangelico, Pujari & Pontrandolfo, 2022; Sneiderienė, 2025)
Organisational resistance, lack of capabilities, path dependency (Hojnik & Ruzzier, 2016)	Internal culture change, employee engagement, and digital transformation for sustainability (Centobelli, Cerchione & Singh, 2020)
Cultural and market differences in consumer expectations (Thøgersen & Zhou, 2012)	Localisation of eco-innovation strategies and co-creation with stakeholders (Zhang & Dong, 2020; Goyal, Esposito & Kapoor, 2022)

Source: Compiled by the author based on Porter and van der Linde (1995), Peattie and Crane (2005), Auger and Devinney (2007), Delmas and Burbano (2011), Thøgersen and Zhou (2012), Horbach, Rammer, and Rennings (2012), Bocken et al. (2014), Hojnik and Ruzzier (2016), OECD (2019), Centobelli, Cerchione, and Singh (2020), Zhang and Dong (2020), García-Granero et al. (2021), Dangelico, Pujari, and Pontrandolfo (2022), Goyal, Esposito, and Kapoor (2022), Sharma, Paço, and Kautish (2023), Juracka (2024), and Sneiderienė (2025)

1.3. Consumer behaviour and the impact of environmental innovations on consumer choices

Understanding consumer behaviour is always complicated. People do not act like robots, they do not always make decisions in a perfectly rational way and sometimes they even contradict themselves. When it comes to eco-innovation, this becomes even more visible. On the one hand, many consumers declare that they care about the environment and want greener products, but on the other hand their purchasing decisions often do not fully reflect these values. This gap is sometimes called the attitude–behaviour gap or simply the green gap (Young et al., 2010). This is strongly visible that most of us have experienced it personally: we say we want to live sustainably, but then we still choose cheaper plastic bags or fast fashion items.

Consumer behaviour theories relevant to eco-innovation

There are several theoretical models that scholars use to explain why consumers make certain choices. One of the most influential is the Theory of Planned Behaviour (TPB) by Ajzen (1991). It suggests that behaviour is predicted by behavioural intention, which in turn depends on attitudes toward the behaviour, subjective norms, and perceived behavioural control. In the eco-innovation context, this means that a consumer will be more likely to buy an environmentally friendly product if they have a positive attitude toward sustainability, if they think that people around them expect them to buy green, and if they feel that they can actually afford and manage it. However, some researchers argue that even when all three conditions are present, actual behaviour might not follow intention, because habits and situational factors intervene (Kollmuss & Agyeman, 2002).

Another important framework is the Engel–Kollat–Blackwell (EKB) consumer decision model, which describes the decision-making process in five stages: problem recognition, information search, evaluation of alternatives, purchase decision, and post-purchase behaviour (Blackwell, Miniard & Engel, 2006). Eco-innovation can influence almost every stage. For example, eco-labels and certifications affect the information search and evaluation phases, while experiences with green products affect post-purchase satisfaction and repeat purchase.

Marketing scholars like Kotler and Keller (2016) also highlight the importance of consumer values and motivations. For some consumers, buying eco-innovative products satisfies not only functional needs but also symbolic needs, such as signaling identity or social status. This is why we see the rise of “green consumer segments” in developed markets. But, again, the reality is more nuanced – not all consumers are willing to pay the “green premium.”

Factors influencing consumer choices in relation to eco-innovation

The literature identifies multiple factors that shape how consumers respond to eco-innovations. The decision making process for consumers who select eco-innovative products depends on multiple environmental factors, psychological factors, social factors and economic factors. The main factor which affects consumer product selection is their understanding of environmental issues because customers show more interest in items and brands which prove their dedication to sustainable practices and environmental protection efforts. According to Biswas and Roy (2015), environmentally conscious consumers are more likely to support eco-friendly products and sustainable business practices. The process through which consumers select products depends on their green trust because they choose to buy from companies which they believe have authentic environmental protection practices. Green trust creates a positive impact on purchase intention according to Chen (2010) because it helps consumers develop loyalty toward sustainable brands. Eco-labels and sustainability certifications together with clear environmental communication systems enable consumers to find eco-friendly products while these systems create better product quality and corporate responsibility perceptions according to Grunert et al. (2014).

Price and affordability. This is probably the most straightforward factor. Many eco-friendly products are more expensive than conventional alternatives, and this can discourage price-sensitive consumers. As Laroche, Bergeron and Barbaro-Forleo (2001) observed, consumers with higher income and education levels are more likely to buy green products, while others may prioritise price. However, a more recent study by Biswas and Roy (2015) reflects that consumers willing to pay extra for eco-innovation items assuming better quality and ethnical production processes.

Perceived quality and performance. Some consumers worry that eco-products might be of lower quality. For example, early eco-friendly detergents were criticised for being less effective. As Peattie and Crane (2005) noted, this kind of perception can reduce trust and slow adoption.

The international food and consumer goods industries show additional examples which demonstrate their global market. Nestlé developed recyclable packaging solutions which use paper materials to package its confectionery and beverage products while preserving their quality and freshness. Danone markets organic dairy and plant-based products through its Alpro brand which delivers sustainable solutions and nutritional advantages. Lush offers the cosmetics industry solid shampoo bars and packaging-free products as sustainable alternatives which maintain product effectiveness and consumer experience. The research shows that eco-innovation leads to consumer product choices when customers view sustainable products as equal or better than standard products which existed before (Magnier & Schoormans, 2015; Aschemann-Witzel et al., 2019).

Trust and credibility. Greenwashing scandals have made consumers sceptical. If companies exaggerate their environmental claims, it damages trust. According to Delmas and Burbano (2011), consumers who suspect greenwashing are less likely to purchase green products, even if the products are genuinely better. The biggest concern is that the reputation damaged by one company might affect the whole market. Namely, The Dieselgate scandal when car maker Volkswagen manipulated emission recording and promoted their vehicles environmentally friendly and low emission (United States Environmental Protection Agency, 2015).

Eco-labels and certifications. Labels such as the EU Ecolabel, Energy Star, or Fairtrade can reduce information asymmetry and increase consumer confidence. However, some studies show that the sheer number of labels can confuse consumers, leading to what Thøgersen (2000) called “label fatigue.” So, eco-labels are helpful, but only if they are trusted and not too fragmented.

Social influence and cultural context. People are influenced by their peers and cultural norms. In collectivist societies, social approval plays a larger role in green purchasing (Zhang & Dong, 2020). In contrast, in more individualistic societies, personal values may matter more. This means that international companies cannot simply transfer eco-innovation strategies from one country to another without adaptation.

Awareness and knowledge. Awareness of environmental problems is necessary but not sufficient condition. As Leonidou et al. (2010) note, knowledge about environmental impacts can encourage greener choices, but without practical alternatives and clear information, awareness alone does not lead to action.

The impact of eco-innovation on consumer decision-making

Eco-innovation can influence consumers in multiple ways. First, it can change the criteria consumers use when evaluating products. Traditionally, consumers looked at price, quality, and brand. With eco-innovation, environmental attributes become part of the evaluation set. For example, when buying a car, people now consider not only engine power but also CO₂ emissions and fuel efficiency (Rezai et al., 2013).

Second, eco-innovation can increase consumer satisfaction and loyalty. If consumers believe that buying a green product makes them part of a positive change, they may feel more satisfied with their choice, even if the product is slightly more expensive. According to Ottman (2011), green products often provide consumers with a sense of “moral satisfaction,” which is a unique source of value.

Third, eco-innovation can also trigger new consumption patterns. For example, the rise of sharing economy platforms such as car-sharing or bike-sharing has changed how people think about ownership. These models are often considered eco-innovations because they reduce the need for producing more physical goods. Belk (2014) called this phenomenon “sharing economy” and argued that it reshapes consumer behaviour by emphasising access over ownership.

On the other hand, eco-innovation can also create consumer confusion or resistance. Sometimes products marketed as eco-friendly are difficult to understand or use. For instance, biodegradable packaging may require specific disposal methods that consumers are not familiar with. As a result, the environmental benefits are not fully realised. This is another area where education and communication play a huge role, but companies sometimes underestimate it.

International dimension

For international companies, consumer responses to eco-innovation are not uniform. As mentioned earlier, cultural and economic contexts matter a lot. For example, research in China has shown that consumers are increasingly willing to pay for eco-friendly products, but their motivations are often linked to health and safety rather than abstract environmental concerns (Zhang & Dong, 2020). In contrast, in Northern Europe, motivations are often connected to ethical values and global responsibility (Thøgersen & Ölander, 2002).

This means that the same eco-innovation can be perceived differently in different markets. An electric car might be bought in Germany because of environmental concern, in the United States because of technological appeal and in India because of government subsidies. International firms must therefore carefully study consumer behaviour in each market and design strategies accordingly.

Towards a theoretical model

At the end of this theoretical part, it is important to bring together the insights from eco-innovation literature and consumer behaviour theories. The idea is to develop a conceptual model that links the application of eco-innovations in international companies with consumer decision-making.

The model can be described in words (later we will illustrate it in Figure 1):

On the left side, there are drivers of eco-innovation in companies: regulatory pressure, cost-saving opportunities, competitive advantage, reputational concerns, and technological development.

These drivers lead to the application of eco-innovation in international companies: new eco-products, eco-processes, organisational changes, marketing innovations, and systemic solutions.

The application of eco-innovation influences consumer perception through signals such as eco-labels, product performance, price and corporate communication.

Consumer perception shapes attitudes (positive or negative toward green products), which interact with subjective norms and perceived behavioural control (from Ajzen's TPB).

These factors lead to purchase intention, and finally to consumer behaviour (actual buying, usage, post-purchase evaluation).

The model also recognises moderating factors, such as cultural context, income level, and trust, which can strengthen or weaken the link between eco-innovation and consumer choices.

So, in essence, the model suggests a chain: Corporate eco-innovation → Consumer perception → Attitudes/Norms/Control → Purchase intention → Consumer behaviour. And around this chain, there are external influences (culture, regulation, trust). It might not be a perfect model, but it captures the main idea of how eco-innovations in international companies can eventually shape consumer decisions.

Table 4

Summarises the main factors shaping consumer decisions regarding eco-innovations, showing how economic, psychological, social and technological aspects interact in complex ways.

