From Laboratory to Luxury:
Exploring the Effectiveness of Sustainable Labelling and Advertising Appeals in Lab-Grown Diamond Advertising

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ABSTRACT

Diamonds have long been associated with a symbol of love due to extensive advertising campaigns. However, growing awareness of the environmental and ethical issues surrounding diamonds has led to an increased demand for sustainable and ethical alternatives such as lab-grown diamonds. This research explores the influence of sustainable labelling, advertising appeals, and gender on consumers' brand attitudes and purchase intentions towards lab-grown diamonds. Specifically, it examines the extent to which sustainable labelling (with vs. without) and advertising appeals (emotional vs. rational) in the lab-grown diamond advertisements affect consumers' brand attitude and purchase intentions. Additionally, it explores the moderating role of gender in this relationship. Guided by the Elaboration Likelihood Model, a 2x2 experimental survey was conducted, presenting participants with lab-grown diamond advertisements featuring either a sustainable label or no label, as well as emotional or rational advertising appeals. The sample consisted of 324 American participants, and the effects of sustainable labelling and advertising appeal on consumer responses were examined using four independent samples t-tests. A two-way ANOVA was employed to explore the moderating role of gender. Contrary to expectations, the results revealed non-significant effects for all hypotheses, indicating that sustainable labelling, advertising appeals, and gender did not significantly impact consumer brand attitudes or purchase intentions towards lab-grown diamonds. These findings suggest that effective advertising messages should consider a holistic approach, taking into account context-driven factors that influence consumer decision-making.

KEYWORDS: *Sustainable labelling, Advertising appeals, Lab-grown diamonds, Consumer attitudes, Purchase intention*

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1. Introduction

Diamonds have been associated with a symbol of love and luxury since the 19th century. Fueled by the expansion of capitalism, diamond corporations have established the widespread recognition for the carbon crystals as a representation of wealth, status and affection through decades of advertising campaigns (Epstein, 1982). From "A Diamond is Forever" (De Beers, n.d.) to "These rocks don't lose their shape; diamonds are a girl's best friend" (Monroe, 1953), the link between romance and diamonds has been so well attributed and reinforced that consumers all over the world consider diamonds psychologically and physically necessary for their engagements, anniversaries or other important occasions (Epstein, 1982). The belief that diamonds are a must-have for special occasions has led to a robust diamond jewellery market, with the industry being valued at USD 84 billion in 2021 (Linde et al., 2022). Surveys by Bain company in 2020 indicate that 60-70% of respondents in the US, China, and India view diamonds as a crucial part of a marriage engagement, while around 80% of consumers reported their plans to spend the same or more amount on diamond jewellery post-COVID than they would have prior to the pandemic (Linde et al., 2021).

However, hidden behind the dazzling gem lies a less glamorous industry. Despite the wide acceptance of diamonds, the industry has come under increasing criticism in recent years due to the negative environmental impact of diamond mining, ethical issues related to the sourcing of diamonds, and the association of the diamond trade with numerous conflicts and human rights abuses (Moraes et al., 2017; Osburg et al., 2020; Schulte & Paris, 2020; Smillie, 2010). The extraction of diamonds from natural resources often causes harmful environmental consequences, which include deforestation, soil erosion, air and water contamination, as well as ecological degradation (Lynch et al., 2022). Along with that, the diamond industry has a documented association with illicit pursuits, such as money laundering, organised crime, bribery and corruption, and funding of armed conflict (Moraes et al., 2017). There are also widespread concerns about the exploitation of diamond miners, particularly in the developing countries, as workers in these regions often work in hazardous conditions for low wages, and some of them are even below the legal age for employment (Moraes et al., 2017; Smillie, 2010).

The aforementioned concerns have given rise to the heightened scrutiny of the diamond industry, and have prompted demands for greater openness and accountability throughout the entire value chain (Lim et al., 2021). In response, diamond companies have started to embrace eco-friendly principles, although the extent to which each company puts

them into practice varies considerably (Moraes et al., 2017). In line with the trend of ethical and sustainable consumption, luxury businesses have incorporated their commitment of environmentalism into green appeals as a constituent element of their advertising and marketing strategies (Lim et al., 2021). The purpose of these green appeals is to foster favourable emotions and attitudes towards the luxury product in relation to sustainability. They achieve this by resonating with consumers' desire to make a positive impact on the environment and society through the use of their product (Lim et al., 2021). On the one hand, diamond businesses attempt to rationalise diamond consumption for the consumers by positioning it as an environmentally viable option because of its longevity (Lynch et al., 2022). They promote the enduring nature of diamonds which was then translated into diminished waste during the manufacturing process (Lynch et al., 2022). On the other hand, consumers are gaining greater awareness of the questionable ethical and sustainability practices in the luxury industry (Osburg et al., 2020). Their growing demand for luxury goods with a social conscience has driven businesses to look for more ethical alternatives. Arising from this demand, lab-grown diamonds exhibit equivalent chemical composition, physical characteristics, and optical properties to natural diamonds, but at a considerably lower cost (Jing, 2022). The key advantage of lab-grown diamonds lies in their production process, which takes place in a controlled laboratory environment, therefore eliminating the need of the displacement of communities and the destruction of natural habitats, checking the boxes for both sustainability and ethicality (Keech et al., 2020).

Recent research has explored various factors that impact consumer responses towards sustainable and ethical luxury products, including the efficacy of green advertising appeals in stimulating acceptance of such products through the promotion on social media (Lim et al., 2021). Even though lab-grown diamonds present a cost-effective alternative to mined diamonds without sacrificing its quality, there is limited research on the effectiveness of advertising in communicating the green commitments of lab-grown diamonds as a sustainable and ethical luxury product to the consumers. Studying this can contribute to the advancement of the broader fields in eco-conscious consumption, green marketing strategies, and understanding consumer preferences by uncovering deeper insights into the mechanisms and motivations that influence consumer attitudes and purchase intentions. This gap in the research highlights the need for a more in-depth exploration of the role of advertising in shaping consumer behaviour towards sustainable and ethical luxury consumption, particularly within the context of lab-grown diamonds. The present study aims to fill this gap by exploring the influence of green appeals in advertising on consumer responses, based on

the environmental and ethical superiority of lab-grown diamonds and the potential impact on consumer preferences for sustainable and responsible products. Guided by the Elaboration Likelihood Model (ELM; Petty & Cacioppo, 1986), which illustrates the involved cognitive processes when interpreting the persuasive messages, this study aims to investigate the impact of sustainable labelling and advertising appeals on consumer reactions in lab-grown diamond advertisements.

Moreover, there is inadequate research on how to effectively communicate the unique appeals of lab-grown diamonds to consumers. Therefore, this study also aims to examine the efficacy of advertising appeals, namely emotional and rational appeals, in communicating the sustainability and ethicality of lab-grown diamonds. By comparing the effects of these appeals, the study seeks to evaluate the effectiveness of advertising messages and determine their impact on consumer attitudes and behaviour towards lab-grown diamonds.

In addition, gender has been recognised as a well-established moderating variable in consumer behaviour research, especially in terms of consumer attitudes and purchase intentions (Ajitha & Sivakumar, 2019; Gundala et al., 2022; Sreen et al., 2018). Previous research has shown that men and women have different values and orientations towards luxury goods (Kim, 2020), which potentially result in varying responses to the diverse ways in which advertisements are represented (Keshari & Jain, 2016; Rahman et al., 2020). Within the scope of this study, it is crucial to consider the potential moderating role of gender in influencing the effects of advertising appeals on consumer behaviour. By incorporating gender into this study, this study attempts to achieve a more holistic understanding of the influence of green appeals in advertising on consumer responses towards lab-grown diamonds.

Therefore, this research focuses on exploring the effectiveness of sustainable labelling and appeal types in lab-grown diamond advertising and how they affect consumers' brand attitude and purchase intentions, using gender as a moderating variable. Accordingly, the following research question (RQ) was addressed in this thesis:

> RQ: *To what extent do sustainable labelling (with vs. without) and advertising appeals (emotional vs. rational) in the lab-grown diamond advertisements affect consumers' brand attitude and purchase intentions? What is the moderating role of gender in the proposed relationship?*

This study has significant academic relevance in multiple aspects. Firstly, this study is guided by Elaboration Likelihood Model (ELM; Petty & Cacioppo, 1986), which enables the examination of the fundamental mechanisms of advertising and contributes to the theoretical understanding of how consumers process persuasive messages and make decisions regarding sustainable and ethical luxury products. By exploring green appeals and sustainable labelling on consumer attitudes and behaviour, in combination of the central and peripheral routes of processing, this research provides valuable insights into the involved underlying cognitive processes and decision-making mechanisms. Specifically, the study endeavours to explore sustainable labelling and how advertising appeals influence consumers' brand attitude and purchase intentions in the lab-grown diamond industry. Therefore, it contributes to the existing body of knowledge in the field of consumer behaviour and green appeals in shaping consumer behaviour in a responsible and sustainable manner.

Moreover, this study contributes to the literature on advertising effectiveness by evaluating the efficacy of emotional and rational appeals in communicating the sustainability and ethicality of lab-grown diamonds. Through a comparison of the effects of these appeals, the research sheds light on the effective advertising strategies of influencing consumer attitudes and preferences in the context of sustainable and ethical luxury products.

Additionally, this study contributes to the broader field of consumer behaviour by exploring the role of gender as a moderating variable in the impact of green advertising appeals. Previous research has indicated that gender was likely to play a role in how consumers respond to eco-friendly and sustainable cues in advertising (Hasnain et al., 2020). This study aims to further build upon this body of research by exploring this relationship between gender and advertising appeals in the context of lab-grown diamonds, which is a relatively new but rapidly growing segment in the luxury goods market.

In terms of practical relevance, this study offers insights into the effective marketing and advertising strategies by examining the impact of sustainable labelling and green appeals in advertising on consumer attitudes and purchase intentions. The understanding of whether emotional or rational type of appeals resonates most with consumers can help companies tailor their green messaging to effectively communicate their sustainable and ethical commitments of lab-grown diamonds to consumers. This knowledge is beneficial in the creation of compelling marketing initiatives or strategies that align with consumers' values and preferences (Septianto et al., 2021).

Furthermore, companies in the lab-grown diamond industry can leverage findings from this research to strengthen their brand positioning and differentiate themselves in the market. When businesses can effectively communicate their green commitments through advertising, they have the opportunity to enhance their reputation as sustainable and ethical luxury merchants. As a result, they can attract environmentally conscious consumers and foster positive brand perceptions, which can potentially lead to increased brand loyalty and purchase intentions.

Finally, by focusing on effectively communicating the sustainability aspects of lab-grown diamonds through advertising, this study contributes to the consumer education and awareness. Through providing consumers with information regarding the advantages of selecting lab-grown diamonds rather than mined diamonds, the research enhances understanding of the favourable environmental and ethical aspects linked to these products. This knowledge can encourage consumers to make more informed and responsible purchasing decisions, and promote sustainable consumption practices.