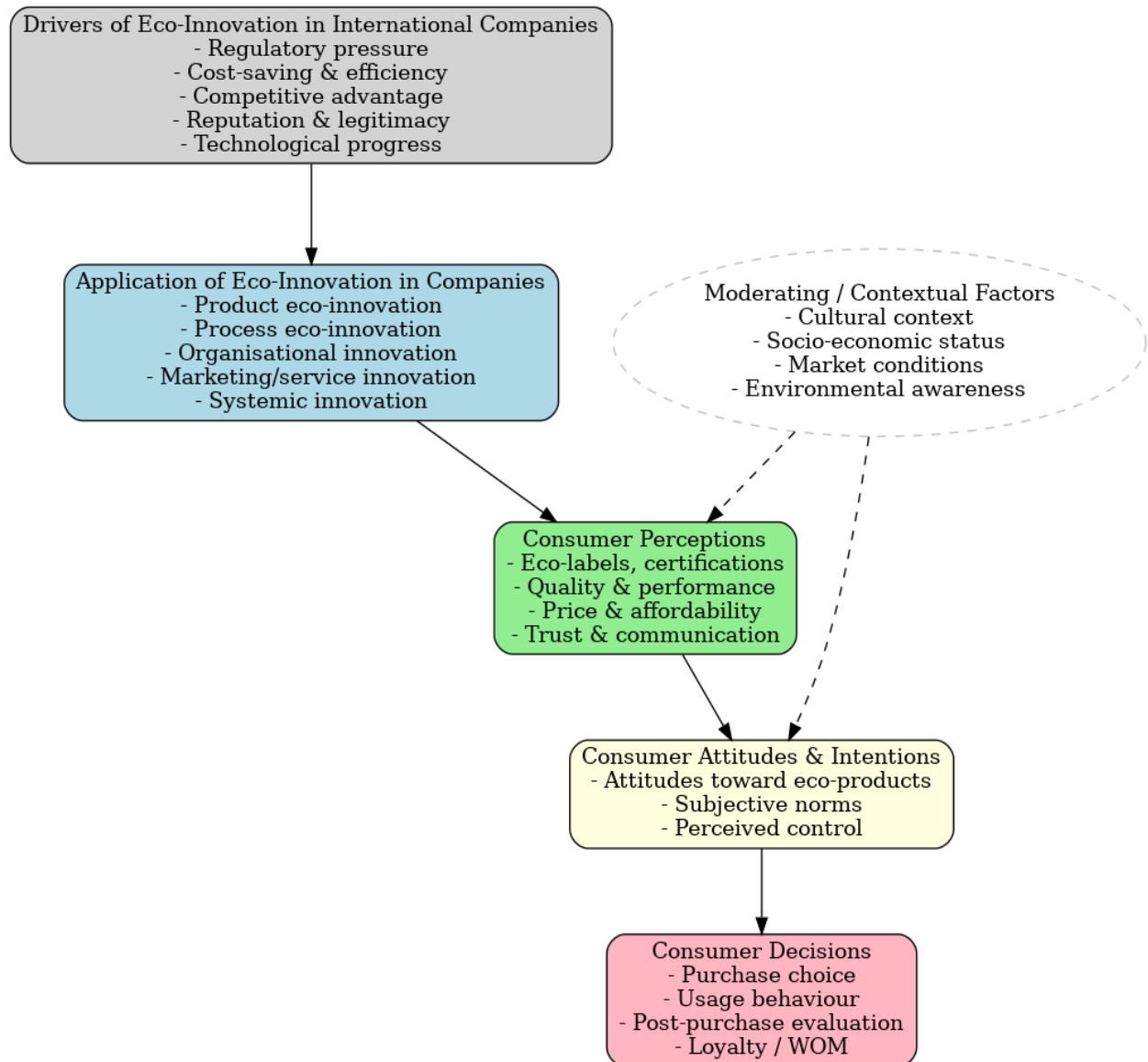
Factor/ Dimension	Influence on Consumer Decisions	Authors / Sources
Price and affordability	Higher prices often discourage green purchases; higher income and education increase willingness to pay.	Laroche, Bergeron & Barbaro-Forleo (2001); Sharma, Paço & Kautish (2023)
Perceived quality and performance	Concerns about functionality and effectiveness may reduce adoption of eco-products.	Peattie & Crane (2005); Bartoszczuk (2023)
Attitudes and behavioural intentions (TPB)	Positive attitudes, norms, and perceived control influence intention to buy green products.	Ajzen (1991); Kollmuss & Agyeman (2002); Pfiffelmann (2025)
Trust and credibility (greenwashing issue)	Greenwashing scandals lower consumer trust; credible ESG and eco-labels enhance acceptance.	Delmas & Burbano (2011); Sneiderienė (2025); Sanchez Chaparro et al. (2024)

Factor/ Dimension	Influence on Consumer Decisions	Authors / Sources
Eco-labels and certifications	Labels reduce information asymmetry but can cause label fatigue if too many exist.	Thøgersen (2000); Tiboni-Oschilewski (2024); Yang (2024)
Social influence and cultural context	Peer pressure, societal values, and cultural differences shape green purchase behaviour.	Thøgersen & Ölander (2002); Thøgersen & Zhou (2012); Goyal, Esposito & Kapoor (2022)
Health and safety motivations	In emerging markets, eco-choices are often driven by personal well-being and health concerns.	Zhang & Dong (2020); Mansilla-Obando (2023)
Digitalisation and information access	Online reviews, social media, and digital platforms increase awareness and transparency about eco-innovations.	Wang, Cao & Cai (2024); Cui (2025)
Symbolic identity value	Green products are consumed as identity signals or status markers.	Belk (2014); Ottman (2011)

Source: Compiled by the author based on Ajzen (1991), Thøgersen (2000), Laroche, Bergeron, and Barbaro-Forleo (2001), Kollmuss and Agyeman (2002), Thøgersen and Ölander (2002), Peattie and Crane (2005), Ottman (2011), Delmas and Burbano (2011), Thøgersen and Zhou (2012), Belk (2014), Zhang and Dong (2020), Goyal, Esposito, and Kapoor (2022), Mansilla-Obando (2023), Bartoszczuk (2023), Sanchez Chaparro et al. (2024), Tiboni-Oschilewski (2024), Wang, Cao, and Cai (2024), Yang (2024), Cui (2025), Pfiffelmann (2025), Sharma, Paço, and Kautish (2023), and Sneiderienė (2025).

The table 4 summarizes the main factors influencing consumers' decisions towards eco-innovative products. It proves that the consumer purchasing behaviour is determined by a mixture of economic, psychological, social and informational dimensions. The literature review indicates that price and affordability, perceived product quality, trust, eco-labels, social influence, health concerns and accessibility of digital information have a significant impact on consumers willingness to buy environmentally friendly products. Moreover, the studies shows that eco-innovation impacts on consumer behaviour not only through the functional environmental benefits, but also through symbolic values, personal attitudes and perceptions of corporate credibility. There are evidences that the consumer response to eco-innovation may be different depending on their cultural context, individual values and the level of environmental awareness.

The factors in the table are directly related to the theoretical model of the research that explains the association of eco-innovation application and consumer decision making processes. According to the theoretical framework as shown in Figure 1, the eco-innovation practices undertaken by multinational companies affect consumer perceptions, trust, attitudes, and purchase intention, which in turn affect the final decision of the consumer. In the theoretical model important mediator variables are green trust, sustainability communication, eco-labels, perceived quality and environmental awareness. Consequently, the table validates the assumption that the effectiveness of eco-innovation is dependent not only on the implementation of sustainable practices, but also on their perception, understanding and evaluation by consumers in the context of international markets.



Source: Created by author
Figure 1. Theoretical model of the relationship between eco-innovation in international companies and consumer decision-making

The theoretical model of the study is developed on the basis of the analysis of previous scientific literature related to eco-innovation, sustainable consumer behaviour, and consumer decision-making in international markets. The model describes the theoretical connection between the implementation of eco-innovation in international companies and the impact on the purchasing decision of consumers. The review of the literature suggests that eco-innovation practices, including sustainable packaging, eco-labels, environmental communication, green branding, and

environmentally responsible production approaches, can have a positive influence on consumer attitude, trust, purchase intention, and overall perception of companies and products. The model also accounts for other variables that have been identified as significant in prior empirical studies such as price and affordability, perceived quality, social influence, environmental awareness, health motivations, and trust in sustainability claims that may either reinforce or detract from the effect of eco-innovation on consumer behavior.

2. ANALYTICAL DEVELOPMENT OF A RESEARCH MODEL ON THE INFLUENCE OF ECO-INNOVATION ON CONSUMER DECISIONS

The analytical part of the research analyses extended information and investigates the link of how decisions of buyers is made. The hypothesis and research model will be drawn at the end of the chapter.

2.1. Summary of research on the influence of the application of eco-innovation in international companies on consumer decisions

Early academic work on eco-innovation was mostly centered on technological advancements and regulatory infrastructure. But going by growing empirical substantiation, the market-end implications of eco-innovation, above all, its impacts on consumer decision-making, are presently being pursued due to the understanding that an environmentally and economically meaningful outcome for eco-innovations initiated by corporations is only possible if consumers approve of and encourage them. Thus, the very question of how eco-innovation affects consumer attitudes, intentions and behavior has become the focus of scholarly attention.

There is hard evidence that confirms such empirical certified studies, so as to identify the relationship between eco-innovation, consumer preferences and behaviour. We have seen authors engage in a series of major questions. Considering all these studies, theoretical frameworks, methodologies and expenditures may have been changed, individual studies may have emanated from varied locations, some seriously study whether consumers may give consent on eco-innovative products-for rather high chances and greatest relevant discussions-while other beneficiaries treasure consumer trust, perceived value and behavioural intention; very new surprises are keen upon the integration of psychological, cultural, and institutional impouters. Nevertheless, the core of the ejusdem generic discourse suggests combinations that give insights into international business phenomena and their enigmatic effects in support of consumer buying decisions.

The Table 5 represent a structured presentation to selected empirical studies. These studies have analyzed influence of eco-innovation on consumer choices. In the main, those studies represent the core focus of research, are characterized by sound methodology and make specific and vivid contributions towards an understanding of consumer responses toward environmentally oriented innovations. Table 5 indicates the research aims and key findings of each study, to be built upon in the subsequent analytic synthesis.

Summary of empirical research on the influence of eco-innovation application on consumer decisions

Authors / Year	Aim of research	Research findings
Laroche, Bergeron & Barbaro-Forleo (2001)	To identify what consumer characteristics predict willingness to pay more for environmentally friendly products.	The research provided evidence that the profiles of consumers in socio-demographics and psychographics really do matter in green purchasing. Bearers of a "green premium" significantly lie among the more educated and affluent, among those higher in environmental concern and carrying more responsibility towards the earth. A variety of psychological factors collectively influence pro-environmental buying intentions, rather than any single factor; perceptions of financial means and the importance of environmental issues also strongly encourage eco-innovations. As a result, the influence of eco-innovations in these segments depends largely on the consumer's motivation and ability to purchase.
Auger & Devinney (2007)	To test whether consumers' stated ethical intentions align with their actual purchase decisions when trade-offs (e.g., price) exist.	Through experimental as well as survey-based work, authors provide evidence of a wide gap between attitude and behavior. Very often, consumers say they want goods and services that are ethical or environmentally responsible, yet when they see the reality of trade-offs in experience (a higher price and inconvenience are common ones), they quickly turn to conventional choice criteria. It suggests that eco-innovation will only be a feature in consumer decision making when the benefits to the environment could be made in some form of money for the consumer, typically bound in operational features, safety, savings, or status—when it becomes an inexpensive option with regard to the "cost of staying green." This supports the argument that eco-innovation alone is never enough; instead, it should be built with value communication and pricing strategies to convert positive attitudes into purchases.
Rex Baumann (2007)	To examine how eco-labels function as decision aids and whether they help consumers choose greener products.	The research indicates that eco-labels can have an information-asymmetry reduction effect, with the belief that effectiveness is partially conditional upon credence, clarity, and consumer comprehension. When properly perceived by the consumers, labels could facilitate decision-making if perceived as indicators of trustworthiness and simple means of translating intricate statements concerning the environment. Make labels seem strange, inconsistent, or misrepresenting the actual situation: consumers faced with confusion and skepticism would cease to easily contemplate purchase actions. That indicates and means that eco-innovations are more likely to inform consumer decisions when firms incorporate a more reliable third-party regulation while not wasting consumer brain capacity on uncertain environmental claims, thereby empowering the intelligence to scale and prioritize extended possibilities within the product offering.
Chen (2010)	To examine the relationship between green brand image, green trust and consumer purchasing intentions	The research established that green brand image together with environmental responsibility enhances consumer trust and satisfaction, which leads to increased purchasing behavior. Consumers are more likely to support companies perceived as environmentally responsible and transparent in their sustainability practices.
Delmas & Burbano (2011)	To explain the drivers of greenwashing and its consequences for consumer trust and market outcomes.	According to the study, greenwashing creates reputational risks and can reduce the credibility of environmental claims, hence, diminishing the effect of genuine eco-innovations on changes in consumer behaviour. When consumers perceive an inconsistency between claims and actual implementation with regard to sustainability, their responses lean towards skepticism, lower trust, and decrease in their purchase intention. The study insinuates that eco-innovation can change consumer decisions only under the proviso that firms implant credible signifying mechanisms (e.g. transparent reporting, verifiable certifications,