This study is structured as follows: chapter two presents the theoretical framework that reviews the relevant literature and conceptualises the key concepts. The framework begins by analysing green advertising appeals in the luxury industry, and exploring the relationship between luxury and sustainability. Subsequently, the study discusses consumer attitudes towards lab-grown diamonds, with a particular emphasis on the factors influencing sustainable and ethical luxury consumption. The focus then shifts to examining sustainable labelling and advertising appeals, and their impact on consumer behaviour. The chapter continues by introducing the theoretical guideline of Elaboration Likelihood Model (ELM) and its fundamental explanation in consumer behaviour. Finally, the role of gender as a moderating variable is discussed. The relevant hypotheses are presented in the corresponding sections and a hypothesised conceptual model that depicts the overall research is provided. Chapter three outlines the methodology employed in the study. This includes a detailed description of the research design, stimulus material, sampling, operationalisation of variables, experimental procedure, considerations for validity and reliability, and data analysis. Chapter four presents the results of the study. Following that, chapter five offers a comprehensive analysis of these findings in relation to the existing literature, research objectives, and theoretical and societal implications. Lastly, chapter six presents a concluding section including a summary of the study, limitations of the research, and recommendations for future studies.

2. Theoretical framework

2.1 Green advertising appeals in the luxury sector

The growing recognition of global concerns such as climate change and the loss of biodiversity have stimulated many luxury brands to present their businesses greener (Kunz et al., 2020). This commitment is partly reflected in the creation of environmentally responsible products, which involve the adoption of optimal practice standards, the implementation of strengthened third-party certification processes, and the promotion of supply chain initiatives that aim to enhance workers' welfare (Moraes et al., 2017). Moreover, sustainability is actively incorporated as an integral component of their marketing communication strategy (Meijers et al., 2019). Green appeals in advertising refer to marketing messages that highlight the environmental benefits or sustainability features of a product or service (Meijers et al., 2019). Keywords such as "organic", "recyclable", "carbon neutral", "biodegradable", "energy efficient", and "zero waste" are intended to attract customers who are interested in making more environmentally responsible decisions (Enerva, 2022). Prior studies have investigated how luxury enterprises utilise green appeals to draw in consumers who desire products that align with their environmentally conscious values and convictions (Septianto et al., 2021). By sharing practices such as using recyclable materials, highlighting timeless designs to reduce waste, and participating in charitable endeavours to promote a sustainable brand reputation (Septianto et al., 2021), companies emphasise that purchasing their product helps contribute to a more eco-friendly society. These strategies not only foster an environmentally friendly reputation, but also boost consumers' self-perception as planet-conscious individuals (Lim et al., 2021).

Even though businesses expect that incorporating green appeals into their advertising campaigns would elicit a positive response from consumers, this may not always be the case (Lim et al., 2021). This is partly because of the intricate and multifaceted relationship between luxury and sustainability. Many argue that luxury and sustainability are inherently incompatible (Amatulli et al., 2021; Keech et al., 2020; Kim et al., 2022; Lim et al., 2021). As sustainability is linked to prosocial values that promote the well-being of others, such as benevolence, temperance, and humanism, whereas luxury is attributed with values that prioritise personal pleasure and indulgence (Achabou et al., 2020; Jain, 2019; Lim et al., 2021). In view of this, despite luxury businesses making efforts to communicate their sustainability commitments through green appeals in advertising, some consumers may resist such messages due to concerns that making products more sustainable could compromise their quality (Lim et al., 2021). These consumers view sustainability and quality as mutually

exclusive, and this perception can negatively impact their attitudes towards green advertising (Lim et al., 2021). Therefore, luxury products that are marketed as sustainable may be seen as less luxurious and less valuable to consumers (Keech et al., 2020), undermining their intention to purchase (Amatulli et al., 2021). On the contrary, some claim that consumer evaluations on luxury goods can be favourably influenced by appropriate sustainability messaging (Lim et al., 2021), such as displaying independent certifications (Osburg et al., 2022), or emphasising that the luxury products are manufactured with consideration for society or the environment (Amatulli et al., 2021).

Overall, luxury brands strive to convey the idea of a peaceful coexistence between sustainability and luxury without reneging on any of the brand promises, such as indulgence, exclusivity, or prestige (Kunz et al., 2020). Luxury brands' sustainability communications are more about enhancing the perceived value than sharing facts about the actual efforts of these environmental claims (Kunz et al., 2020). To illustrate, luxury items are touted as being more ecologically friendly due to its quality and longevity, even if there is no evidence to prove they are truly green (Amatulli et al., 2017, as cited in Lynch et al., 2022). In this sense, green appeals in advertising have evolved into an ideological tool that ostensibly encourages sustainable and ethical consumption but in reality justifies excessive consumption (Lynch et al., 2022). The problem of greenwashing, which refers to the practice of misleading customers regarding the environmental benefits of a product or service (Lim et al., 2021), has become pervasive and affected consumers' trust substantially. As green appeals in advertising have become more widespread, consumer mistrust regarding these claims has increased for the use of greenwashing tactics that exploit the growing trend of eco-conscious consumerism (Lim et al., 2021). As indicated by Lim et al. (2021), unclear and overstated environmental promises can erode consumer trust in green advertising appeals. If companies cannot credibly exhibit or execute their green efforts, consumers may become more doubtful about the merits of the eco-friendly products and react negatively to the green claims, which can eventually undermine a company's reputation (Lim et al., 2021).

2.2 Consumer attitude towards lab-grown diamonds

The continued rise in environmentally-conscious and ethically sourced products among consumers has sped up the progress of eco-friendly alternatives, including lab-grown products. Several recent studies have examined consumers' perception and acceptance of lab-grown products, with the most widely discussed being lab-grown meats (de Oliveira Padilha et al., 2022; Keech et al., 2020; Van Loo et al., 2020). Keech et al. (2020) noted that

consumers hold more negative attitudes towards lab-grown meats as they were considered more unnatural. Similarly, when Van Loo et al. (2020) compared customer preferences for farm-raised meat and plant-based meat with those for lab-grown meat, they discovered that lab-grown meat was the least preferred of the goods considered. Although environmental friendliness was supposed to be one of the primary selling points of lab-grown meats, the findings from de Oliveira Padilha et al. (2022) suggested that this pro-social benefit was not significant enough in persuading consumers to choose the product.

Although lab-grown diamond and lab-grown meat are both created in a laboratory setting, they have vastly distinct attributes as products. Lab-grown food products fall under the category of Fast Moving Consumer Goods (FMCGs), which consumers purchase with health, nutrition and safety attributes in mind (de Oliveira Padilha et al., 2022), whereas lab-grown diamonds are seen as socially conscious luxury items designed to satisfy consumers' desire for quality, individuality, self-gratification, and social status (Keech et al., 2020; Osburg et al., 2020). That is to say, insights of greener consumption in FMCGs cannot be simply applied to the luxury industry (Osburg et al., 2020). It is critical to address sustainability within the broader consumer segments due to the rise of the middle class globally and the quick expansion of consumer markets for non-essential goods (Osburg et al., 2020). To date, the research on lab-grown diamonds remains insufficiently explored and lies primarily in comparing the consumer attitudes toward lab-grown and natural diamonds. For example, in an experimental study conducted by Keech et al. (2020), participants were randomly assigned to either the condition with mined diamonds or the one with lab-grown diamonds, and were asked to evaluate the perceived value of the diamond in their assigned condition. The results showed that lab-grown diamonds were perceived as less precious and desirable than conventionally mined diamonds (Keech et al., 2020). However, the purchase of lab-grown diamonds were seen as a display of stronger social responsibility than that of natural diamonds, which is a noteworthy advantage of these gems (Keech et al., 2020). These findings imply that the perceived reduced value of lab-grown diamonds may be assuaged by emphasising their ethical attributes when promoting them in the market (Keech et al., 2020).

2.3 Factors influencing sustainable and ethical luxury consumption

Luxury is defined as non-essential items that are used to evoke feelings of wealth, exclusivity, or indulgence (Jain, 2019). Osburg et al. (2020) stated that luxury consumption refers to acquiring products that confer status upon their possessor based on their aesthetic

appeal, rather than on their practical utility. Aligned with these definitions, lab-grown diamonds are classified as luxury commodities given the qualities that differentiate them from day-to-day necessities, and the perceived status that they afford their owners..

Accordingly, sustainable and ethical luxury consumption is done in a way towards minimising harmful environmental and societal impacts (Moraes et al., 2017). This could involve avoiding products created through exploitative labour practices, preferring brands that employ sustainable materials and manufacturing techniques, or opting to purchase from businesses that place a high value on transparency and sustainability in their business processes (Moraes et al., 2017). Lab-grown diamonds are considered sustainable and ethical luxury in that they are identical in composition to mined diamonds, but are created without the ramifications associated with drilling and excavating of mines and questionable work conditions. In particular, lab-grown diamonds do not require the same levels of natural sources and resultant carbon emissions as traditional mining (Lynch et al., 2022). According to Australian Government and Geoscience Australia (n.d.), it takes 250 tonnes of ore to extract, process and refine a carat natural diamond from its rough form into a polished gemstone that is ready for use in jewellery or other applications.

To successfully advocate ethical and sustainable consumption and gain wider market reach among consumers, it is essential to comprehend the factors that either facilitate or hinder such consumption (Islam et al., 2022). Recent studies have shed light on the various factors that affect the sustainable and ethical consumption of luxury goods. Specifically, studies by Islam et al. (2022) and Keech et al. (2020) have highlighted the impact of materialism on sustainable luxury consumption. In their experimental studies, Islam et al. (2022) found that individuals with high levels of materialism are less inclined to participate in ethical and sustainable luxury consumption, since they prioritise material possessions over prosocial values. Moreover, those who are conscious of their social image also exhibit a negative influence on sustainable luxury consumption, which is mediated by materialism. Keech et al.'s (2020) research supports this finding by suggesting that the effectiveness of a product ethicality strategy varies based on the consumer's level of materialism. They further indicate that promoting the ethicality of a product is a more successful strategy for consumers with low materialistic values, even though it may have less impact or negative influence for those with high materialistic values. The study also found that the perception of social status is a significant factor in shaping the attitudes of low materialism consumers towards lab-grown products. In addition, Kim et al. (2022) found that individuals with lower childhood socio-economic status tend to prefer sustainable luxury brands over non-

sustainable ones due to the perceived importance of community cooperation. However, this preference weakens when individuals are faced with non-luxury brands or high-threat environments, such as the COVID-19 pandemic. Therefore, the authors suggested that sustainable luxury consumption strategies should take into account both individual differences and situational factors (Kim et al., 2022).

On the other hand, Janssen et al.'s (2014) field experiment shows that the impact of scarcity on consumers' perception of luxury products and corporate social responsibility (CSR) varies depending on the ephemerality of the luxury product. The study revealed that consumers are more likely to identify with luxury brands' green efforts if the product exhibits durability as opposed to transience qualities (Janssen et al., 2014; Osburg et al., 2020). It also supports the view that luxury goods' attributes such as longevity, scarcity, uniqueness, timeless design are compatible with ethical and sustainable consumption (Osburg et al., 2020). This finding is consistent with the principle that luxury items should be of exceptional quality and endurance, which also align with characteristics of sustainable jewellery consumption (Moraes et al., 2017; Osburg et al., 2020).

As Moraes et al. (2017) have pointed out, luxury product selection is still heavily influenced by prestige, price, and perceived quality, while sustainability and ethicality are often considered as secondary factors. This poses a challenge for the promotion of sustainable and ethical luxury choices, as consumers tend to prioritise the central characteristics of a product, like its brand and quality, over peripheral attributes, including its ethical features (Moraes et al., 2017). However, even when consumers prioritise other factors over sustainability, they still take into account the green aspects of products when making purchasing decisions (Moraes et al., 2017). A survey conducted by McKinsey & Company in April 2020 involved more than 2,000 consumers in the UK and Germany. The findings showed that 67% of the respondents considered the utilisation of sustainable materials to be a significant consideration when making purchasing decisions, while 63% believed that a brand's focus on sustainability held equal importance (Granskog et al., 2020). In this light, even though green appeals in advertising may appear profit-seeking, they could still serve as a reason for consumers to develop a more favourable perception of these products (Moraes et al., 2017). Collectively, these findings indicate the opportunity to introduce ethical and sustainable considerations into the fine jewellery market, but success in this regard would depend on understanding consumer preferences and situational factors that may affect purchasing decisions.

2.4 Sustainable labelling

The sustainability label is evidence that a company complies with the environmental and social sustainability standards and is intended to increase its transparency and enable consumers to assess the veracity of a company's green claims (Gosselt et al., 2019). These labels are generally classified into two categories: internal and external. Internal sustainable labels are created by a company on its own accord, whereas external sustainable labels are awarded by third-party organisations based on established sustainability benchmarks (Gosselt et al., 2019).

Prior studies have assessed companies' motivations in using sustainable labels (Valor et al., 2014), consumers' perception on sustainable labels (Otto et al., 2021), and the influence of label credibility on consumer behaviour (Kumar et al., 2021). However, the effectiveness of labels in the context of sustainable and ethical luxury consumption has not been extensively explored. As consumers are exposed to various sources of information when making purchase decisions, certificates are deemed to be an effective way to demonstrate recognised signals of exceptional value and ethical conduct (Osburg, 2022). In this regard, external labels issued by independent third parties are especially significant in regards to how consumers perceive the ethicality and sustainability of luxury items (Osburg, 2022). This is also supported by Hasnain et al. (2020) that the presence of eco-labels has been observed to have a positive influence on consumers' green buying intentions. In addition, De Beers Group (2022) reported that 36% of women and 39% of Gen Z explicitly look up a brand's ethical credentials before purchasing diamonds. 40% of women indicate that they would be more likely to buy a diamond if they were clearly informed of its ethical sourcing conditions (De Beers Group, 2022). This percentage even rose to 50% for Gen Z customers (De Beers Group, 2022). Moraes et al. (2017) also points out that the use of third-party certification may help to lessen the uncertainty brought on by information asymmetry in the jewellery industry.

As a result, credible and trustworthy market indicators such as third-party certifications with reference to a company's sustainable and ethical luxury attributes are likely to reinforce positive consumer attitudes and as such increase purchase intentions (Hasnain et al., 2020; Osburg et al., 2022). Based on previous literature, this study predicted that a third-party certified sustainable label in the lab-grown diamond market would generate more favourable brand attitudes and purchase intentions among consumers. Therefore, the first hypotheses are formulated as below.

H1a: *A third party certified sustainable label in a lab-grown diamond advertisement will result in more positive consumers' brand attitudes, compared to an advertisement without such a label.*

H1b: *A third party certified sustainable label in a lab-grown diamond advertisement will result in higher consumer purchase intention, compared to an advertisement without such a label.*

This study investigates how sustainable labelling in advertisements that display a company's certified environmental commitment can affect consumers' attitudes and behavioural intentions in the lab-grown diamond market.

2.5 Emotional and rational appeals

Advertising is a complex phenomenon that employs a variety of techniques to influence consumer behaviour. Among these techniques, emotional and rational appeals are of most significance as they provide explanations for the emotional and utilitarian benefits of products or services, and play a key role in driving consumer interpretation of advertising messages (Gong & Cummins, 2020; Hornik et al., 2017; Keshari & Jain, 2016). Emotional appeals, also known as transformational or experiential appeals, are designed to evoke feelings that encourage consumers' willingness to purchase (Gong & Cummins, 2020; Keshari & Jain, 2016). Studies have indicated that emotional appeals are especially potent for products or services that are connected to hedonic experiences or lifestyle preferences (Chang et al., 2021). In contrast, rational appeals, also termed logical or informational appeals, use facts, statistics, and logical arguments to articulate product attributes and establish credibility with consumers (Gong & Cummins, 2020; Keshari & Jain, 2016).

The research on both emotional and rational appeals has attracted much scholarly attention in the past due to their potential to elicit different consumer reactions and affect their behavioural intentions (Hornik et al., 2017; Keshari & Jain, 2016). While some scholars argue that emotional advertising appeals possess greater persuasive power (Hornik et al., 2017), others contend that rational advertising appeals are more impactful (Keshari & Jain, 2016; Petty & Cacioppo, 1986). In the context of luxury goods consumption, advertisers often use extensive claims to elicit an emotional response that transcends rationality (Moraes et al., 2017). The emotional appeals seek to stimulate either positive or negative feelings that significantly impact consumers' decision-making process, and are employed to seize the attention from the audience and to forge a meaningful association between the product and its consumers (Keshari & Jain, 2016). Past studies have identified a multitude of emotions

explored in advertising, including pride (Septianto et al., 2021), fear (Shen & Kim, 2022), guilt (Singh et al., 2020), disgust (Powell et al., 2019), threat (Choi & So, 2019), gratitude (Septianto et al., 2021), and passion (Dahlen et al., 2020), which were found to exhibit varying degrees of influence on consumer responses. Research has shown that emotional appeals create stronger long-term memories than rational appeals, and it is reinforced by the fact that emotional advertising appeals are often conveyed through storytelling that enhances the connection between emotions and brand memories (Young et al., 2019).

On the other hand, rational appeals focus on the functional attributes of a product, such as its performance, efficiency, or value (Keshari & Jain, 2016). According to the ELM, the efficacy of persuasive messages relies on the extent of cognitive processing that the audience dedicates to the content of the message (Petty & Cacioppo, 1986). When the audience demonstrates high motivation and cognitive capacity for deep message processing, rational appeals tend to be more persuasive compared to emotional appeals as they offer a greater abundance of informative and logical arguments. The model proposes two processes that determine the degree of persuasive message effectiveness: the central route and the peripheral route (Petty & Cacioppo, 1986). The central route to persuasion is triggered when consumers carefully consider relevant facts and analyse the argumentative components of the message, whereas the peripheral route is activated when consumers process the information with less cognitive effort and pay attention to superficial cues rather than evidence. The ELM highlights the significance of message cues in influencing message processing by categorising them as central vs. peripheral clues (Segev & Fernandes, 2022). In light of this, when consumers are persuaded by emotional stimuli in advertisements with emotional appeals, the process follows a peripheral route which is opposed to the rational cognitive process that takes a central route in advertising with rational appeals (Keshari & Jain, 2016). Rational appeals are expected to assist consumers in establishing assessment standards to weigh the benefits and risks of acquiring the branded item (Keshari & Jain, 2016).

Despite broad debate about which type of appeal prevails over the other, the efficacy of emotional and rational appeals varies from context and remains inconclusive in the field of advertising for ethical and sustainable jewellery consumption. In particular, the advertising effectiveness of using rational and emotional appeals in the emerging field of the lab-grown diamond sector has not yet been examined. It is important to understand the consumer responses that different advertising appeals can elicit in developing effective marketing campaigns in this respect. This study seeks to fill this gap by applying both

emotional and rational appeals and comparing the effectiveness outcome and to extend the literature in the context of green appeals in advertising for ethical and sustainable jewellery consumption.

As prior research suggests that emotional appeals are more often used to elicit the emotional response and create a long-term memory (Moraes et al., 2017; Young et al., 2019), and rational appeals are more effective in influencing customers' purchasing decisions when they need to engage in high-level cognitive evaluation and use rational criteria (Keshari & Jain, 2016). When presented the advertisement on Instagram, the information provided such as third-party certification and advertising appeals would likely trigger the peripheral route rather than central route as limited information can be provided via an Instagram post. Therefore, building on the ELM frameworks, and consistent with prior research, it was hypothesised that emotional appeals in lab-grown diamond advertisements would result in more favourable brand attitudes. Additionally, positive brand attitudes are likely to increase the likelihood of consumers purchasing from the brand. Therefore, the second two hypotheses were stated below:

H2a: *An emotional description in lab-grown diamond advertisement is more positively associated with consumer attitudes, compared to a rational ads description.*

H2b: *An emotional description in lab-grown diamond advertisement is more positively associated with consumer purchase intention, compared to a rational ads description.*

2.6 Gender as a moderating variable

In today's increasingly competitive marketplace, advertisers are using a variety of creative styles and appeals in their advertisements in an attempt to stand out from a marketplace with many rivals and fierce competition, and differences between individuals are becoming a fundamental criterion in designing advertising appeals (Keshari & Jain, 2016). It has been widely discussed that gender plays a role in influencing consumer response to advertising stimuli (Keshari & Jain, 2016; Sreen et al., 2018). As a result, gender can provide additional insights into the design and implementation of more effective marketing communications campaigns.

Research has provided evidence that when exposed to both appeals, women are more likely to respond to emotional appeals than men (Hornik et al., 2017). According to Friestad and Wright (1994), men and women differ in their responses to emotional appeals in advertising, with women being more likely to be influenced by emotional appeals than men.

Similarly, Bower and Forgas (2001) have observed gender differences and found that women reported greater emotional reactions to persuasive messages than men. Eisend et al. (2014) also discovered that women are more susceptible to the influence of emotion of humor in stereotyped advertising compared to men. These findings are in line with ELM described in Chapter 2.5, which suggests that emotional appeals primarily affect individuals through peripheral processing. Given that women tend to be more susceptible to peripheral cues such as emotions, it follows that emotional appeals are more likely to impact their brand attitudes, leading to stronger purchase intentions (Petty & Cacioppo, 1986). On the other hand, studies have demonstrated that generally speaking, men tend to lean more towards cognitive rationality and logical thinking as significant elements in their decision-making process compared to women (Latu et al., 2013). Therefore, it can be argued that men might be more susceptible to the influence of rational appeals, which present logical arguments and provide evidence to substantiate a brand or product's value, benefits, and features. This implies that the association between rational appeals and consumer responses is likely to be stronger for men than for women.

In addition, the present study's selection is in line with earlier empirical research as it adhered to the findings by Hornik et al. (2017), which involve examining only moderators that are theoretically pertinent, furnish a substantial number of effect sizes to test associations, and are significant to advertisers. Gender was identified as an influential variable in one of the conceptual moderators (Hornik et al., 2017).

To further expand upon existing research of advertising appeals, this study examines gender as the moderator and aims to explore its moderating role on consumer responses to the emotional and rational advertising appeals. The third hypotheses were proposed as follows.