Authors / Year	Aim of research	Research findings
		consistent messaging). This is particularly significant in an international context because reputational damage can circulate and mount up through markets in a jiff.
Dangelico & Pujari (2010)	To explore how green product innovation affects market performance and consumer-related outcomes.	The findings show that incorporating environmental considerations into the design and physical functionality of products boosts competitive advantage, especially in terms of usability and dependability for consumers. On the other hand, the study highlights that consumers respond positively to environmental innovations that deliver functional value in conjunction with environmental value. Marketing communication has an impact on whether or not consumers perceive eco-innovation as a realistic or a mere symbolic gesture. It seems therefore that eco-innovation, with the “dual value proposition”—environment improving product performance, as its perceived prime function, appeals to a cognition band that is instrumental in brand differentiation and preference.
Thøgersen & Zhou (2012)	To analyse consumer adoption of a green innovation and test how cultural context influences acceptance.	The study validates the assertion that consumer acceptance of eco-innovations is a function as much of cultural-social constructs and norms as of individual attitudes. In an environment marked by more sustainability-supporting social norms, the propensity of consumers to adopt green innovations grows. The underlying research suggests that a single eco-innovation might attract a variety of responses from consumers that largely depend upon their cultural and collective expectations and the stage of maturity of the basic market. The implication of this insight for international corporations is to anticipate that the influence of eco-innovation on consumer decision-making would be neither universal nor consistent from one country to another.
Rezai et al. (2013)	To assess willingness to pay for green products and identify motivations behind green purchasing in an emerging market.	The findings in the past had realized that rationale for backing green products may go beyond environmental concern. More than often, it was of health and safety benefits that were found to encouraging purchase intentions better than abstract ecological values. The study argued that eco-movement might steer consumer selectivity in developing markets (if key sustainability actors related to personal benefits-in health and safety, product safety, and possibly family welfare-rather than just environmental responsibility). For international companies this would matter: to be most effective, eco-innovation messaging perhaps has to have market-specific motivational framing.
Grunert, Hieke & Wills (2014)	To analyze the influence of sustainability labels on consumer behavior in the food industry	The finding from 4408 respondents accors UK, France, Ger- many, Spain, Sweden, and Poland. The study found that consumers show sustainability and environmental concern through their behavior, althrought this behavior does not result in actual purchases. The research showed that consumers understood sustainability as a general concept but they recognized specific eco-labels including Fair Trade, Rainforest Alliance, Carbon Footprint, and Animal Welfare labels. The study showed that sustainability labels had weak effects on food buying choices because most consumers did not use or comprehend the product packaging information. The study found that people used sustainability labels because their demographic traits and personal beliefs and their level of environmental understanding and their level of motivation proved to be critical elements that determined label usage. The study showed that eco-labels and certifications create positive effects on consumer trust and perception but their actual success depends on how well consumers understand products and how transparent products are and how much consumers will let sustainability factors affect their buying choices.
Hojnik & Ruzzier (2016)	To synthesise evidence on what drives eco-innovation and how	The evidence examined indicates that the spread of eco-innovations heavily relies on market demand, highlighting the importance of consumer interest and pressure as key factors for successful adoption.

Authors / Year	Aim of research	Research findings
	it connects to firm and market outcomes (including consumer demand).	The work emphasises that firms are more likely to implement an eco-innovation when they expect a favourable market response, while such a response will depend on trust, willingness to pay, and perceived product value. From the consumer decision point of view, eco-innovation can be seen as operating within a feedback loop: firms innovate → consumers respond → firms intensify or alter eco-innovation strategies because of market acceptance.
Sharma, Paço & Kautish (2023)	To test psychological mechanisms through which sustainability-related product features influence purchase intention.	Using a quantitative model, the study established that eco-innovations directly influence purchase intention. However, strong mediators exist for the relationship between consumer attitudes, perceived consumer effectiveness, and trust-related variables (rather than perceived-quality or eco-innovations). This indicates that consumers may prefer environmentally innovative products when they believe their purchase truly makes a difference and when statements made by the company relating to the eco-innovation are credible. This supports a mediated relationship structure: eco-innovation → consumer beliefs/perceptions → intention → decision. This advances the methodological foundation to further examine mediators on the target research model.
Sanchez Chaparro et al. (2024)	To examine how sustainability/ESG transparency and communication affect consumer responses to environmentally oriented company actions.	Sustainable communication in the transparent sector is key to consumer trust-building and enhanced effectiveness of eco-innovation as a market signal. When the perception is that the reporting process is clear, consistent, and verifiable, eco-innovation measures become more likely to result in higher attractiveness to buy and a positive brand appraisal. Differently, lacking in transparency generates more uncertainty and more scepticism, weakening consumer response. In essence, quality communication, as far as enhanced linkage between eco-innovation and consumer decision and behaviour, assumes strategic capital.
Duarte, P., e Silva, S. C., & Ferreira, M. B. (2024)	To investigate how sustainable packaging influences consumer purchasing behavior	The study provided empirical evidence that sustainable packaging significantly influences consumer purchase intentions toward eco-friendly products. The research gathered survey based empirical analysis to determine that perceived value and willingness to pay together with environmental concern and attitudes toward sustainable packaging, all produced statistically significant positive impacts on consumer purchasing intentions. The study particularly emphasized that willingness to pay emerged as one of the strongest determinants influencing purchase intention. The research established a strong positive connection between packaging functionality and purchase intention ($r = 0.609$, $p < 0.001$) which showed that consumers preferred to buy products with sustainable packaging when the packaging met their standards for quality, usability and product protection. The findings also showed that environmentally concerned consumers were more willing to pay premium prices for products with recyclable or biodegradable packaging because they associated sustainable packaging with premium quality, ethical responsibility and positive environmental impact. The results demonstrate that eco-innovation applications including sustainable packaging, which serve as sustainable packaging solutions for business operations, establish a positive impact on consumer decision-making processes and their development of trust and subsequent purchasing choices in international markets.

Source: Compiled by author

Main topic of the several studies suggests is that the relation between eco-innovation and consumer decision-making is contingent in nature. Despite the unanimous agreement that eco-innovation can enhance consumers' attitudes and consequently, their purchasing intentions, the

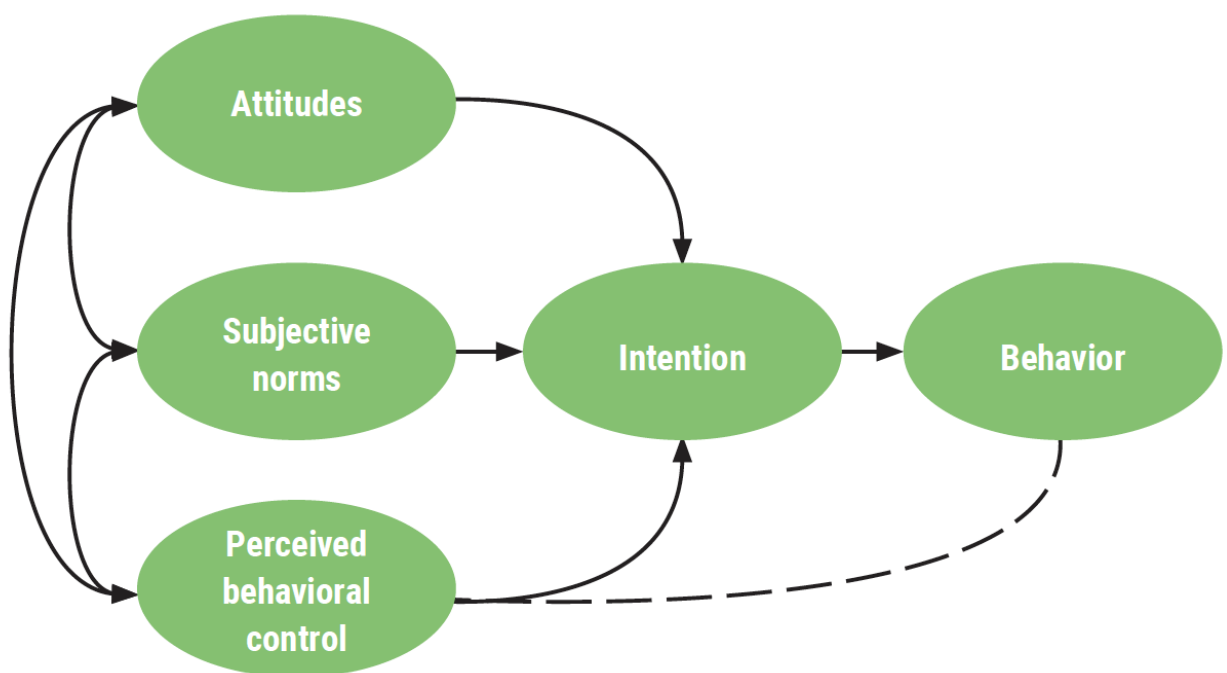
analysis found many mediating variables such as price sensitivity, trust, perceived quality and cultural context.

A very popular factor continually evaluated in empirical research is the consumer willingness to pay for eco-innovative products. Laroche et al. (2001) gave information about higher-income consumers and high diploma educated consumer who are willing to pay a premium for eco-friendly gears, as evidence. Nevertheless, significant doubts have been further raised by certain more recent writings, such as those of Auger and Devinney (2007), with regards to the probability of an environment-friendly attitude leading to climate-friendly purchasing behavior. Another example by Duarte et al. (2024) suggests that in fact consumer are willing to obtain sustainably packed items, as this is how they show their care for sustainability nad eco-innovation. The research hints at a constant conflict between attitudes and behavior as well as between consumers making decisions emotionally based on eco-issues, the price, time, convenience and habit, in spite of showing genuine concern. It identifies the gap between is the foremost question for companies which conduct eco-innovations due to the uncertainties regarding the returns in the market.

Out of all factors affecting consumer response to eco-innovations, trust becomes one of the most crucial. Premised on the account of the study of various researches, Delmas and Burbano (2011) agree that trust on the part of the consumers could easily be eroded over greenwashed products of otherwise greenwashing behavior but on the general category of green products as well. Their observation has been lent additional credence by Rex and Baumann (2007) who show that certification labels will likely have a positive effect on consumer choices only when they are seen as trustworthy and easily recognized. The statement is also supported by Chen (2010) who investigated that green branding positively affects consumers perception and helps to gain brand trust. There is another risk when the large number of labels for environmental performance exists, aiming to inform consumers, could create skepticism and confusion, weakening the impact of eco-innovation brands on consumer behavior.

Several studies reveal that consumer decisions are influenced by their perceptions of value and the performance of the product in hand. Dangelico and Pujari (2010) conclude that eco-innovative products assist with brand differentiation and solid customer loyalty only when environmental benefits and high functional quality are combined. This clearly spells out that consumers are reluctant to sacrifice any performance just for the sake of sustainability; rather, eco-innovation works best if it offers this environmental value together with functional value. These results are primarily useful for multinational companies that are supposed to cope with situations where consumers are very likely to have a range of alternative products.

Further developments in psychological and behavioural constructs play a crucial role in regulating the point of view when it comes to analysing the impacts of eco-innovations. In this situation, Sharma et al. (2023) show via their research that mediation was proposed by perceived consumer effectiveness, attitude and trust, in the relation they had with every intention to purchase environmentally friendly products. This all aligns perfectly with the Theory of Planned Behavior (Ajzen, 1991), suggesting: "Attitude, subjective norms, and perceived behavioral control are determinant factors governing the formation of intention." as an example given Figure 2. A number of studies show that the effects of eco-innovation on consumer behavior occur much less through objective environmental performance, and more through their interaction with these psychological constructs.



Source: Created by author

Figure 2. Theory of Planned Behavior

Cultural and contextual differences further complicate the relationship between eco-innovation and consumer decisions. Thøgersen and Zhou (2012) have pointed out that cultural values significantly moderate consumer responses to green innovations, with collectivist societies emphasizing more on societal norms and approval rather than personal values and self-expression. The developing world, such as by Rezai et al. (2013), discovers that consumers often associate eco-innovation with health and safety, rather than environmental responsibility. In this regard, these findings imply that international companies cannot rely on same eco-innovation strategies but must adapt their approaches to the local consumer motivations and cultural contexts to affect their decision to buy..

A key point from the literature is the increased importance of corporate sustainability communication is seen across international companies and consumers. Even though a number of recent studies, for instance, Sanchez Chaparro et al. (2014), have shown that the transparent communication of ESG aspects heightens the eco-innovation-driven effect on consumer buying intention. Present-day consumers are not only looking into the individual products but also rating the whole sustainability orientation of a corporation. Consequently, alertness is primarily the fact that many international companies would have to ensure that eco-innovation practices are communicated and free of inconsistencies, as incongruences could awake mistrust and reputation hazard.

Despite the substantial body of empirical research on eco-innovation and consumer behaviour, several gaps remain. First, many studies focus on isolated variables, such as willingness to pay or trust, without integrating them into a comprehensive framework that captures the full decision-making process. Second, a significant portion of the literature is context-specific, examining single countries or industries, which limits the generalizability of findings to international business settings. Third, relatively few studies explicitly link corporate eco-innovation practices with consumer decision-making through mediating and moderating mechanisms.

These gaps indicate the need for an integrated research model that connects eco-innovation application in international companies with consumer perception, attitudes, and behavioural outcomes, while accounting for contextual factors such as culture and trust. The following subsection addresses this need by developing a research model grounded in the empirical insights synthesized above.