H3a: *Gender moderates the effect of emotional appeals on consumers' brand attitudes, such that the association between emotional appeals and consumers' brand attitudes is stronger for women than for men.*

H3b: *Gender moderates the effect of rational appeals on consumers' brand attitudes, such that the association between rational appeals and consumers' brand attitudes is stronger for men than for women.*

H3c: *Gender moderates the effect of emotional appeals on consumers' purchase intentions, such that the association between emotional appeals and consumers' purchase intentions is stronger for women than for men.*

H3d: *Gender moderates the effect of rational appeals on consumers' purchase intentions, such that the association between rational appeals and consumers' purchase intention is stronger for men than for women.*

2.7 Conceptual model

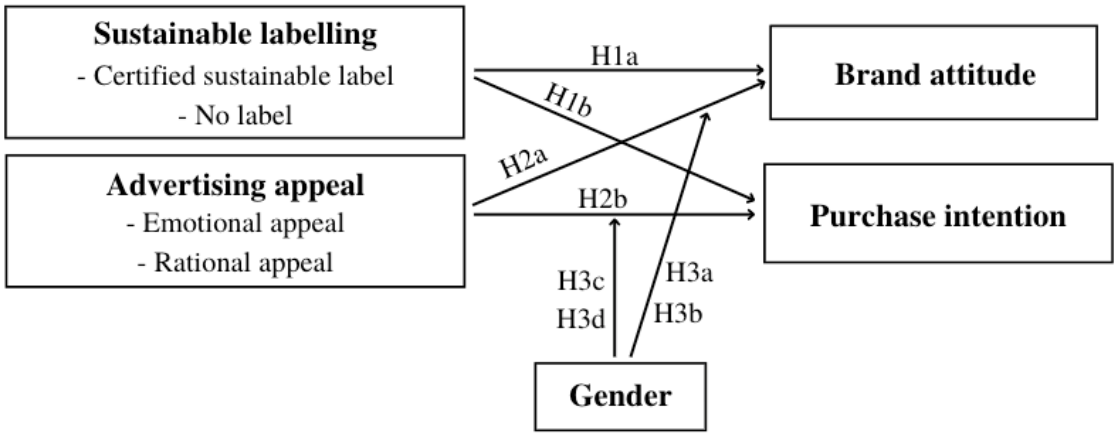

Figure 2.7.1 Hypothesised conceptual model of this study

3. Methodology

Drawing upon the conceptual model constructed in the theoretical framework, it was hypothesised that the existence of sustainable labels and different types of advertising appeals have a discernible influence on brand attitudes and purchase intentions. To test these hypotheses, the chapter explains the experimental design, methodology, variable operationalisation, the validity and reliability of the research, and data analysis methods.

3.1 Research design

The present study utilised a quantitative research method, which has been chosen due to its ability to predict outcomes and to establish a systematic approach for testing the theory-based hypotheses (Fallon, 2016). This method enables derivation of conclusions from the numerical quantification of statistical data, therefore it can facilitate the examination of the relationships between variables (Fallon, 2016). Given that the variables studied in this research can be precisely measured and statistically analysed to assess their impacts and investigate causal relationships between variables, quantitative research was deemed the appropriate approach (Fallon, 2016).

Specifically, this study adopted an experimental approach in the form of an online survey. The reason for using experiments in this study was based on their ability to mimic real decision-making scenarios and allow for more accurate testing of causal hypotheses, relative to other research methods in social sciences (Neuman, 2014). This is attributed to the fact that experiments can be purposefully structured to satisfy the requirements for causality, which require demonstrating a causal link, ruling out other possible causes, and affirming the sequence of independent variables preceding dependent ones (Neuman, 2014). Employing an experimental design enables the study to intentionally manipulate relevant variables while controlling for factors that did not have a causal relationship, which is critical for accurately testing causal hypotheses (Neuman, 2014). Studies conducted earlier in the area of sustainable luxury consumption have utilised the method of scenario-based experiment for the purpose of manipulating variables and examining hypotheses (Islam et al., 2022). Additionally, surveys are frequently used to collect information on people's beliefs, expectations, and behaviours (Fallon, 2016), making it a well-suited format for the study's focus on consumers' brand attitudes and purchase intentions towards lab-grown diamond advertisements. Therefore, the combination of experimental design and an online survey enables the study to simulate real decision-making scenarios while gathering accurate data to test hypotheses. Since this study sought to investigate how consumer attitudes and purchase

intentions were affected by sustainable labelling and appeal types in lab-grown diamond advertising, an experiment in the form of an online survey was considered the most suitable for the study.

To examine how sustainable labelling and advertising appeals influence consumer attitudes and behavioural intentions, an experiment was devised following a 2 (sustainable labelling: certified sustainable label vs. no label) x 2 (advertising appeals: emotional vs. rational) between-subjects design. All participants in the between-subjects design were randomly exposed to one of the four treatment conditions (see table 3.1.1 for the overview). A between-subjects design was preferred over a within-subjects design to reduce the risk of participants knowingly or unknowingly responding to questions based on the researcher's expectations (Huck, 2011).

This experimental design implemented random assignment of conditions to secure fairness in selecting conditions and minimise systematic variation across cases, as it did not take into account respondents' individual preferences during the selection process (Neuman, 2014).

Table 3.1.1 Overview of the four experimental conditions

Sustainable labelling (label vs. no label) x Advertising appeal (emotional vs. rational)	
C1: Certified sustainable label, emotional	C3: No label, emotional
C2: Certified sustainable label, rational	C4: No label, rational

3.2 Stimulus material

The experimental stimuli were designed to mimic real online advertisements on Instagram, featuring a fictitious diamond brand called LabLuxe. Instagram was chosen as the platform for this research as it has more than 2 billion active monthly users, providing a vast and diverse audience that can be reached through advertising (Newberry, 2023). Since it is primarily a visual focused platform, it was deemed optimal for displaying sustainable labels and lab-grown diamonds in a visually striking manner.

Identical images were used across all four experiment conditions. The image features a round-cut lab-grown diamond emitting a sparkling light amidst brown soil. The diamond was surrounded by some plantes. This image was chosen as it conveys a symbolic meaning of protecting the environment since the lab-grown diamond's origin indicates a sustainable alternative to mining. Additionally, the image's juxtaposition of the diamond's luminosity

against the earthy tones of the soil emphasises the need to preserve our planet's resources. The surrounding plants further enhance this message, evoking a sense of eco-friendliness and organic vitality.

To manipulate sustainable labelling, a real third-party certified sustainable label of lab-grown diamonds displaying "Certified Sustainability Rated Diamonds - SCS-007 · SCS Global Services" was placed on the top right corner of the image for the certified labelling conditions. This label was collected from SCS Global Services, a recognised third-party organisation in assessing diamonds and determining sustainability ratings (SCS Global Services, n.d.). The non-sustainable label conditions were not accompanied by any label display.

In line with previous literature and building on Darley & Smith's (1995) categorisation of advertising claims, emotional advertising appeals convey feelings, personal perceptions, and intangible attributes such as aesthetic style and exclusivity; descriptions that focus on facts and tangible benefits are considered rational appeals. Therefore, to manipulate the advertising appeal types, the emotional ads featured a caption that read: "Let your love story sparkle and thrive with diamonds that reflect not just your affection, but also your conscious choice to protect the world we share. Choose lab-grown diamonds, free from conflict and the damaging impact from mining, grown with love and care for the planet and each other." This description endeavours to delve into the emotive import of diamonds and interconnect it with the sustainable and ethical attributes of lab-grown diamonds. It additionally accentuates the agelessness of the commodity and the rapport shared between the consumer and the product. For the rational ads conditions, the description emphasised on the rational cost-benefit side of lab-grown diamonds, with the description stating: "Why spend over $15,000 on a 1 carat mined diamond when you can get the same beauty and quality for just $2,000? Choose lab-grown diamonds, same luxury at a fraction of the cost." This description highlights the stark contrast of pricing between mined diamonds and lab-grown ones. Through the emphasis on the considerable price differential, the advertisement engenders interest from cost-conscious consumers who seek alternatives to conventional diamonds. Furthermore, the ad's use of the phrase "same beauty and quality" positions lab-grown diamonds as a superlative option that rivals mined diamonds in terms of quality. This assertion is corroborated by the fact that lab-grown diamonds exhibit identical chemical composition, physical characteristics, and optical attributes to naturally mined diamonds (Jing, 2022).

To enable any differences in the results to be attributed to the causal relationship being tested, all the information in the four conditions were kept the same in all respects except for the experimental stimuli in each randomised group. This ensured that accurate and fair evaluation were made among the four conditions.

3.3 Sampling

3.3.1 Age group

To ensure the validity and reliability of the experimental results, all individuals selected to participate in the experiment were required to be a minimum of 18 years of age, with no upper age limit. This criterion was based on the legal requirement for informed consent, which generally includes individuals who are at least 18 years old (Canter et al., 1994). Furthermore, adults who are at least 18 years of age have greater cognitive control and impulse regulation than adolescents, as they have typically been exposed to basic education and life experience, which may facilitate their capacity to comprehend the nature and purpose of the research and provide accurate feedback (Steinberg, 2010). As a result, recruiting participants who are at least 18 years of age would significantly enhance the reliability and validity of the experimental findings.

While an age limit was imposed, no upper age limit was required. This decision was informed by the understanding that older participants may still identify as diamond consumers and be influenced by advertising, and thus should not be excluded from the sample pool. Therefore, excluding them from the sample pool would not be appropriate. By not imposing an upper age limit, the sample pool becomes more representative and diverse, which ultimately increases the reliability and validity of the experimental results.

3.3.2 Pre-test

The pretest sample was recruited via convenience sampling on March 15th, 2023, using the crowdsourcing website Prolific. Participants were recruited within the same age range as the study sample, starting from 18 years of age and above. A total of 20 respondents were collected, with a mean age of 43.60 years (SD = 16.68). The sample had an even gender distribution, with 50% (n = 10) identifying as female, 40% (n = 8) identifying as male, and 10% (n = 2) identifying as non-binary or third gender. The study mainly focused on participants from the United States, with 90% (n = 18) of respondents coming from the United States.

To determine whether or not there is a significant association between the presence or absence of the sustainable label, a paired sample chi-square was conducted. The result indicated a significant relationship between the two variables, X^2 (1, 20) = 20.00, $p < .001$. Similarly, the frequencies of advertising appeals were also found to be significant, X^2 (1, 20) = 16.36, $p < .001$. The significant results obtained from the paired sample chi-square tests indicate that the pre-test phase of the study has been successfully conducted and that the research design and measurement instruments are suitable for capturing the desired variables and provide a solid foundation for proceeding to the real experimental data collection phase.

3.3.3 Data collection and sample

To minimise potential biases stemming from the researcher's personal network, typical convenience sampling methods were not adopted for the final experiment. Although such methods offer ease, affordability, and expediency in data acquisition, their use often leads to the generation of skewed and unrepresentative samples that may notably impact the consequent findings (Neuman, 2014). Therefore, to enhance the inclusivity and adequacy of the sample, the data was obtained using a randomised selection method through an online platform that enables crowd participation. Crowdsourcing platforms are online platforms that solicit the services of virtual workers to assist with various tasks, such as research, software testing, and product reviews. In exchange for their contributions, these workers are typically offered a modest financial compensation (Estellés-Arolas, et al., 2012).