2.2 The research model for exploring the effect of eco-innovation practices in MNCs on the consumer decision prospects

The research design is a key part of the topical analysis in the present study since it shows what information has been systematically combined into a coherent framework for the empirical analysis. These existing arguments all hint at a complex literature review relation concerning eco-innovation practices in global business and consumer decision-making, which result from being multidimensional and context-restricted, justifying the research along that line. Clearly, eco-innovation would not predict consumer behavior directly. Rather, the prediction works by all kinds of mechanisms, be they cognitive or affective. While this is the time when consumers will begin to interpret and act after having taken into consideration any action by the firm targeted on sustainable ends.

Therefore, the purpose of this sub-section is to construct an extended research model that explains how eco-innovation implemented by international companies affects consumer decisions while providing a clear definition of the analytical scope, sectoral focus and conceptual boundaries of the study. This research model will be a gateway to cross the theoretical background to the empirical stage of the thesis, guaranteeing internal correlation and methodological clarity.

Alignment of research above the aim and objectives of the thesis

The research model is explicitly informed by the purpose of the thesis, which is to unfold how eco-innovations implemented by international companies influence consumer decision-making processes, with attention to environmental responsibility and market competitiveness. Thus, it offers an invading comprehension, not to merely identify the meaning of the existence of eco-innovation but to discuss the mechanisms within this enactment where it is made meaningful or futile for consumers.

Each of the objectives of the research has a direct reflection in the structural-lay of the research model. The goal of structuring the eco-innovation activities themselves is expressed by conceiving eco-innovation implementation as a multidimensional concept, thereby collectively covering product, process, organization and marketing innovations. Inclusion of consumer perception mechanisms, such as trust, perceived value and perceived quality corresponds to the primary objective of understanding the factors that shape consumer behaviour. The last objective-to study the link between eco-innovation and consumer decision-making-is achieved by manifestly considering attitudes and purchase intentions as direct results of eco-innovation by considering them as precursor or mediating or moderating variables.

The research includes those goals within one framework, which implies a shared existence of the empirical investigation and the overall objective of the study in that the former aspect is examined in the latter for avoiding the fragmentation of analysis.

Analytical Focus: Sectoral, Market, and Behavioural Cruxes Ensuring Analytical Depth and Feasibility.

To heighten the depth and practicability of the analysis, the model limited itself on deliberate grounds along the three coordinates of sectoral, market, and behavioural extents.

From the sector point of view, the model tends to focus on consumer goods and where eco-innovation shows up in front of consumer selection. These sectors include, and are not limited to, food and beverages, fashion and textile, household and personal care products, and consumer electronics. In those cases, eco-innovation is often presented to consumers in the form of product attributes, packaging, labeling and marketing messages, where consumer perception becomes the linchpin of market success. The decision to exclude strictly industrial sectors and sectors oriented

toward business-to-business is made as a matter of methodology, in that consumer preferences hardly matter in these settings.

With a market-oriented view, the model is internationally oriented, recognising the fact that multinational firms operate in various cultural, economic and institutional settings. The model's general structure is not dependent on any national market but is meant to capture broad cross-country patterns. It is adaptive as to why consumer responses toward eco-innovations would vary due to contextual differences. This international perspective is indicative of what multinational firms need to think about when adapting to changing consumer attitudes and legislation in relation to eco-innovations.

The foundational perspective is based on the consumer's individual decision-making mechanism rather than on the total product market. This decision is in line with the original goal, given that consumer-decision-making processes are considered as the core endogenous event. Perception, attitude, intention, and behaviour are considered in the model, permitting a fine analysis of how eco-innovation interacts with and prompts the consumer at different stages in the decision-making process.

Conceptualization of the eco-innovation application as an independent construct.

The research model features the singular module of eco-innovation application act, whereby global corporations perform strategic acts to integrate environmental contents into their operations and value propositions. Consistent with the reviews of literature available until now, eco-innovation is conceptualized as a multiple construct, which consists of product eco-innovation, process eco-innovation, organizational eco-innovation and the eco-innovation related to marketing.

Product eco-innovation represents the ideation and launch of goods and services with reduced environmental impact, providing examples such as: energy-efficient appliances, sustainable packaging, or products made from recycled materials. Process eco-innovation is displayed in changes in production methods that reduce resource consumption, emissions or waste. Organisational eco-innovation includes the adoption of environmental management systems, sustainable governance structures, and internal practices supporting eco-performance. Marketing related eco-innovation demonstrates novel ways to communicate, distribute, or deliver value in sustainable ways, such as in eco-labeling, green branding, or product-service systems.

In total, the present model is probably more consistent with the understanding that a solitary eco-innovation element rarely motivates consumer response. Instead, it is the consumers' beliefs about the product attributes, the firm's practices, and the communicated values combined into a general perception.

The most striking analytical feature of the research display is its emphasis on consumer perception mechanisms as mediating variables mediating between eco-innovation application and consumer decisions. Persistent to research in Section 2.1, the empirical studies insist on a particular rationale to support the fact that a particular eco-innovation has a bearing on customer behavior only if it is perceived as credible, valuable and relevant.

The particular consumer perception mechanisms of the model consisted of perceived environmental value, perceived functional quality, trust in environmental claims, and perceived price fairness. The perceived environmental value refers to the extent to which consumers think that an eco-innovation is good for improvement in the environment. The perceived function quality rate is based on the consumers evaluation of product performance and usability, which are two key determinants in making consumer purchasing decisions. Trust in environmental claims considers how much the consumer believes in the corporate sustainability efforts being true and real. Especially when greenwashing is often talked about, trust in environmental claims becomes a major concern. Perceived price fairness is said to be the consumer's perception of the eco-innovative product value being justified by costs.

The conceptual mechanism of perception being mechanisms in the conceptual model emphasizes cognition through judgments and processing to produce an appropriate emphasis and neglect function to shape the consumer pretension of environmental-product positioning. In this case, eco-innovation, if sensed as one of mere superficiality, acts against decision alignment.

Dependent

Variables

Researching upon consumer decision-making outcomes throws the concept upon elements of the dependent side of the research model having consumer attitudes, purchase intention, and purchase behavior of the consumer, based on the established notions in consumer behavior in the conception of decision-making as a course of action rather than a single act.

It would surely be safe to admit that attitudes are the judgment call to evaluate green products or green companies, a characterization that incorporates emotion and cognition along with each other. Intention, in its own vital mode, represents the praxis state proceeding behavioral event and indicates the likelihood of choice by consumers for the green alternatives, whereas the actual buying behavior or act is a full stop behind the term now it has been decided upon, may be constricted by some extraneous conditions, like availability, income, and habit.

The distinction made for attitudes, intentions, and behavior in conceptual model gives a better explanation to this identified discrepancy between attitudes and behavior when it is linked to empirical research. In distinction to behaviors, attitudes and implications hold a far greater weight in

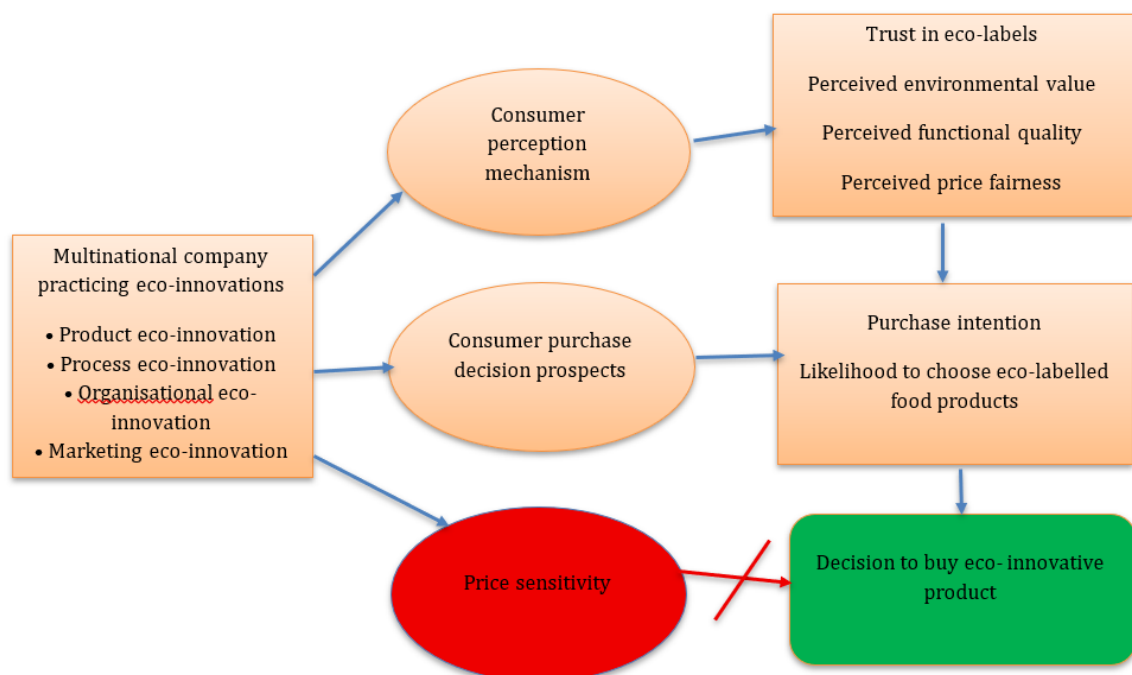
the eco-innovation context, as the higher levels of favorability do not always result in purchases.

Causal and non-causal moderators

The research model has been intentionally introduced in order to influence the relationship between eco-innovation application, the perception thereof and decision-making outcomes. Some of the strongest evidential observations provided there referring to cultural context, income level, environmental awareness, and trust's sensitivity.

The cultural context determines the consumer norms, values, and expectations with respect to sustainability and business responsibility, while the income level are for their ability to buy eco-innovative products. Consumer knowledge about the environment directly affects their willingness to prioritize sustainability in their purchase behavior, whilst trust sensitivity measures the level of doubt in environmental claims, which may have a direct or hindering effect on how eco-innovation impacts consumer perceptions.

In incorporating these moderators, the model recognizes that eco-innovation does not work on its own but is interrelated with wider socioeconomic and cultural environments specific to international markets.



Created by author

Figure 3. Analytical model of the relationship between eco-innovation in international companies and consumer decision-making

At this stage three main research hypotheses are shaped as indicated in Figure 3:

- The eco-friendly practices of multinational companies retain a favorable position in the consumer perception, especially in trust towards eco-labels and sustainability claims under the food market.
- Consumer trust in eco-labels and sustainability claims have a positive effect on customer purchase intentions in terms of eco-friendly food products focusing towards evoked set.
- price sensitivity has a negative moderation effect on the relationship between consumer's perception and purchase intentions, to the extent that a high trust and perceived value do play a role in the decision-making for purposes of generating purchase intentions.

Analytical value and model contribution

The broadened research model developed in this subsection contributes to the research in several ways. Firstly, it helps integrate all the time fragmented empirical findings into one coherent analytic framework. Secondly, it very clearly defines what the analysis includes and excludes, thus helping to eliminate any conceptually ambiguous areas. Thirdly, it provides the core for the empirical portion of the research, for the operationalization and testing of key constructs and relationships identified.

The model suggests that the concept of eco-innovation should be understood not in terms of technology, but in the context of a strategic process, which interacts with consumer perception and behavior. This perspective is important with regard to prevailing thought. Furthermore, the implications of conforming eco-innovation to the expectation of the consumers in international markets were also highlighted.

3. RESEARCH ON THE INFLUENCE OF ECO-INNOVATION PRACTICES IMPLEMENTED BY INTERNATIONAL COMPANIES ON CONSUMER PURCHASE DECISIONS

The empirical research chapter delivers and explains in a coherent and scientifically justified formulation the research design and the hypothesis formulated. The chapter defines the aim of the research and clear research objectives to guide the empirical work. The methodology explains the research sample by defining the conditions and sampling units, as well as the selection criteria and selection methods. This is also where the techniques and procedures for data collection, including respondent selection, data recording, data analysis, are explained and justified to offer a validated mechanism for hypothesis testing.

3.1 Research methods

The aim of the research is to determine the impact of eco-innovation applications in international companies on consumer decision-making.

The following objectives of the research will be met to address the aim of the study:

- To assess the degree to which these eco-innovation practices are noticed by consumers in the case of the food sector.
- To investigate how eco-innovation practices are related to buyer perception mechanisms, mainly with the regard to trust in eco-labelled products and sustainability branding.
- To assess how consumer perception mediates consumer purchase decision prospects, which are related to the purchase intention toward eco-labelled food products.
- To investigate how price sensitivity, as a moderator variable, shapes the relationship between consumer perception mechanisms and consumer purchase decision prospects.

Research sample

The research sample of the study consisted of consumers who purchase food products for themselves or their households. The target respondents needed to avoid bias answer and make research valid, even with smaller rate of responds. The study required food purchasing decision makers as participants because their behaviour reflects how consumers view sustainability through their use of eco-innovation applications or environmentally friendly packaging and responsible production methods.

The minimum sample size was calculated using the standard sample size calculation formula (Cochran 1977):

$$n_0 = Z^2 \times p(1-p) / e^2$$

The required sample size (n) represents the sample size needed for testing purposes while (Z) denotes the confidence level coefficient and (p) indicates the estimated population proportion and (e) defines the acceptable margin of error.

This study used a 95% confidence level which corresponds to a Z value of 1.96. The study used the conservative estimate of p equals 0.5 because the survey did not have precise information about the proportion of consumers who showed positive attitudes toward eco-innovation practices. The study established an 8% margin of error which defined as acceptable (e = 0.08).

The sample size calculation:

$$n = \frac{1.96^2 \cdot 0.5 \cdot (1 - 0.5)}{0.08^2}$$

$$n = \frac{3.8416 \cdot 0.25}{0.0064}$$

$$n = \frac{0.9604}{0.0064}$$

$$n = 150.06$$

The sample size calculation resulted that 150 respondents would provide enough data for the thesis quantitative research which sufficient to use descriptive statistics, correlation analysis and regression analysis.

The research sample included participants from various gender groups, age categories, educational levels, work positions and different incomes. The existing view of the research study indicates that research needs to investigate how different demographic groups deal with eco-innovation application and sustainable grocery shopping habits. The research sample

included respondents who were 18 to 55+ years old and the majority of the sample included respondents who held bachelor's and master's degrees. The primary work groups consisted of employed people and students.

The survey excluded respondents who stated they do not buy food for themselves or household members because this study needed to maintain data relevance and research validity. The research used convenience sampling which not limited results to specific groups, but the research found that selected sample worked well for the study. The survey generally focused on decision making and how eco-innovation practices, consumer perceptions, price sensitivity and purchase decision prospects affect the research goals.

Research

Methodology

Quantitative research was chosen for a variety of reasons, but primarily because of the systematic measurement and statistical analysis of consumer attitudes and behavioural intentions. This would also allow to analyse of relationships and testing the formulated hypotheses on eco-innovation practice issues (behavioural intention and consumer decision-making).

Further, the data collection consisted of instruments, like closed questions and answer. Structured questionnaire comprised fixed questions. The survey had previously lined topics that were indicated to cover at the knowledge of eco-innovation, sustainable consumption, green marketing, environmental consumer behaviour and trends in consumer decision-making. The survey was efficiently administered among potential respondents, using an online Google Forms platform. The survey was distributed between fellow colleagues, students, LinkedIn communities and majority of respondents were target from Facebook cooking community.

The questionnaire was formulated in seven sections, sample available in Appendix 1. The first section considered respondents' shopping habits, such as how often they buy groceries and where, this section was primarily used for screening and only participants who indicated as buyers were included in the analysis. The other section then focused on eco-label awareness and sustainability information dissemination in the food market. Section three was topic to the perceptions by respondents of the eco-innovation practices which international companies are supposed to admit. Section-four examined perceptions on eco-labelled food products against trust on sustainability claims, perceived environmental value, perceived quality, price perception. The fifth section assessed the consumer prospects of buying the eco-

labelled food products. The sixth section considered the different factors determining price sensitivity. Demographic information was collected under Section seven. However, demographic information did not group respondents by ethnicity or their reside location.

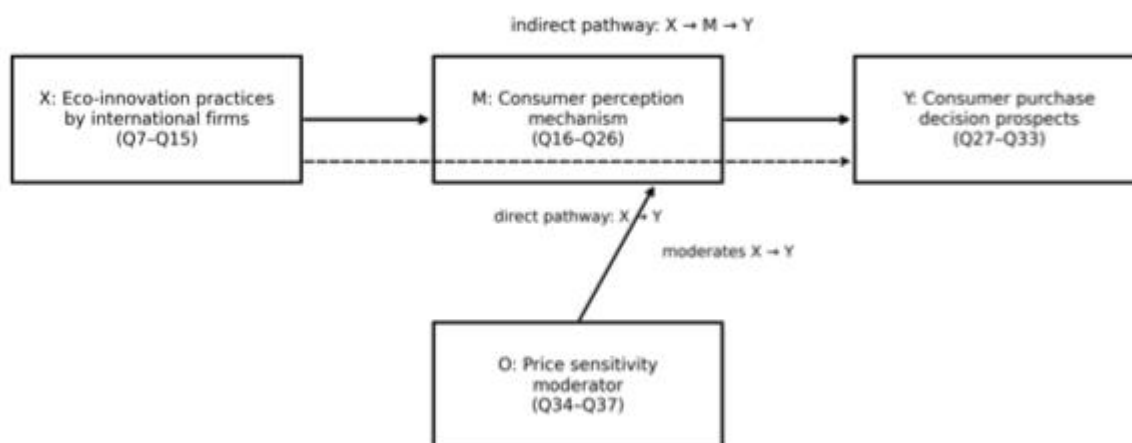
The survey consisted of a 5-point Likert scale made up of questions with regard to:

1 – Strongly disagree; 2 – Disagree; 3 – Neutral; 4 – Agree; 5 – Strongly agree.

A range of perceptions, acceptable attitudes and behavioural intentions related to environmentally responsible food products, bio-products and eco innovation practices is obtained by using a Likert scale (Likert, 1932).

The four analytical variable, as illustrated in Figure 4, components of the model are

- Eco-innovation practices by international firms (independent variable—the X-variable)
- Consumer perception mechanism (mediating variable—the M-variable)
- Consumer purchase decision prospects (dependent variable—the Y-variable)
- Price sensitivity (moderating variable—the O-variable).



Source: Created by author

Figure 4. Proposed analytical model of the empirical research

As indicated in table 6 there are four main research variable. Eco-innovation practices, the independent variable, were measured in question 7–15. Perception mechanism was

measured using questions 16–28. Purchase decision prospects were assessed using answers 29–33. Price sensitivity was measured using questions 34–37.

Reverse coded items were included in the questionnaire to reduce acquiescence bias by reducing acquiescence bias and thereby enhancing the methodological reliability. These reverse-coded questions were items Q19, Q27, Q35, and Q37. Reverse-coding was carried out during data analysis before obtaining the composite scores.

Table 6

Survey question's structure variables meaning

Variable	Role	Questionnaire items	Construct meaning
Eco-innovation practices by international firms	Independent variable (X)	Q7–Q15	Perceived application of sustainable packaging, eco-labels, environmental innovation, corporate responsibility, and sustainable production by international firms.
Consumer perception mechanism	Mediating variable (M)	Q16–Q26	Trust, credibility, perceived product value, perceived quality, environmental benefit perception, and consumer evaluation of eco-labelled products.
Consumer purchase decision prospects	Dependent variable (Y)	Q27–Q33	Willingness to pay more, intention to buy, preference, recommendation, and prior environmentally motivated purchasing behavior.
Price sensitivity	Moderating variable (O)	Q34–Q37	Importance of price, resistance to paying more, price comparison, and preference for cheaper alternatives.

Source: Created by author

The form of sampling used was convenience based. Respondents were chosen based on access and readiness to participate in the survey. The data gathering had been focused towards consumers who buy groceries for themselves or their families.

Data was analysed using Microsoft Excel and SPSS nalytical tools. It consisted of a substantial deal of descriptive statistics, mean analysis, correlations and regression analysis. The composite variables were obtained by averaging scores for the items attached to each element

Reliability of measurement variables was established by calculating the Cronbach's alpha value Cronbach, L. J. (1951). The correlation analysis was used to further determine the

interrelations among the study constructs, whereas regression analysis helped in testing the hypotheses and evaluating the impact on consumer-prospect purchase decisions of eco-innovation practices.

The empirical research model consisted of evaluating direct and indirect relationships between eco-innovation practices and consumer purchase behaviour. Furthermore, the study intended to examine whether price difference (price sensitivity) has a negative or positive effect on the relationship between sustainability perception and purchase decision prospects.

The following hypotheses were framed for empirical testing:

H1: Eco-innovation practices implemented by international companies positively influence consumer perceptions.

H2: Positive consumer perceptions positively influence consumer purchase decision prospects.

H3: Eco-innovation practices positively influence consumer purchase decision prospects.

H4: Price sensitivity negatively moderates the relationship between eco-innovation practices and purchase decision prospects.

Subject selection for the current study is thought to be of substantial import because it brings to light various perceptions of consumers regarding the eco-innovation practice and sustainability-related food consumption behaviour. Additionally, this method facilitates the exploration of statistically significant relationships between the variables under investigation and hence offers insight into consumer decision-making regarding the sustainable development and eco-innovation. The below given table 7 provides recommendations for empirical analysis and hypothesis testing.

Table 7

Recommended analysis sequence

Stage	Research purpose	Statistical method	Model / output	Decision criterion
1	Describe respondent profile and general response patterns	Frequency analysis and descriptive statistics	Gender, age, education, occupation, income; means and standard deviations for Q7–Q37	Report valid %, mean, SD, min, max
2	Assess whether questionnaire items reliably measure each construct	Cronbach's Alpha	Reliability for X, M, Y, O	$\alpha \geq 0.70$ acceptable; $\alpha \geq 0.80$ good
3	Create composite variables for the model	Scale construction	$X = \text{mean}(Q7-Q15)$; $M = \text{mean}(Q16-$	Use mean scale scores if

			Q26); $Y = \text{mean}(Q27-Q33)$; $O = \text{mean}(Q34-Q37)$	reliability is acceptable
4	Examine initial associations among constructs	Pearson correlation analysis	Correlation matrix among X, M, Y, O	r strength and $p < 0.05$
5	Test the direct influence of eco-innovation on purchase decisions	Simple linear regression	$Y = \beta_0 + \beta_1 X + \varepsilon$	β_1 positive and $p < 0.05$ supports H1
6	Test whether eco-innovation influences consumer perception	Simple linear regression	$M = \beta_0 + \beta_1 X + \varepsilon$	β_1 positive and $p < 0.05$ supports $X \rightarrow M$ path
7	Test whether consumer perception explains purchase decisions	Multiple regression	$Y = \beta_0 + \beta_1 X + \beta_2 M + \varepsilon$	M significant; X decreases compared with Model 1
8	Test the indirect effect of eco-innovation through perception	Mediation analysis using bootstrapping	Indirect effect = $a \times b$	95% bootstrap CI does not include zero
9	Test whether price sensitivity changes the effect of eco-innovation	Moderated regression with interaction term	$Y = \beta_0 + \beta_1 X + \beta_2 O + \beta_3 (X \times O) + \varepsilon$	β_3 significant at $p < 0.05$
10	Test whether the full model explains purchase decisions better	Hierarchical multiple regression	Step 1 controls; Step 2 X; Step 3 M; Step 4 O and $X \times O$	Increase in R^2 and significant ΔR^2
11	Compare demographic groups	Independent samples t-test / ANOVA	Gender, age, income, education differences in Y	$p < 0.05$ indicates group difference

Source: created by author

3.2 Research data analysis and discussion of the results

In this part of the thesis, we will analyse qualitative research results data. In total there were 212 respondents which is above the required sample size of 150 respondents, as was calculated by sample sizing. The summary of survey results are available in the appendix 2.

Analysis of research reliability

The assessment of research reliability of questionnaire constructed through Cronbach's Alpha coefficient analysis which is one of most used method in academia. The SPSS statistical data available in appendix 3.

Table 8

Reliability analysis of using Cronbach's Alpha

Construct	Questionnaire Items	Number of Items	Cronbach's Alpha	Reliability Interpretation
Eco-innovation practices by international firms (X)	Q7–Q15	9	0.961	Excellent
Consumer perception mechanism (M)*	Q16–Q26	11	0.901	Excellent
Consumer purchase decision prospects (Y)*	Q27–Q33	7	0.836	Good
Price sensitivity (O)*	Q34–Q37	4	0.781	Acceptable
Overall analytical scale	Q7–Q37	31	0.934	Excellent

* Reverse-coded items included: Q19, Q27, Q35, Q37.