Earlier studies have indicated that crowdsourcing presents an economical and swift approach to recruiting a significant number of participants, alongside granting access to a more diverse pool of individuals who may better reflect the wider general population (Palan & Schitter, 2018). For this study, Prolific (www.prolific.ac) was chosen from a range of crowdsourcing options available online, including platforms like Mechanical Turk (MTurk) and CrowdFlower. According to a recent study by Peer et al. (2021), Prolific was found to provide higher data quality on measures of attention, comprehension, honesty, and reliability compared to MTurk and CrowdFlower. Palan and Schitter (2018) also highlighted Prolific's ability to pre-screen participants based on previously used questions, which serves to circumvent issues associated with identifying suitable candidates for research participation. This feature is particularly noteworthy given that alternative online platforms may lack adequate mechanisms for identifying individuals who meet specific study criteria, which can result in dishonest participation (Palan & Schitter, 2018). To address this concern, Prolific collects participant characteristics such as gender and age during the registration process and

offers supplementary questions to increase eligibility for various research studies (Palan & Schitter, 2018). By incentivising truthful responses, this approach reinforces participant honesty and discourages participants from distorting responses to fit future study criteria (Palan & Schitter, 2018). Therefore, Prolific was selected as the preferred crowdsourcing platform for this study. In this study, each participant received 0.20 pounds as an incentive for completing the experimental survey.

Table 3.3.3.1 Overview of the distribution of respondents across the four conditions

Sustainable labelling (label vs. no label) x Advertising appeal (emotional vs. rational)	
C1: Certified sustainable label, emotional (*n* = 82)	C3: No label, emotional (*n* = 80)
C2: Certified sustainable label, rational (*n* = 80)	C4: No label, rational (*n* = 82)

Participants were recruited on March 15th 2023 through the online platform Prolific to take part in the study. The study successfully obtained 328 respondents, surpassing the minimum requirement of 200 participants. After data cleaning, the resulting sample for final statistical analyses consisted of *N* = 324 participants. Table 3.3.3.1 displays the distribution of respondents across the four conditions based on the final sample. Of the respondents, 49.1% (*n* = 159) self-identified as male, 48.8% (*n* = 158) as female, 1.5% (*n* = 5) as non-binary, and 0.6% (*n* = 2) chose not to disclose their gender. The age range of participants varied from 18 to 78 years, with an average age of 39.8 years (*SD* = 14.31). As the study was conducted in English and targeted individuals in the United States, all respondents were American. In terms of ethnicity, 77.2% (*n* = 250) identified as White, 7.1% (*n* = 23) identified as Asian, 6.8% (*n* = 22) identified as Black or African American, 5.9% (*n* = 19) identified as Hispanic or Latino, and 3.1% (*n* = 10) selected "other" as their ethnicity. Among the respondents, 54.2% (*n* = 195) had obtained a degree, with a Bachelor's degree being the most common (42%, *n* = 136). 11.4% (*n* = 37) had earned a Master's degree, 3.7% (*n* = 12) had obtained a professional degree, and 3.1% (*n* = 10) had obtained a PhD. A total of 13% (*n* = 42) of respondents were high school graduates, and 26.2% (*n* = 85) had attended college but did not receive a degree. In terms of prior diamond purchasing history, 54.3% (*n* = 176) had previously bought any diamond jewellery in the past, while 45.7% (*n* = 148) did not have any experience of buying diamond jewellery. With regard to their previous

knowledge on lab-grown diamonds, assessed on a scale ranging from 1 (no knowledge) to 7 (a great deal of knowledge), the largest percentage, 22.2% (n = 72), reported having no knowledge on lab-grown diamonds. On average, the respondents had a mean knowledge score of M = 3.07 (SD = 1.59).

3.4 Operationalisation

3.4.1 Brand attitude and purchase intention

Consumer attitude was measured by using a pre-validated 7-point semantic differential scale with five adjective pairs that included bad–good, unattractive–attractive, negative–positive, uninteresting–interesting, and unlikeable–likeableTo measure the brand attitude of consumers, a well-established and pre-validated 7-point semantic differential scale was adopted. The scale comprises five pairs of adjectives, namely bad–good, unattractive–attractive, negative–positive, uninteresting–interesting, and unlikeable–likeable (Cronbach's α = 0.98; van Reijmersdal et al., 2015), which have been widely adapted in prior research studies related to brand perception and marketing, particularly in regards to assessing consumer attitudes towards products and services (Gahlot Sarkar et al., 2019; Matthes & Naderer, 2016; Spears & Singh, 2004; van Reijmersdal et al., 2016). By using this scale, the measurement of consumer attitude is consistent and comparable across studies, which increases the reliability and generalisability of the findings.

Purchase intention was measured using a widely-adopted four-item scale adapted from Wojdynski et al. (2016). The four items are "I would like to try a lab-grown diamond ring from LabLuxe," "I intent to buy a lab-grown diamond ring from LabLuxe," "I want to buy a lab-grown diamond ring from LabLuxe," "I will look for a LabLuxe lab-grown diamond ring in a store." (Cronbach's α = 0.84). Respondents were instructed to indicate their level of agreement with the statements on a scale from 1 = strongly disagree to 7 = strongly agree, with 1 indicating that the statement does not apply to them at all and 7 indicating that the statement applies to them completely.

3.4.2 Manipulation checks

Manipulation checks were carried out to validate the proper measurement and manipulation of relevant variables in each condition, therefore lowering risks to the study's internal validity (Neuman, 2014). Manipulation checks are recognised as a valuable tool for establishing internal validity and ensuring the accuracy of research studies (Reichardt, 2002).

o confirm the successful manipulation of the dependent variables, two manipulation checks were administered following the questions pertaining to the dependent variable.

For the manipulation of advertising appeals, participants were asked if they noticed the price of the lab-grown diamond in the ad. In the conditions with an emotional advertising appeal, the ads description focused on the emotional benefits associated with the sustainable and ethical aspects of lab-grown diamonds. In contrast, the rational appeal conditions mentioned the price of lab-grown diamonds in comparison to natural diamonds.

For the manipulation of sustainable labelling, participants were asked if they noticed the sustainability certification of a bird in the top right corner of the advertisement. In the conditions with a sustainability label, the certification was placed in the top right-hand corner of the advertising image. Conversely, in the conditions without a sustainability label, the certification was not shown to the participants.

A number of control variables were measured to ensure that any observed effects of sustainable labels and advertising appeals were not the result of variations between the experimental groups. Prior knowledge of lab-grown diamonds and diamond buying history were asked as multiple choice questions. Demographic questions such as age, gender, nationality, education level, marriage status and annual income were also asked at the end of the survey.

The first manipulation check aimed to test whether participants noticed the emotional or rational appeal of the advertisement by asking them whether they noticed the price of the lab-grown diamond featured in the ad, while the second manipulation check aimed to verify whether participants in the sustainable label condition noticed the certified sustainable label shown on the top right of the advertising image. Out of the total sample size of 324, 151 out of 160 participants in the rational ads condition and 162 out of 164 in the emotional ads condition passed the manipulation check for the advertising appeal variable (See Table 3.4.2.1 for the distribution of the advertising appeal manipulation check question). For the sustainable label variable, 137 out of 161 participants in the sustainable label condition and 128 out of 162 participants in the condition without the sustainable label passed the manipulation check (See Table 3.4.2.2 for the distribution of the sustainable labelling manipulation check question). The observed Chi-square test value in the results table indicated a statistically significant impact for both manipulation checks, with a value of $\chi^2(1, 324) = 133.20$, $p < .001$ for the sustainable label manipulation check and $\chi^2(1, 324) = 281.99$, $p < .001$ for the advertising appeal manipulation check. These results suggest that both variables were successfully manipulated with a high level of certainty (95%). Overall, the

results of the manipulation checks provide evidence that the stimuli used in the experiment were successfully manipulated and that any observed effects on the dependent variables can be attributed to the experimental conditions.

Table 3.4.2.1 Distribution of the manipulation check question - Did you notice the price of the lab-grown diamond in the ad?

	Yes	No	Total
Emotional	2	162	164
Rational	151	9	160
Total	153	171	324

Table 3.4.2.2 Distribution of the manipulation check question - Did you notice a sustainability certification in the top right corner of the ad with a bird on it?

	Yes	No	Total
Sustainable label	137	24	161
No label	34	128	162
Total	171	152	323

3.5 Experimental procedure

The experimental research was conducted online using Qualtrics, an online surveying software tool commonly used in academic research. The formal experiment commenced with a brief study introduction and a confidentiality statement that assured participants of the secure and confidential handling of their personal information throughout the entire duration of the experiment. Upon giving their informed consent to participate in the study and providing their Prolific ID, the participants were then randomly assigned by the system to one of four experimental conditions. Random assignment helped to reduce bias and ensure that the sample size for each condition was not consistently different (Neuman, 2014). The study participants were then presented with one of four Instagram advertisements as their stimulus material. To ensure their full attention to the ad, an attention reminder was presented immediately before the ad. The reminder instructed the participants to carefully view the image and text and answer the questions that followed. Following the advertisement, participants were asked a series of questions designed to measure their brand

attitude and purchase intention, as well as manipulation check questions. They were then asked whether they were Instagram users, whether they had a history of purchasing diamonds, and their level of knowledge about lab-grown diamonds. Finally, the study concluded by collecting demographic information from the participants. This study aimed to recruit a minimum of 50 people for each condition, for a total of 200 participants across four experimental conditions.

3.6 Validity and reliability

A number of measures were taken to enhance the validity and reliability of the study. As Neuman (2014) explains, validity is concerned with the extent to which a study accurately represents reality. To reduce the potential threats from confounding factors that could influence experimental results, this study implemented several approaches. Firstly, pre-validated and widely-adopted scales were used to measure the concepts of interest. These scales were designed with multiple items to provide a more comprehensive view of the constructs being measured, and can help ensure the measurement accuracy of the different aspects of the concepts (Neuman, 2014). This was intended to increase the validity of the measurement by reducing the potential for error in any one item. Secondly, control variables, including manipulation check questions, were also included to ensure that the independent variables were manipulated as intended and had the intended effect on the dependent variables. Thirdly, to minimise selection bias, randomisation was implemented on Qualtrics to randomly allocate participants to one of the four experimental conditions. Fourthly, a pretest was executed to identify any conceivable issues with the study design or stimuli and make necessary adjustments before proceeding with the final experiment. This ensured the perceptibility of the stimuli presented in the experiment and excluded alternative explanations for the relationship between the independent and dependent variables. The study's external validity was improved by utilising the crowdsourcing platform Prolific to recruit participants from a wide and diverse range of individuals.

Within quantitative research, reliability pertains to the degree of consistency and steadfastness in the outcomes generated by a measurement or assessment instrument across diverse circumstances and over an extended duration (Roberts & Priest, 2006). In essence, it denotes the extent to which a measure is capable of consistently and reliably evaluating the construct for which it was created. Data cleaning was carried out to exclude any outliers or samples that were deemed erroneous from the dataset.