Source: Created by author

The results indicate, in table 8, all constructs achieved by Cronbach's Alpha values above 0.70 which established the measurement scales as internally consistent according to the established standard. The consumer perception mechanism construct showed the strongest reliability coefficient ($\alpha = 0.901$) which demonstrated that all questionnaire items maintained perfect reliability in their assessment of sustainability perceptions and eco-label trust. The eco-innovation practices construct ($\alpha = 0.961$) and purchase decision prospects construct ($\alpha = 0.836$) also demonstrated strong reliability because the questionnaire items measured sustainability-oriented attitudes and environmentally responsible purchasing behaviour with consistent accuracy. The price sensitivity construct achieved acceptable reliability ($\alpha = 0.781$) which allowed researchers to conduct additional statistical tests even though respondents showed more variation in their price related assessment. The analytical scale showed excellent reliability ($\alpha = 0.934$) which established the research instrument as both statistically reliable and suitable for all subsequent research methods which included descriptive statistics, correlation regression, mediation and moderation analysis.

Analysis of demographic

The survey shows that most respondents identified as female consumers, as it was suspected as most grocery shopping for household done by women. The findings match earlier studies about sustainability consumer behaviour which show that women display superior environmental knowledge and stronger commitment to sustainable buying than men.

Table 9

Respondents gender analysis

Category	Frequency	Percentage
Female	134	63.2%
Male	72	34.0%

Prefer not to say	6	2.8%
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Source: *Created* *by* *author*

The table 9 identified its biggest age category as people who were 25 to 34 years old. Young professionals and younger consumers receive more sustainability information through digital platforms and environmental programs and international corporate social responsibility efforts. The age group shows better understanding of eco-labels and sustainable packaging and environmentally responsible consumption practices.

Majority of respondents, around third, held a higher education diploma in bachelor's or master's degree studies. People with higher education levels demonstrate better environmental knowledge and deeper understanding of sustainability principles. Educated consumers develop a higher tendency to analyse environmental claims and understand sustainability features of products.

The study found that most respondents worked full time or studied at academic institutions. The two groups often demonstrate active engagement with modern consumption trends and sustainable consumption practices. The two groups of respondents demonstrate different buying habits because involved respondents have better financial resources than students who learn about sustainability through their educational programs.

The study found that respondents showed balanced income distribution, but the middle and upper-middle income groups made up the largest portion of participants. Income level serves as a crucial factor that determines how people adopt sustainable consumption patterns. The higher the income the higher buying power consumer holds. As a result, consumers who have higher incomes tends to spend more money on eco-innovation products, whereby the buying decision might be affected by companies who promotes eco-innovations to the consumer.

In order to understand if demographic influence consumer decision making independent samples t-tests and one-way ANOVA tests were performed. The independent samples t-test was used to assess two groups which consisted of female and male respondents while one-way ANOVA tested multiple groups which included age and income and education categories.

Table 10

Summary of T-test and One-Way ANOVA

Grouping variable	Method	T/F-value	p-value	Decision
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Gender: female vs male	Independent samples t-test	T-value 0.878	0.381	No significant difference
Age	One-way ANOVA	0.835	0.505	No significant difference
Income	One-way ANOVA	0.254	0.938	No significant difference
Education	One-way ANOVA	0.341	0.887	No significant difference

Source: Created by author

The survey results presented in table 10 did not exhibit any statistically significant differences in female and male purchasing decisions ($t = 0.878$, $p = 0.381$). As a results gender did not have a significant effect on environmentally responsible purchasing behaviour as the p-value exceeded 0.05 which was the established significance threshold.

The ANOVA results showed that no age groups ($F = 0.835$, $p = 0.504$), income groups ($F = 0.254$, $p = 0.938$, or education groups ($F = 0.341$, $p = 0.887$) showed any statistically significant differences. The p-values exceeded 0.05 in every situation which showed that respondents from various demographic groups shared similar purchasing patterns towards eco-labelled food products.

The research results show that people from different demographic groups have similar attitudes toward eco-innovation grocery shopping. International companies who implement eco-innovation practices create similar consumer effects which operate independently of their customers' gender and age and income and education background.

Analysis of consumer perception

The analysis demonstrated that international companies' eco-innovation practices which they implement results in positive results for their consumers who support sustainable business practices. The average, presented in table 11, mean is above 3.00 which show trust in companies with environmental awareness. The majority of respondents believed that international food companies have begun to adopt more eco-friendly methods of operation. The respondents showed positive attitudes towards sustainable packaging and environmentally responsible production methods and the ecological innovations which international companies implemented.

Table 11

Indicators on Eco-innovation practices by international firms

Indicator	Mean	SD
Q7. International companies increasingly apply environmentally friendly practices	3.72	1.237
Q8. Eco-labelled products reflect real environmental efforts	3.71	1.176

Q9. Sustainable packaging is a sign of eco-innovation practices	3.82	1.188
Q10. Environmental innovations improve company image	3.76	1.210
Q11. Eco-innovative companies appear more socially responsible	3.73	1.181
Q12. Consumers trust companies implementing environmental innovations	3.78	1.164
Q13. Environmental practices influence product evaluation	3.79	1.178
Q14. Consumers pay attention to sustainable production and packaging	3.73	1.266
Q15. Environmentally innovative companies are more attractive	3.82	1.175

Source: Created by author

Consumers use eco-innovation practices as their primary method for assessing corporate responsibility and environmental dedication. Socially responsible company behaviour received frequent connections with sustainable packaging and environmental certifications and eco-labelled products.

The respondents showed high agreement with the idea that environmental innovations help international companies improve their public reputation. The finding shows that companies which engage in sustainability activities achieve better corporate reputations which lead to stronger consumer trust.

The study found that consumers prefer to trust companies which show dedication to developing sustainable environmental technologies. The respondents said that environmental practices shape their product assessments and make food companies more appealing to them. The findings confirm the theoretical framework established in earlier chapters which shows that eco-innovation practices create positive effects on corporate image and consumer trust together with customer behavior.

The analysis of consumer perception mechanisms further demonstrated that respondents generally trust eco-labels and sustainability claims displayed on food products. Eco-labels helped consumers find environmentally friendly products by showing which items meet sustainable criteria. However, Some respondents showed moderate positivity about the environmental claims which companies make, which can be seen table 12.

Table 12

Indicators on Eco-innovations

Indicator	Mean	SD
Q8. Eco-labelled products reflect real environmental efforts	3.71	1.176
Q16. Consumers trust eco-labels	3.65	1.224
Q18. Eco-labels help identify environmentally friendly products	3.64	1.271
Q19. Consumers are sceptical about environmental claims	3.17	1.243

Source: Created by author

Analysis of Consumer Purchase Decision Making

The study of consumer purchase decisions showed that study participants showed positive behavioral intentions toward eco-friendly food products which had eco-labels. The study results showed that consumers have positive attitudes toward environmentally friendly products and they are willing to participate in sustainable consumption practices. The findings presented in Table X show that respondents plan to buy eco-labelled food products in the future while they prefer sustainable product choices when multiple items are available.

Table 13

Indicators on consumer perception on Eco-innovations

Indicator	Mean	SD
Q28. Consumers are willing to pay more for eco-labelled food products	3.63	1.365
Q29. Consumers intend to buy eco-labelled food products in the future	3.57	1.387
Q30. Consumers prefer eco-labelled products over conventional products	3.58	1.348
Q31. Consumers are likely to choose eco-labelled products when alternatives are available	3.55	1.339
Q32. Consumers would recommend eco-labelled products to others	3.53	1.402
Q33. Consumers have previously chosen eco-labelled products because of environmental characteristics	3.60	1.343
Q34. Price strongly influence purchasing decision	3.24	1.332

Source: Created by author

The results given in the table 13 show that all average scores reached above the neutral midpoint of the Likert scale of 3.00 which shows that respondents had positive buying intentions. The respondents showed high agreement with the statement that they would recommend eco-labelled food products to other consumers which received a mean score of 3.53 and a standard deviation of 1.402. Positive sustainability perceptions lead to positive word-of-mouth marketing which helps eco-labelled products achieve market success according to this finding.

Respondents showed strong future purchasing intentions toward eco-labelled food products which received a mean score of 3.57 and a standard deviation of 1.387 while they preferred environmentally friendly products to traditional products which received a mean score of 3.58 and a standard deviation of 1.348. The findings show that sustainability factors now play a bigger role in how consumers decide what to buy in the food industry.

The analysis identified that respondents usually choose eco-labelled products when they have multiple product options to select from which received a mean score of 3.55 and a standard deviation of 1.339. The result shows that product environmental attributes serve as key factors which customers use to evaluate products during their decision-making process.

The study found that many respondents had bought eco-labelled food products because of their environmental attributes which received a mean score of 3.60 and a standard deviation of 1.343

The finding shows that sustainability product features impact current shopping patterns which people follow instead of only affecting their future behavior.

Although respondents showed positive feelings about eco-labelled products their willingness to pay higher costs for sustainable items received a lower mean score of 3.24 with a standard deviation of 1.332. The results show that financial factors still serve as a major influence on consumers who make environmentally friendly purchase decisions.

3.3 Evaluation of research results

In the following section the study will provide hypothesis testing Correlation and Regression Analysis

The study used correlation and regression analyses to investigate how eco-innovation practices and consumer perception mechanisms affect purchase decision prospects and price sensitivity. The study used Pearson correlation analysis to assess how the main analytical variables were related to one another, while regression analysis measured the impact of eco-innovation practices on consumer perceptions and purchase decision prospects.

Table 14

Correlation analysis of the main variables

Variable	X	M	Y	O
Eco-innovation practices (X)	1.000	0.707**	0.697**	- 0.080
Consumer perception mechanism (M)	0.707**	1.000	0.682**	- 0.122
Purchase decision prospects (Y)	0.697**	0.682**	1.000	- 0.232**
Price sensitivity (O)	-0.080	-0.122	- 0.232**	1.000

**Correlation is significant at the 0.01 level

Source: Created by author

The analysis indicated statistically significant positive relationships between the main analytical variables embedded within the research model. The strongest positive association was observed between eco-innovation practices and consumer perception mechanisms ($r = 0.707$, $p <$

0.001), suggesting that as international companies increase their implementation of eco-innovation practices, consumer perceptions of sustainability, eco-label trust, environmental credibility evaluations become more positive.

Similarly, eco-innovation practices were found to have a strong positive relationship with purchase decision prospects ($r = 0.697$, $p < 0.001$). The result implies that the adoption of environmentally responsible business practices and sustainability-oriented innovations positively affect the consumers' willingness to purchase eco-labelled food products.

The consumer perception mechanisms also showed a strong positive correlation with purchase decision prospects ($r = 0.682$, $p < 0.001$). This reaffirmed the considerable contribution of positive sustainability perceptions towards environmentally responsible purchasing behaviour.

On the other hand, price sensitivity had weak negative correlations with the other analytical variables. The results revealed a statistically significant relationship between price sensitivity and purchase decision prospects ($r = -0.232$, $p < 0.001$) which suggests that the greater the sensitivity towards product prices, the lower the consumers' willingness to buy environmentally friendly products. However, price sensitivity and eco-innovation practices ($r = -0.080$, $p = 0.248$), and price sensitivity and consumer perception mechanisms ($r = -0.122$, $p = 0.077$) did not emerge as statistically significant.

The results of the correlation analysis confirm that eco-innovation practices and positive consumer sustainability perceptions are positively associated with environmentally responsible purchasing behaviour and that higher price sensitivity might weaken purchase decision prospects with regard to eco-labelled food products.

The study used regression analysis to examine how different variables affect each other in their research study.

Table 15

Regression analysis results

Relationship	β	t-value	p-value	Result
$X \rightarrow M$	0.707	14.468	<0.001	Supported
$X \rightarrow Y$	0.682	13.513	<0.001	Supported
$M \rightarrow Y$	0.697	14.075	<0.001	Supported
$O \rightarrow Y$	-0.232	-3.450	<0.01	Partially supported

Source: Created by author

Regression analysis results show that eco-innovation practices have a significant and positive effect on consumer perception mechanisms ($\beta = 0.707$, $p < 0.001$). The results show that respondents who positively evaluated sustainable packaging, environmental innovations and eco-labelled

practices also had stronger sustainability perceptions and more trust towards environmentally responsible companies.

Moreover, the positive relationship between consumer perception mechanisms and purchase decision prospects was statistically significant ($\beta = 0.682$, $p < 0.001$). The results indicate that consumers with higher sustainability perceptions and higher trust towards eco-labels are more likely to have positive behavioural intentions towards eco-labelled food products.

The analysis further showed that eco-innovation practices positively influence consumer purchase decision prospects ($\beta = 0.697$, $p < 0.001$). The findings suggest that the sustainability-oriented business practices of international firms positively influence environmentally responsible purchasing behaviour and raise the willingness of consumers to purchase eco-labelled products.

Finally, the regression analysis showed a statistically negative relationship between price sensitivity and purchase decision prospects ($\beta = -0.232$, $p < 0.001$). The results show that while consumers generally support environmentally responsible products, the higher product price weakens consumers' environmentally responsible purchase intention.

Regression analysis generally confirms that eco-innovation strategies and positive sustainability perceptions are important determinants for the probability of a consumer's purchase decision and that price sensitivity is an important limiting factor that influences environmentally responsible purchasing behaviour.

Analysis of hypothesis testing

Hypothesis testing was conducted to evaluate the impact of sustainable innovation practices by an international company on consumerism. According to a review of theoretical and empirical work an observational look at evidence from the literature on individual-specific environmental concerns, green trust, communication about sustainability, environmental labeling, sustainable packing, perceived product quality and price sensitivity affecting consumer attitudes toward the purchase of eco-innovative products. Hypotheses were discovered and aligned with previous knowledge and theoretical frameworks of the research process.

Eco-innovation has an impact of consumer purchasing was the first point put up for argument. As research outcomes would prove, the majority tended towards positive feelings on attributable environmentally responsible products in relation to business sustainability. Such attitudes could be affirmed by respondents who felt that green packaging, green production systems, and environmentally friendly branding are values that make consumers think positively of such concepts and at the same time buy products internationally. Such conclusions coincide with Chen (2010) who evidenced that green brand image and environmental responsibility significantly reinforce consumer confidence and purchasing. It is also stated by Dangelico and Pujari (2010) that environmental

benefits combined with products' functionality and value make consumers less fickle towards eco-innovation. Dimensions also revealed the same point, thus according to Hojnik and Ruzzier (2016), market demand, coupled with consumer interest, motivated companies to initiate eco-innovation strategies.

The second hypothesis is that green trust and sustainability communication may enhance consumer decision-making. The results confirmed that there is a positive effect on transparency, credibility, and trust in the environmental claims as consumer attitude towards the purchase of eco-innovative products. Respondents had significantly higher trust towards companies that are visible perform sustainable communications, provide reliable labeling, and have verified environmental information. This clearly supports Delmas and Burbano (2011) outlook on the consequences of greenwashing: consumer trust reduction and weaker environmental claim effectiveness. In a study conducted by Sanchez Chaparro et al. (2014), it was established that transparent sustainability communication strengthens consumer trust and stimulates positively towards purchase intention as well as brand evaluation. The findings find support from Sharma et al., Paço et al., and Kautish et al. studies between 2023 and 2014, where the respondents verified that eco-innovation indirectly influences making the buying decisions; mediators include trust, perceived consumer effectiveness, and sustained attitudes to sustainability.

Hypothesis three posited that "eco-labels, sustainable packaging, and the perceived quality of a product would lead to better returns from buying such products." The results of our study supported this hypothesis; they showed that how environmentally friendly packaging and sustainability certification would suggest to consumers that a product must be of higher quality, is also safe and ethical. The respondents associated the packaging that may be recycled and/or biodegradable with companies considered environmentally responsible, and, through this route, were more inclined to buy a product with an eco-label. Thus these findings are similar to those of Rex and Baumann (2007) which indicated that eco-labels serve as prominent decision-making aids only if consumers see them as credible and simple.

Moreover, Grunert et al., Hieke, and Wills (2014) found out that sustainability labels are somewhat related to the influence of consumers on trust and evaluation of the product. Nevertheless, the effectiveness is determined by consumers' apprehension and motivation. Another study by Duarte et al. and Silva (2014), which showed a positive, strong significant relationship between the functionality of the packaging and purchase intentions ($r = 0.609$; $p < 0.001$) indicate that sustainable packaging does influence consumer behavior, as long as the quality of the product and its use remain preserved.

The fourth hypothesis discussing how the price and perceived values can influence the willingness of the consumer to purchase environmentally innovative products. Findings show that though consumers are generally supportive of sustainability and eco-innovation, higher prices have been shown to deter the actual purchasing behavior. Findings have proved the research work of Auger and Devinney (2007), who identified a gap between positive environmental attitudes and their actual purchasing behavior since consumers would have to deal with trade-offs related to the price. Further, this statement echoes the conclusion of Laroche, Bergeron, and Barbaro-Forleo (2001), who found that more environmentally concerned consumers, together with higher education and financial ability, tend to pay more for environmental adaptation-product attributes. They further discover in their study that sustainability does little to guarantee consumer attitude converts into purchase likelihood. Rezai et al. (2013) has put forward that consumers' responses were positive concerning eco-innovative products, with the hope of such sustainability involving personal benefits to them, encompassing their health, safety, and in the end, their families.

Overall, it was verified with the help of hypothesis testings eco-innovation tends to have a serious push on consumers when it comes to their purchases in the international markets. It finds that ecological concern, green trust sustainability communication, eco-labels, sustainable packaging, and perceived product value are some factors prompting customers to purchase these products. On the contrary, the analysis also establishes that successful eco-products sold to consumers partly depend on transparency, affordability, functional value, and consumer understanding of sustainability initiatives. Hence, it is recommended that an environment-friendly company shall make an attempt to integrate eco-responsibility with product quality thereby ensuring open, effective communication to consumers and consumer-oriented value creation to ensure a trustful consumer and healthy purchasing behavior.

Conclusion

1. After summarising the concept and main types of eco-innovation, discussed in academic and professional literature, it was concluded that eco-innovation is a sustainability-oriented business approach aimed at reducing environmental impact through environmentally responsible production processes, sustainable packaging, eco-labelled products, green technologies and sustainability-oriented organisational practices. Theoretical analysis proved that eco-innovation has become an important strategic tool to contribute to competitiveness, corporate reputation and sustainable business development in international markets.

2. After systematising the main challenges and opportunities for the implementation of eco-innovations in international companies, it was determined that the implementation of eco-innovations

creates opportunities related to a stronger competitive advantage, improvement of the corporate image, development of consumer trust, and market differentiation. The analysis also showed that international companies still have to face the challenges of implementation costs, greenwashing risks, consumer scepticism and balancing sustainability goals with economic performance and affordability.

3. Factors influencing consumer behaviour towards environmentally friendly innovations were identified and it was found that consumer buying behaviour is positively influenced by perceptions of sustainability, environmental concern, credibility of eco-labels, corporate environmental responsibility, and trust in sustainability-oriented business practices. The analysis also indicated that price sensitivity is still one of the major constraints for environmentally responsible buying decisions.

4. We developed the conceptual research model explaining the relationship between eco-innovation practices implemented by international companies and consumer decision-making processes. As a result, it was established that eco-innovation practices have a positive impact on consumer perception mechanisms, which, in turn, affect consumer purchase decision prospects. The developed analytical model also confirmed the importance of price sensitivity as a moderating factor influencing environmentally responsible purchasing behaviour.

5. The empirical analysis, after assessing the impact of eco-innovation practices on the chances of consumer purchase decision in the consumer goods market, revealed statistically significant positive links between eco-innovation practices, consumer perception mechanisms, and chances of purchase decisions. The results confirmed that consumers are generally positive about sustainability-oriented business practices, stronger sustainability perceptions and trust towards eco-labeled products significantly increase environmentally responsible purchasing intentions. The analysis also showed that the more price sensitive the consumers are, the less willing they are to buy environmentally responsible products.

Recommendations

The research findings indicated that international companies need to continue improving the implementation of eco-innovation practices to improve consumer trust, sustainability perceptions and environmentally responsible purchasing behaviour. As consumers associate sustainable packaging solutions and environmentally responsible production processes to sustainability-oriented product development with greater corporate responsibility and product credibility, more focus needs to be paid to these practices.

The results also indicate that international companies should improve the transparency and credibility of sustainability communication. Consumers had more confidence in those companies which offered plain environmental information, credible eco-labels and clear sustainability claims. Therefore, companies should avoid ambiguous environmental communication and make sure that sustainability information is correct, verifiable and comprehensible to consumers.

The study also emphasised the effect of eco-labels and sustainability certifications on consumer perceptions and purchase decisions. Thus, firms need to invest in credible environmental certifications and improve the visibility of sustainability-related product information to enhance consumer confidence towards environmentally responsible products.

The results confirmed the negative influence of price sensitivity on environmentally responsible purchasing behaviour. Therefore, international companies need to try to balance sustainability objectives with the affordability of products and the perceived value for consumers. Sustainability-oriented products should be financially accessible to consumers without compromising the quality and functionality of the product.

The research findings also suggest that companies need to do more to educate consumers about sustainability and environmental responsibility. The higher environmental and functional benefits awareness of the consumers on eco-innovation practices may contribute to the development of a more solid consumer trust and a higher acceptance of environment-friendly products in the international markets.

Future research may extend the analysis further by investigating the effects of eco-innovation practices in different industries, countries and consumer groups. Further studies may also investigate long-term shifts in consumer attitudes towards sustainability and assess the influence of economic conditions on environmentally responsible purchasing behaviour over time.

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SANTRAUKA LIETUVIŲ KALBA

EKOLOGINIŲ INOVACIJŲ TAIKYMO TARPTAUTINĖSE ĮMONĖSE ĮTAKA VARTOTOJŲ SPRENDIMAMS

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Darbo vadovė doc. dr. I. Kiaušienė

78 puslapių, 4 paveikslų, 15 lentelių, 5 priedų ir 78 literatūros šaltinių.

Temos aktualumą lemia augantis tarptautinių įmonių dėmesys tvarumui, ekologinėms inovacijoms ir aplinkosauginei atsakomybei bei didėjantis vartotojų susidomėjimas aplinkai draugiškais produktais ir tvariomis verslo praktikomis. Šiuolaikiniai vartotojai vis dažniau vertina įmones pagal jų taikomas ekologines inovacijas, tvarumo komunikaciją ir aplinkosauginius sprendimus.

Darbo objektas – ekologinių inovacijų praktikų taikymo įtaka vartotojų sprendimų priėmimo elgsenai.

Darbo tikslas – išanalizuoti ekologinių inovacijų praktikų, taikomų tarptautinėse įmonėse, įtaką vartotojų sprendimų priėmimo elgsenai.

Darbo uždaviniai: išanalizuoti ekologinių inovacijų teorinį pagrindą ir jų vaidmenį tarptautinėse įmonėse; išnagrinėti tvarios vartotojų elgsenos, vartotojų suvokimo, ekologinių ženklų ir aplinkai draugiškų pirkimo sprendimų teorinius aspektus; sukurti tyrimo metodologiją, skirtą ekologinių inovacijų praktikų poveikio vartotojų sprendimų priėmimo elgsenai analizei; surinkti ir statistiškai išanalizuoti empirinius duomenis apie vartotojų požiūrį į ekologinių inovacijų praktikas; įvertinti ryšius tarp ekologinių inovacijų praktikų, vartotojų suvokimo mechanizmų, pirkimo sprendimų perspektyvų ir kainų jautrumo.

Tyrimo rezultatai parodė, kad vartotojai teigiamai vertina tarptautinių įmonių taikomas ekologinių inovacijų praktikas. Nustatyta, kad tvari pakuotė, ekologiniai ženklai, aplinkosauginės inovacijos ir aplinkai atsakingi gamybos metodai stiprina įmonių patikimumą, gerina įmonių įvaizdį bei didina vartotojų pasitikėjimą. Koreliacijos ir regresinės analizės rezultatai atskleidė statistiškai reikšmingus teigiamus ryšius tarp ekologinių inovacijų praktikų, vartotojų suvokimo mechanizmų ir

pirkimo sprendimų perspektyvų. Tyrimas taip pat parodė, kad kainų jautrumas neigiamai veikia vartotojų sprendimą įsigyti aplinkai draugiškus produktus.

Appendix

1

Survey

Questionnaire

The Influence of Eco-Innovation Practices Implemented by International Companies on Consumer Purchase Decisions.