The internal consistency reliability of the brand attitude and purchase intention scales in this study was assessed using Cronbach's alpha coefficient in SPSS. Results indicated a very high level of internal consistency reliability for both scales, with a Cronbach's alpha coefficient of $\alpha = .962$ for the brand attitude scale ($M = 5.72$, $SD = 1.27$) and $\alpha = .936$ for the purchase intention scale ($M = 4.65$, $SD = 1.45$). These values surpassed the commonly employed threshold of .7, indicating satisfactory internal consistency reliability. This suggests that the items within each scale demonstrate strong correlation and effectively measure the underlying construct. The robust internal consistency reliability affirms the credibility of the brand attitude and purchase intention scales as reliable and valid measures of their respective constructs.

3.7 Data analysis

The data gathered on Qualtrics was imported into SPSS, a statistical programme utilised for data analysis. To improve the internal validity of the study, the data was subjected to a cleansing process that involved removing incomplete and inaccurate samples. Additionally, as per Prolific's guidelines, each submission had to be manually reviewed by the researcher to ensure that the suggested survey completion time was reasonable before compensating eligible participants. As a result, participants who completed the experiment too quickly were identified and excluded from the sample.

Validation of manipulation checks and scale reliability were carried out through several analyses. Descriptive statistics, including means, standard deviations, and frequencies, were employed to examine the associations among the variables investigated in the study. Additionally, correlations were examined to assess the relationships between the variables. To test the hypotheses outlined in the research questions, a series of statistical tests were conducted using SPSS. For H1a and H1b, a two-group independent samples t-test was used to compare the means of consumers' brand attitudes and purchase intentions between the sustainable and non-sustainable labelling conditions. Similarly, for H2a and H2b, a two-group independent samples t-test was conducted to compare the means of consumers' brand attitudes and purchase intentions between the rational and emotional advertising appeals. For H3a, H3b, H3c, and H3d, a two-way ANOVA were conducted. Specifically, two-way ANOVA analyses were run with the dependent variable (brand attitude and purchase intention respectively) and fixed factors (emotional or rational appeals x gender). Overall, these statistical tests were used to determine the extent to which sustainable labelling and

advertising appeals in lab-grown diamond advertisements affect consumers' brand attitude and purchase intentions.

4. Results

Chapter four presents the results of the study. This section consists of the analytical phase of the research, i.e., the statistical techniques used to process data collected during the experiment in order to test the hypotheses presented in chapter two. The chapter contains a series of analytical procedures, including hypothesis testing and a summary of the analytical outcomes.

4.1 Hypothesis testing

In this section, the results of three hypotheses proposed in the conceptual model (refer to the graph in section 2.7) are discussed. The first hypothesis (H1) aimed to test the relationship between the presence of a certified sustainable label (independent variable) and brand attitude (dependent variable 1), and purchase intention (dependent variable 2). The second hypothesis (H2) tested the relationship between advertising appeal (independent variable) and brand attitude (dependent variable 1), and purchase intention (dependent variable 2). Additionally, H3 explored whether the relationship in H2 was moderated by gender. The first two hypotheses were analysed using independent-samples t-tests in SPSS, with statistical significance defined as $p < .05$. The third hypotheses were analysed using a two-way ANOVA in SPSS, where $p < .05$ would be deemed statistically significant.

4.1.1 Hypothesis 1a: The impact of sustainable label on brand attitude

Based on hypothesis 1a, the study aimed to investigate whether the inclusion of a certified sustainable label in an advertisement for lab-grown diamonds would lead to more favourable brand attitudes among consumers. An independenqt-samples t-test was conducted in SPSS to compare the means of brand attitudes of two groups: one with a certified sustainable label in the advertisement and the other without.

Prior to conducting the statistical analysis, the condition variable was recoded to create two distinct groups: one representing ads with a certified sustainable label (coded as 1) and the other without a certified sustainable label (coded as 0). The assumption of equal variances was evaluated using Levene's test, which indicated no statistically significant variation between the groups ($p = .865$). Consequently, the assumption of equal variances was satisfied, allowing for the subsequent analysis using independent-samples t test. The outcomes of the independent-samples t-test indicated the absence of a statistical significance in brand attitude ($t(322) = .166$, $p = .868$) between the group exposed to advertisements with a certified sustainable label ($M = 5.71$, $SD = 1.30$) and the group without such a label ($M =$

5.73, *SD* = 1.25). Therefore, hypothesis 1a, which posited that the presence of a certified sustainable label would have a significant impact on consumers' brand attitudes towards lab-grown diamonds, was rejected. This finding suggest that the presence of a certified sustainable label does not have a substantial effect on consumers' brand attitudes towards lab-grown diamonds.

4.1.2 Hypothesis 1b: The impact of sustainable label on purchase intention

The next hypothesis (H1b) aimed to examine whether featuring a third-party certified sustainable label in a lab-grown diamond advertisement would lead to an increase in consumers' purchase intention, as compared to an advertisement without the sustainable label. An independent-samples t-test was conducted in SPSS, using the presence of a certified sustainable label as the grouping variable and purchase intention as the dependent variable. Prior to the analysis, Levene's test was performed to assess the assumption of equal variances, revealing no significant difference in variance between the groups (p = .782). The results of the subsequent independent-samples t test revealed no significant difference in purchase intention ($t(322)$ = .938, p = .349) between the group with a certified sustainable label (M = 4.57, SD = 1.46) and the group without a certified sustainable label (M = 4.72, SD = 1.44). These findings suggest that the inclusion of a certified sustainable label in an advertisement does not significantly affect consumers' purchase intentions towards lab-grown diamonds, contradicting hypothesis 1b.

4.1.3 Hypothesis 2a: The impact of advertising appeal on brand attitude

Hypothesis 2a investigated whether the use of an emotional appeal in an advertisement for lab-grown diamonds had a more positive effect on consumers' brand attitudes compared to a rational appeal. An independent-samples t-test was conducted in SPSS, with the type of ad copy used (i.e. rational or emotional appeal) as the grouping variable and brand attitude as the test variable. Before conducting the analysis, the assumption of equal variances was assessed through Levene's test, revealing no significant disparity in variance between the groups (p = .913). The t-test results showed no statistically significant difference in brand attitude ($t(322)$ = 1.074, p = .284) between the group exposed to rational appeal (M = 5.64, SD = 1.29) and the group exposed to emotional appeal (M = 5.79, SD = 1.25). These findings indicate that the type of ad copy used in the advertisement does not significantly influence consumers' brand attitudes towards lab-grown diamonds, and as a result, hypothesis 2a is not supported.

4.1.4 Hypothesis 2b: The impact of advertising appeal on purchase intention

Hypothesis 2b aimed to examine whether the emotional type of ad copy used had a more positive impact on consumers' purchase intentions towards lab-grown diamonds compared to a rational ad copy. An independent-samples t-test was conducted in SPSS with the type of ad copy as the grouping variable and purchase intention as the test variable. Before proceeding with the analysis, Levene's test was conducted to check whether there was a significant difference in variances between the groups. The test revealed that there was no significant variation in variance across the groups (p = .594). The independent-samples t test result showed no statistically significant difference (t(322) = .302, p = .763) in purchase intention between the group exposed to rational appeal (M = 4.62, SD = 1.41) and the group exposed to emotional appeal (M = 4.67, SD = 1.50). These findings suggest that the type of ad copy used in the advertisement does not significantly affect consumers' purchase intentions towards lab-grown diamonds, and therefore, hypothesis 2b is rejected.

4.1.5 Hypotheses 3a & 3b: Gender as a moderator on brand attitudes

To examine the moderating role of gender in the effect of emotional and rational appeals on consumers' brand attitudes, a two-way ANOVA was conducted. The analysis explored whether women would exhibit more favorable brand attitudes than men in response to emotional appeals (H3a) and whether men would exhibit more favorable attitudes than women in response to rational appeals (H3b). The dependent variable in this analysis was brand attitude, while the fixed factors were the type of appeal (emotional or rational) and gender. The results of the two-way ANOVA revealed a marginal significance level for the interaction between appeal type and gender, p = .068, F(3, 316) = .985. Although the p-value did not reach conventional levels of statistical significance, it suggests a tendency or trend towards significance. These findings indicate that there are differences in brand attitudes based on gender, but the strength of these differences may be influenced by the type of appeal used in the lab-grown diamond advertisements.

Further examination of the means revealed patterns which can be further discussed. When exposed to rational advertising appeals, women exhibited a higher mean brand attitude score (M = 5.94, SD = 1.07) compared to men (M = 5.40, SD = 1.43). This suggests that women generally have more favorable brand attitudes when presented with rational appeals. On the other hand, women maintained a higher average brand attitude score even when exposed to emotional advertising appeals (M = 5.88, SD = 1.15) compared to men (M = 5.67,

SD = 1.37). These results indicate that women displayed higher brand attitudes towards the lab-grown diamonds compared to their male counterparts in general.

4.1.6 Hypotheses 3c & 3d: Gender as a moderator on purchase intention

A two-way ANOVA was conducted to examine the moderating role of gender on the relationship between advertising appeals (emotional or rational) and purchase intention. Hypotheses 3c and 3d proposed that women would exhibit more favorable purchase intentions than men in response to emotional appeals, while men would show more favorable intentions than women in response to rational appeals. However, the test results indicated that $p = .524$, $F(3, 316) = 1.016$, indicating that gender did not have a significant moderating effect on purchase intention.

When examining the mean average purchase intention, male participants exposed to the emotional appeal displayed a mean average of $M = 4.66$ ($SD = 1.71$), which was comparable to the mean average of $M = 4.65$ ($SD = 1.31$) observed among female participants. In contrast, when exposed to the rational appeal, the mean average purchase intention for male participants was $M = 4.44$ ($SD = 1.34$), while for female participants, it was $M = 4.84$ ($SD = 1.41$). These findings suggest that there was no substantial difference in purchase intention between genders, irrespective of the type of advertising appeal employed.

The lack of statistical significance in the p-value indicates that gender does not hold a moderating influence on the association between advertising appeals and purchase intention. These findings indicate that both male and female participants had similar level of purchase intention in response to emotional and rational appeals. Further research is needed to enhance the comprehension of the variables that impact the purchase intention in the context of lab-grown diamond advertisements.

5. Discussion

5.1 Summary of findings

The outcome regarding H1 in this study, which examined the impact of a third-party certified sustainable label on consumers' brand attitudes or purchase intention, contradicted the findings found in the previous literature. Past studies have suggested that eco-label or other green efforts indicators, such as third-party independent certifications that could vouch for a company's sustainable and ethical qualities, can have a positive influence on consumer attitudes and increase their purchase intention (Hasnain et al., 2020; Moraes et al., 2017; Osburg et al., 2022). However, the present study did not find enough support for H1. These results suggest that there might be other factors at play that could explain the lack of significant effects. It is possible that consumer behaviour in the diamond industry may be driven more by their pre-established values and beliefs (Jain, 2020; Zhang & Zhao, 2019) rather than being significantly influenced by the presence or absence of a sustainable label. In other words, the inclusion of a certified sustainable label in lab-grown diamond advertisements may not substantially alter consumers' existing perceptions or preferences, especially when it comes to luxury products such as diamonds.