Dear

respondent,

I am conducting a survey for my master's thesis on the influence of eco-innovation practices implemented by international companies on consumer purchase decisions in the food market.

Your participation is completely anonymous, and the collected data will be used solely for academic purposes.

Please answer all questions as honestly as possible.

Thank You in advance and best of wishes in your purchasing decision.

Karina

SECTION

1.

SHOPPING

HABITS

Q1. Do you purchase food products for yourself or your household?

☐ Yes

☐ No

Q2. How often do you buy food products?

☐ Daily

☐ Several times a week

☐ Once a week

☐ Several times a month

☐ Rarely

Q3. Where do you usually buy food products?

- ☐ Supermarkets
- ☐ Local grocery stores
- ☐ Farmers' markets
- ☐ Online stores
- ☐ Organic food stores
- ☐ Other

SECTION 2. AWARENESS OF ECO-LABELS AND SUSTAINABILITY

Q4. Have you noticed eco-labels or environmental claims on food products?

- ☐ Yes
- ☐ No
- ☐ Not sure

Q5. How often do you notice eco-labels or sustainability-related information when shopping?

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Very often

Q6. Which factors usually influence your attention when choosing food products?

- ☐ Price
- ☐ Brand
- ☐ Eco-labels or certifications
- ☐ Organic labels
- ☐ Sustainable packaging
- ☐ Country of origin

- ☐ Ingredients
- ☐ Promotions or discounts
- ☐ Nutritional value
- ☐ Other

SECTIONS 3–6. Likert Scale Questions

Q7. International food companies increasingly apply environmentally friendly practices.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q8. Eco-labelled food products reflect real environmental efforts made by companies.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q9. Sustainable packaging is a sign that a company applies eco-innovation practices.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q10. Environmental innovations improve the image of international companies.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q11. International companies that apply eco-innovation practices appear more socially responsible.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q12. I trust international companies more when they actively implement environmentally friendly innovations.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q13. Environmental practices implemented by international companies influence my opinion about their products.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q14. I pay attention to whether companies use sustainable production and packaging practices.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q15. Companies that invest in environmentally friendly innovations are more attractive to consumers.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q16. I trust eco-labels displayed on food products.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q17. I believe sustainability claims on food packaging are true.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q18. Eco-labels help me identify environmentally friendly food products.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q19. I am skeptical about environmental claims made by food companies.

1	2	3	4	5
Strongly agree	Agree	Neutral	Disagree	Strongly disagree

Q20. Buying eco-labelled food products helps protect the environment.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q21. Eco-labelled food products are beneficial for society.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q22. Choosing eco-labelled food products is a responsible decision.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q23. Eco-labelled food products are of good quality.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q24. Eco-labelled food products are as reliable as conventional food products.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q25. Environmental claims do not reduce the quality of food products.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q26. Eco-labelled food products are worth their price.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q27. Eco-labelled food products are often too expensive.

1	2	3	4	5
Strongly agree	Agree	Neutral	Disagree	Strongly disagree

Q28. I am willing to pay more for eco-labelled food products.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q29. I intend to buy eco-labelled food products in the future.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q30. If possible, I prefer eco-labelled food products over conventional products.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q31. I am likely to choose eco-labelled food products when several alternatives are available.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q32. I would recommend eco-labelled food products to other consumers.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q33. I have previously chosen eco-labelled food products because of their environmental characteristics.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q34. Price is the most important factor in my food purchase decisions.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q35. Even if a food product is eco-labelled, I would not buy it if it is more expensive.

1	2	3	4	5
Strongly agree	Agree	Neutral	Disagree	Strongly Disagree

Q36. I carefully compare prices before purchasing food products.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Q37. I choose cheaper products even if they are less environmentally friendly.

1	2	3	4	5
Strongly agree	Agree	Neutral	Disagree	Strongly Disagree

SECTION 7. DEMOGRAPHIC INFORMATION

Q38. What is your gender?

☐ Female

☐ Male

☐ Prefer not to say

Q39. What is your age group?

- ☐ Under 18
- ☐ 18–24
- ☐ 25–34
- ☐ 35–44
- ☐ 45–54
- ☐ 55 and above

Q40. What is your education?

- ☐ Secondary education
- ☐ Professional education
- ☐ Bachelor's degree
- ☐ Master's degree
- ☐ Doctoral degree
- ☐ Other

Q41. What is your current occupational status?

- ☐ Student
- ☐ Employed
- ☐ Self-employed
- ☐ Unemployed
- ☐ Retired
- ☐ Other

Q42. How would you describe your income level?

- ☐ Low (below 800 Eur)
- ☐ Lower-middle (801 – 1400 Eur)
- ☐ Middle (1401 – 2200 Eur)

- ☐ Upper-middle (2201-3500 Eur)
- ☐ High (above 3501 Eur)
- ☐ Prefer not to say

Appendix 2

Descriptive Statistics of Full Survey Items

The appendix displays all descriptive statistics which describe the Likert-scale questionnaire items that were used in the empirical model. The calculations are based on 212 valid responses. The table includes the number of valid answers (N), mean, standard deviation, minimum value and maximum value for each survey item.

Mean

Mean: $\bar{x} = \frac{\sum x_i}{N}$

Sample standard deviation: $s = \sqrt{[\sum (x_i - \bar{x})^2 / (N - 1)]}$

Composite construct mean: Construct score = mean of the items belonging to the same construct for each respondent.

Question	Statement	Mean	SD
Q7	International companies apply environmentally friendly practices	3.72	1.237
Q8	Eco-labelled products reflect real environmental efforts	3.71	1.176
Q9	Sustainable packaging is a sign of eco-innovation	3.82	1.188
Q10	Environmental innovations improve company image	3.76	1.210
Q11	Eco-innovative companies appear socially responsible	3.73	1.181
Q12	Consumers trust companies implementing environmental innovations	3.78	1.164
Q13	Environmental practices influence product evaluation	3.79	1.178

Q14	Consumers pay attention to sustainable production and packaging	3.73	1.266
Q15	Environmentally innovative companies are more attractive	3.82	1.175
Q16	Consumers trust eco-labels	3.65	1.224
Q17	Sustainability claims influence consumer perceptions	3.73	1.242
Q18	Eco-labels help identify environmentally friendly products	3.64	1.271
Q19*	Consumers are sceptical about environmental claims	3.17	1.243
Q20	Sustainability practices increase company credibility	3.67	1.206
Q21	Environmental responsibility improves product attractiveness	3.69	1.249
Q22	Consumers value environmentally responsible companies	3.64	1.245
Q23	Sustainable products are perceived as higher quality	3.68	1.164
Q24	Environmental practices improve consumer trust	3.72	1.178
Q25	Sustainability influences purchasing attitudes	3.67	1.245
Q26	Eco-innovation positively affects company reputation	3.64	1.252
Q27*	Eco-labelled products are too expensive	3.40	1.354
Q28	Consumers are willing to pay more for eco-products	3.63	1.365
Q29	Consumers intend to purchase eco-labelled products in future	3.57	1.387
Q30	Consumers prefer eco-labelled over conventional products	3.58	1.348
Q31	Consumers choose eco-products when alternatives are available	3.55	1.339
Q32	Consumers recommend eco-labelled products to others	3.53	1.402
Q33	Consumers previously purchased eco-products because of environmental features	3.60	1.343
Q34	Price strongly influences purchasing decisions	3.24	1.332

Q35*	Consumers avoid eco-products if prices are higher	3.26	1.278
Q36	Consumers compare prices before purchasing eco-products	3.24	1.206
Q37*	Sustainability is less important than product price	3.31	1.242

**Reverse*

code

questions

Gender	Female	134
	Male	72
	Prefer not to say	6
Age group	18–24	59
	45–54	26
	25–34	75
	35–44	43
	55 and above	14
Education	Other	6
	Bachelor's degree	99
	Master's degree	49
	Secondary education	38
	Doctoral degree	1
	Proffesional education	22
Occupation	Employed	125
	Student	41
	Self-employed	27
	Unemployed	13
	Prefer not to say	9
	Retired	1
Income level	Upper-middle	31
	Middle	79
	Low	29
	Lower-middle	61

	Prefer not to say	5
	High	7

Appendix 3 Reliability Analysis Cronbach Alpha

Cronbach Alpha

$$\alpha = \left(\frac{k}{k-1} \right) \times \left(1 - \left(\frac{\sum \sigma^2_i}{\sigma^2_T} \right) \right)$$

Where:

α = Cronbach's Alpha coefficient

k = number of questionnaire items

$\sum \sigma^2_i$ = sum of individual item variances

σ^2_T = total scale variance

Reverse-coded items included in the analysis:

Q19, Q27, Q35, and Q37

Reverse-coding formula:

XR = 5-1;4-2;3-3; 2-4;1-5

Eco-Innovation practices by international firms
(x)

Reliability Statistics

Cronbach's Alpha	N of Items
,961	9

Consumer perception mechanism (M)

Reliability Statistics

Cronbach's Alpha	N of Items
,901	11

Consumer purchase decision prospect(Y)

Reliability Statistics

Cronbach's Alpha	N of Items
,836	7

Price

sensitivity

(O)

Reliability Statistics

Cronbach's Alpha	N of Items
,781	4

Overall

analytical

scale

reliability

test

Reliability Statistics

Cronbach's Alpha	N of Items
,934	31

Appendix 4 Demographic Group Comparison Tests

Independent Samples Test

		t-test for Equality of Means							
		t	df	Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
				One-Sided p	Two-Sided p			Lower	Upper
PurchaseDecision_Mean	Equal variances assumed	,878	204	,191	,381	,12432	,14161	-,15489	,40353
	Equal variances not assumed	,890	151,323	,187	,375	,12432	,13964	-,15157	,40021

Anova by age groups

ANOVA

PurchaseDecision_mean

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3,137	4	,784	,835	,504
Within Groups	194,502	207	,940		
Total	197,639	211			

Anova by Income groups

ANOVA

PurchaseDecision_mean

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1,210	5	,242	,254	,938
Within Groups	196,429	206	,954		
Total	197,639	211			

Anova by Education groups

ANOVA

PurchaseDecision_mean

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1,624	5	,325	,341	,887
Within Groups	196,015	206	,952		
Total	197,639	211			

Appendix 5 Correlations and Regression Analysis

Correlations

		EcolInnovation_ mean	ConsumerPerceptionM_ mean	PurchaseDecision_ mean	PriceSensitivity_ mean
EcolInnovation_mean	Pearson Correlation	1	,707	,697	-,080
	Sig. (2-tailed)		<,001	<,001	,248
	N	212	212	212	212
ConsumerPerceptionM_mean	Pearson Correlation	,707	1	,682	-,122
	Sig. (2-tailed)	<,001		<,001	,077
	N	212	212	212	212
PurchaseDecision_mean	Pearson Correlation	,697	,682	1	-,232
	Sig. (2-tailed)	<,001	<,001		<,001
	N	212	212	212	212
PriceSensitivity_mean	Pearson Correlation	-,080	-,122	-,232	1
	Sig. (2-tailed)	,248	,077	<,001	
	N	212	212	212	212

Regression

analysis

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	EcolInnovation_mean ^b	.	Enter

a. Dependent Variable:
ConsumerPerceptionM_mean

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,707 ^a	,499	,497	,61831

a. Predictors: (Constant), EcolInnovation_mean

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	80,030	1	80,030	209,335	<,001 ^b
	Residual	80,285	210	,382		
	Total	160,315	211			

a. Dependent Variable: ConsumerPerceptionM_mean

b. Predictors: (Constant), EcolInnovation_mean

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1,409	,159		8,858	<,001	1,096	1,723
	EcolInnovation_mean	,590	,041	,707	14,468	<,001	,509	,670

a. Dependent Variable: ConsumerPerceptionM_mean

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	,806	,209		3,853	<,001	,393	1,218
	ConsumerPerceptionM_mean	,757	,056	,682	13,513	<,001	,647	,868

a. Dependent Variable: PurchaseDecision_mean

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1,124	,179		6,274	<,001	,771	1,477
	EcolInnovation_mean	,646	,046	,697	14,075	<,001	,555	,736

a. Dependent Variable: PurchaseDecision_mean

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	4,199	,198		21,188	<,001	3,808	4,589
	PriceSensitivity_mean	-,198	,057	-,232	-3,450	<,001	-,311	-,085

a. Dependent Variable: PurchaseDecision_mean