The relationships between advertising appeal and brand attitudes or purchase intention (H2) also deviated from previous literature findings. Prior research indicated that emotional appeals were considered more effective in the luxury industry as they have the potential to elicit an emotional response that generally go beyond rationality (Moraes et al., 2017). However, this study did not find sufficient evidence for H2, indicating that the effectiveness of either emotional or rational appeals in influencing consumers' brand attitudes or purchase intentions in the context of lab-grown diamonds was not significant. These results point out that consumers' attitudes and purchasing motivation in the diamond industry may have other considerations that go beyond the influence of emotional or rational appeals. Factors such as brand attachment (Faheem et al., 2021; Jeon, 2022), perceived value (Akkaya, 2021), brand trust (Husain et al., 2022), and product origin (Bao et al., 2021) are worth exploring in the specific context of lab-grown diamonds.

The findings regarding gender as a moderating variable in the relationship between advertising appeals and brand attitudes or purchase intention (H3) also differed from previous literature. Prior studies stated that female have a greater inclination than male to be more reactive to emotional appeals (Bower & Forgas, 2001; Hornik et al., 2017), whereas male generally show a higher inclination towards cognitive rationality compared to female (Latu et al., 2013) when it comes to processing information. However, the findings of the

study did not offer enough support for H3, challenging the notion that gender plays a significant role in shaping consumers' responses to emotional and rational appeals in the context of lab-grown diamonds. These results imply that variables besides the demographics aspect of gender may have a more prominent influence on consumers' brand attitudes and purchase intentions in the lab-grown diamond industry. Individual variances, personal beliefs (Jain, 2019), or prior knowledge and experiences (Petty & Cacioppo, 1986) may play a more substantial role in shaping how consumer respond to advertising appeals in this context. The link between advertising appeals and consumer attitudes or intents might be moderated by other variables or psychological characteristics such as personal values, previous knowledge on lab-grown diamonds, and environmental consciousness (Jain, 2019; Kim & Lee, 2023). To effectively engage and interact with their target audience, brands should adopt a holistic approach to their marketing strategy, taking into account a variety of elements beyond gender.

There are several reasons which can potentially account for all hypothesised non-significant results in this study. One explanation can be understood through the lens of Elaboration Likelihood Model (ELM), which suggests that individuals have two cognitive processes when evaluating persuasive messages: central and peripheral routes (Petty & Cacioppo, 1986). In the context of this study, it was found that individuals are more likely to rely on their personal preferences and the information they obtain on their own when making decisions of buying diamonds. This indicates that consumers are likely to be influenced more by their own prior knowledge, experience and individual differences than by external factors such as the presence of sustainability labels or the different type of advertising appeals. According to Jain (2019), various factors have been identified as influencing sustainable luxury consumption. These factors include culture, personal values, social values, and economic value, and are found to play a significant role in shaping consumers' attitudes and behaviors towards sustainable luxury products (Jain, 2019).

In addition, the study's findings might have been affected by the limited and trivial information presented to the experiment participants. The ELM suggests that when individuals encounter persuasive messages that provide inadequate or superficial information, they may not engage in deep cognitive processing, which might lead to weaker effects on attitudes and purchase intentions (Petty & Cacioppo, 1986). The reliance on trivial information in the study may have limited the participants' engagement and subsequent impact on their attitudes and purchase intentions. Moreover, the individual variations in preferences for diamonds can further complicate the categorisation of participants based on

solely external factors, which makes it challenging to observe any significant effects as consumer preferences for diamonds can be influenced by various subjective factors beyond independent sustainability labels or advertising appeals. Furthermore, the sample being limited to Americans could introduce a cultural bias towards lab-grown diamonds, considering that consumer preferences for diamonds can vary across different cultural contexts.

5.2 Theoretical implications

This study contributes to the current body of literature in sustainable and ethical luxury consumption by exploring the effects of sustainable labelling, advertising appeals, gender on consumer behaviour. Specifically, it investigates the influence of these factors on brand attitudes and purchase intentions in the lab-grown diamond industry. Despite the non-significant results observed in this study, there is substantial value in focusing on the sustainable and ethical aspects of lab-grown diamond advertising.

Firstly, the present study underscores the relevance of incorporating sustainability and ethical considerations into the exploration of advertising effectiveness and consumer behaviour, which has broader implications for the fields of sustainable luxury marketing and consumer behaviour (Athwal et al., 2019; Pai et al., 2022). This acknowledgement further responds to the rising consciousness as well as consumer desire for luxury products that are produced and advocated in a sustainable and ethical manner (Osburg et al., 2020). By centering on the sustainability and ethical-oriented factors, this study adds to the ongoing discourse regarding the role of environmental responsibility and ethical considerations in shaping consumer decision-making processes. The emphasis on sustainability-related messages is aligned with the changing consumer mindset that assess the ecological and societal consequence of products (Pai et al., 2022). Moreover, investigation of sustainability and ethics within the specific context of lab-grown diamond advertising further adds to the existing literature on sustainable luxury consumption. This expansion broadens the scope of research beyond the traditional product categories such as luxury fashion products (Jain, 2020), and explores the potential influence of green advertising appeals in a unique and growing market segment of lab-grown diamonds. Through this exploration, the study allows for a more comprehensive understanding of how sustainability considerations impact consumer responses in various industries.

Secondly, as this study was guided by ELM, it allows for the investigation of the underlying cognitive processes and decision-making mechanisms involved behind

advertising and contributes to the theoretical comprehension of how consumers evaluate persuasive messages and make choices regarding sustainable and ethical luxury products. The non-significant relationships between sustainable labelling, advertising appeals and consumer responses can be interpreted within the framework of the ELM, which illustrated that the persuasiveness of messages and subsequent attitude formation and behaviuor change depend on the level of elaboration or cognitive processing individuals engage in when evaluating the message content (Petty & Cacioppo, 1986). In the context of this study, the findings can be interpreted from the perspective of ELM in that only the limited and trivial information were presented in the study, which may have resulted in participants being less involved in central processing, as they relied more on their personal preferences and individual variations in forming brand attitudes and purchase intentions (Petty & Cacioppo, 1986). When individuals are faced with messages that provide limited or superficial information, they are more likely to rely on peripheral cues, such as personal preferences or individual characteristics, in their decision-making processes (Petty & Cacioppo, 1986), which in turn suggests that the information provided in the lab-grown diamond advertisements may not have been sufficiently compelling or engaging to elicit deep cognitive processing among participants. As a result, consumer responses to sustainable labeling and advertising appeals in the study of lab-grown diamond advertisement may have been more influenced by individual belief rather than the specific content of the messages. These findings underscore the importance of considering individual factors and the level of information processing when seeking to understand how consumers react to advertising appeals related to sustainability and ethicality (Sreen et al., 2018).

Moreover, the findings contribute to addressing gaps in the existing literature by shedding light on the nuanced nature of the influence of sustainable labelling and advertising appeals on consumer behaviour. It extends the existing understanding of green advertising messages (Meijers et al., 2019; Septianto et al., 2021) and third-party independent certification (Hasnain et al., 2020; Osburg et al., 2022) in influencing consumer attitudes and purchase intentions. The study's results deviated from previous research which has reported significant effects of sustainable labelling (Kumar et al., 2021) and advertising appeals (Keshari & Jain, 2016) on consumer behaviour. This suggests that the effectiveness of these variables on consumer responses in the lab-grown diamond industry may be contingent on context-driven factors. The observed differences between the current study and previous research emphasise the need to consider other factors or characteristics in understanding the efficacy of green messages in advertising. Cultural biases and individual characteristics, for

example, may play a role in shaping consumer responses to sustainability-related messages (Brandão & Cupertino de Miranda, 2022; Sreen et al., 2018).

Additionally, this research expands the scope of consumer behaviour by examining the influence of gender as a moderating factor in the effects of green advertising appeals. The results of this study revealed that gender may not be a significant moderator in the relationship between advertising appeals and consumer responses, which challenges previous research that has identified gender as a potential influential factor in advertising effectiveness (Eisend et al., 2014; Hornik et al., 2017). As the current study only included sample from the United States, the absence of significant findings not only highlights the need for a more comprehensive investigation of the influence of gender on consumer decision-making using a larger and more diverse sample size, but also indicates that factors other than gender, such as social norms, individual differences, or cultural context are to be considered to have a substantial influence on consumer responses to advertising appeals (Jain, 2020; Sreen et al., 2018).

5.3 Societal implications

The findings of this study carry important societal implications, particularly in the fields of advertising, marketing, and corporate communication. By examining the effects of sustainable labelling, advertising appeals, and gender on consumer brand attitudes and purchase intentions, this research contributes to the understanding of how businesses can effectively tailor their green messages to consumers in the context of sustainable and ethical luxury consumption.

Firstly, the study provides valuable insights for companies to craft persuasive marketing initiatives or strategies that align with the values and preferences of consumers. As the study explored the complexities involved in shaping consumer attitudes and purchase intentions through green advertising appeals, it also underlines the necessity for marketers and advertisers to employ a more sophisticated approach when crafting advertising strategies within the lab-grown diamond industry. Understanding the specific factors that resonate with target consumers becomes fundamental for brands in the lab-grown diamond industry. As previously discussed, factors such as personal values, cultural bias, or prior knowledge should be taken into account in a holistic view to design persuasive messages in advertisements for sustainable luxury consumption. Brands should focus on effectively communicating key value propositions that are in line with consumers' priorities (Septianto et al., 2021). By catering to the growing consumer demand for sustainable and ethically

produced products, brands can help contribute to a more sustainable and responsible industry. This shift towards more environmentally friendly and socially conscious consumption patterns promotes sustainability and responsible practices in consumption as a whole.

Secondly, this study recognises the vital role that advertising plays in influencing consumer perceptions and how it may act as a catalyst for behaviour change in fostering a greener world (Pai et al., 2022). It adds to consumer education and awareness by emphasising the importance of effectively conveying the sustainable and ethical aspects of lab-grown diamonds through advertising. It is intended that well-designed messaging and appeals in advertisements could serve as powerful instruments to inform consumers about the advantages of choosing sustainable and ethical lab-grown diamonds, which can ultimately generate increased demand for these earth-friendly alternatives. By leveraging effective messaging and appeals, brands can have the potential to highlight the benefits of lab-grown diamonds in terms of reduced environmental consequence, ethical manufacturing approaches, and social responsibility (Moraes et al., 2017). Advertisements can raise awareness among consumers about the positive implications of choosing lab-grown diamonds versus traditional mined diamonds, leading to a shift in consumer preferences and behaviours (Lynch et al., 2022). When consumers show a greater interest in sustainable options, it motivates companies to allocate resources towards sustainable practices and innovation, which can result in beneficial environmental transformations.

From the corporate communication standpoint, the study stresses the significance of third-party independent sustainable certifications in promoting authenticity and trustworthiness. The inclusion of such certifications in advertisements not only signifies a brand's commitment to sustainability but also provide the assurance to consumers that their purchasing decisions are contributing to a more responsible world (Pai et al., 2022). While sustainable labelling did not yield significant effects on consumer responses in this study, it remains an essential tool for companies to communicate their commitment to sustainable practices. As findings suggest that consumers would rely more on their own personal knowledge and preferences when interpreting the persuasive green messages in lab-grown advertising, it reinstates the need further for companies to provide comprehensive and meaningful information to establish trust, transparency and credibility. Brands should strive to provide consumers with clear and reliable information about the production processes, origin, and environmental impact of lab-grown diamonds (Lynch et al., 2022; Moraes et al., 2017). This empowers consumers to make informed decisions aligned with their

sustainability preferences and therefore fosters a more socially responsible and environmentally aware consumer base.

6. Conclusion

6.1 Summary

The present study addresses the research gap regarding the impact of green appeals in advertising on consumer attitudes and purchase intentions, specifically focusing on lab-grown diamonds. Through the use of an experimental survey methodology, the study investigates the effectiveness of sustainable labelling and advertising appeals, including emotional and rational appeals, in communicating the sustainability and ethicality of lab-grown diamonds. Guided by the Elaboration Likelihood Model (Petty & Cacioppo, 1986), the study explores the central and peripheral routes of processing in influencing consumer responses to sustainable labelling and advertising appeals. Additionally, the study considers gender as a moderating variable to provide a more comprehensive understanding of how green appeals could affect consumer attitudes and purchase intention towards lab-grown diamonds.

To accomplish this, participants in the study was exposed to lab-grown diamond advertisements of a fictitious brand on Instagram featuring different types of advertising appeals, while their brand attitudes and purchase intentions were measured on a self-reported scale. However, the findings did not reveal significant effects for all hypotheses tested. This indicates that sustainable labelling, advertising appeals, and gender did not significantly influence consumer brand attitudes or purchase intentions towards lab-grown diamonds.

Overall, this study offers insight to the complex dynamics of consumer responses to green appeals in advertising and contributes to the broader literature on sustainable luxury, green advertising, ethical consumption and consumer behaviour. The findings highlight the need of conducting future research to explore the contextual factors that could shape consumer attitudes and behaviours in relation to sustainable products, taking into account the individual variations and the cultural influences.

6.2 Limitations

There are several limitations to this study. Firstly, the results observed across all hypotheses indicate that the variables under investigation did not yield significant an effect on consumer brand attitudes and purchase intentions. One potential explanation for this lack of significance is the limited sample size and its possible lack on generalisability. The study's sample consisted only of Americans, and therefore caution should be exercised in generalising the findings to a broader population. Future research should incorporate a broader and more representative sample to enhance the generalisability of the findings.

Secondly, the study employed an experimental survey methodology that presented participants with lab-grown diamond advertisements of a fictitious brand on Instagram featuring emotional and rational appeals. However, the effectiveness of advertising appeals can be influenced by various contextual factors, such as the reputation and brand image of the advertised product. In this study, participants' attachment and engagement to the brand may have been limited due to the use of a fictitious brand on Instagram, which could potentially influence their responses. To address this limitation, future research could consider using well-known and established brands, such as Tiffany or Cartier, to increase brand attachment and provide a more realistic and relatable experimental setting.

Thirdly, the study focused on a single platform (Instagram) for presenting the lab-grown diamond advertisements. However, consumers' responses to advertising can vary across different platforms. To capture a more comprehensive understanding of consumer attitudes and intentions, future research could include multiple platforms and media channels to examine potential variations in consumer responses.

Another limitation to consider is the potential influence of cultural factors on attitudes towards diamonds. The purchase and perception of diamonds are deeply embedded in cultural contexts such as the American culture, and cultural values could significantly shape consumer attitudes and preferences. The study's exclusive focus on the American cultural context could potentially restrict the validity of the findings. Future studies should consider the influence of culture on attitudes towards sustainable luxury products such as lab-grown diamonds by conducting comparative studies across different cultural settings. Through exploring the cultural nuances and variations, a more in-depth understanding of consumer attitudes towards lab-grown diamonds can be obtained, allowing for tailored marketing strategies that are sensitive to cultural preferences and norms.

6.3 Directions for future research

The present study has provided valuable insights into the connection between sustainable labelling, advertising appeals, gender and consumer perceptions within the context of lab-grown diamonds, which is an area that has received limited attention in the previous research. Although the findings did not yield significant results for the tested hypotheses, it is essential to recognise the potential for future research to advance the knowledge in the field of sustainable and ethical luxury consumption. This study offers the following opportunities to further explore and expand upon this topic.

Firstly, future research endeavors should strive to replicate and validate the findings of this study by employing larger and more diverse samples. By including participants from various cultural backgrounds, geographical regions, and demographic characteristics, researchers can expand the applicability of findings and develop a more holistic comprehension of the variables that can shape consumer reactions to sustainable labelling and advertising appeals concerning lab-grown diamonds. Considering that cultural factors and market characteristics may differ across regions, conducting cross-cultural studies within the context of lab-grown diamonds could offer valuable insights into the nuanced relationship between sustainable labelling and consumer behaviour.

Secondly, future research could explore the efficacy of diverse types of sustainability indications within lab-grown diamond advertisements. This may include examining the impact of various forms of sustainability claims or cues, such as textual statements or visual symbols on consumer attitudes and purchase intentions. Understanding the effects of different sustainability indications in lab-grown diamond advertisements can provide insight to how companies can successfully convey their sustainability-oriented messages and effectively engage consumers in this specific context (Agarwal & Kumar, 2021).

Moreover, employing mixed methodology approaches or varied experimental designs would possibly yield more profound results in the underlying mechanisms of advertising and establish causal relationships specific to lab-grown diamonds. Combining quantitative and qualitative research methods could offer a comprehensive understanding of consumers' attitudes, perceptions, and decision-making processes within this unique context. Additionally, experimental designs can help establish causality and shed light on the specific mechanisms through which sustainable labelling and advertising appeals may or may not affect consumer behaviour when it comes to lab-grown diamonds.

Lastly, future research should consider incorporating additional relevant factors that may influence consumer responses in relation to sustainable labelling and advertising appeals within the lab-grown diamond industry. Factors such as consumer knowledge and attitudes towards sustainability, perceived credibility of green advertising appeals, and the influence of social norms (Athwal et al., 2019; Jain, 2019; Sreen et al., 2018) could significantly shape consumer behaviour in this specific context. Exploring these factors in conjunction with sustainable labelling and advertising appeals within the lab-grown diamond industry would provide a deeper understanding of the topic and offer valuable insights for businesses looking to incorporate green advertising practices.

Given its unique and relatively unexplored context in the lab-grown diamond industry, continued research efforts will foster a deeper insight of effective advertising strategies that help align with consumer preferences within the lab-grown diamond market and promote sustainability in the society (Pai et al., 2022).

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Appendices

Appendix A – Online experiment including stimulus material

A.1 Introduction and informed consent

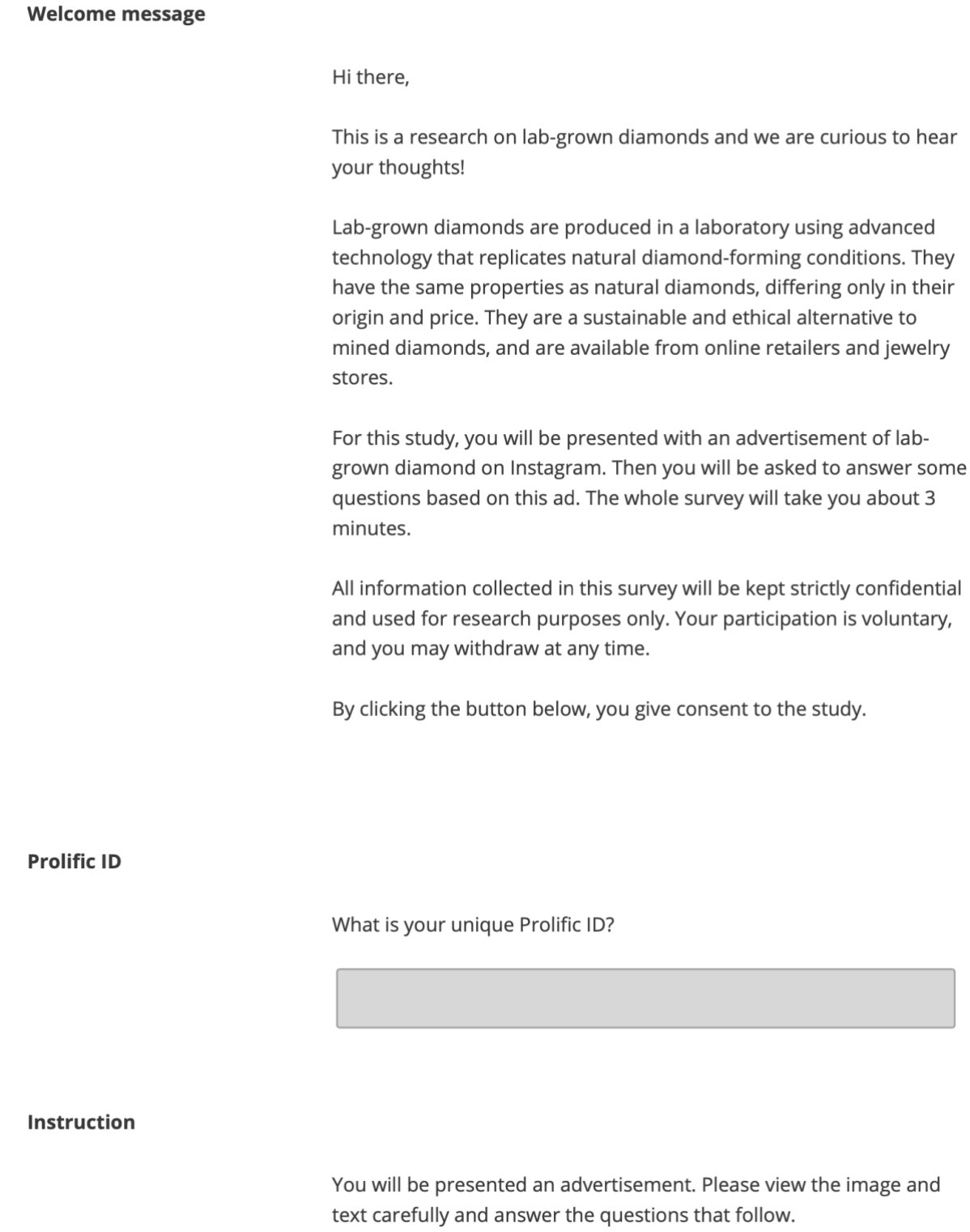


Figure A.1.1 Screenshot of introduction and consent

A.2 Stimulus material for four experimental conditions

Figure A.2.1 Screenshot of condition 1 – Certified sustainable label x emotional advertising appeal

Figure A.2.2 Screenshot of condition 2 – Certified sustainable label x rational advertising appeal

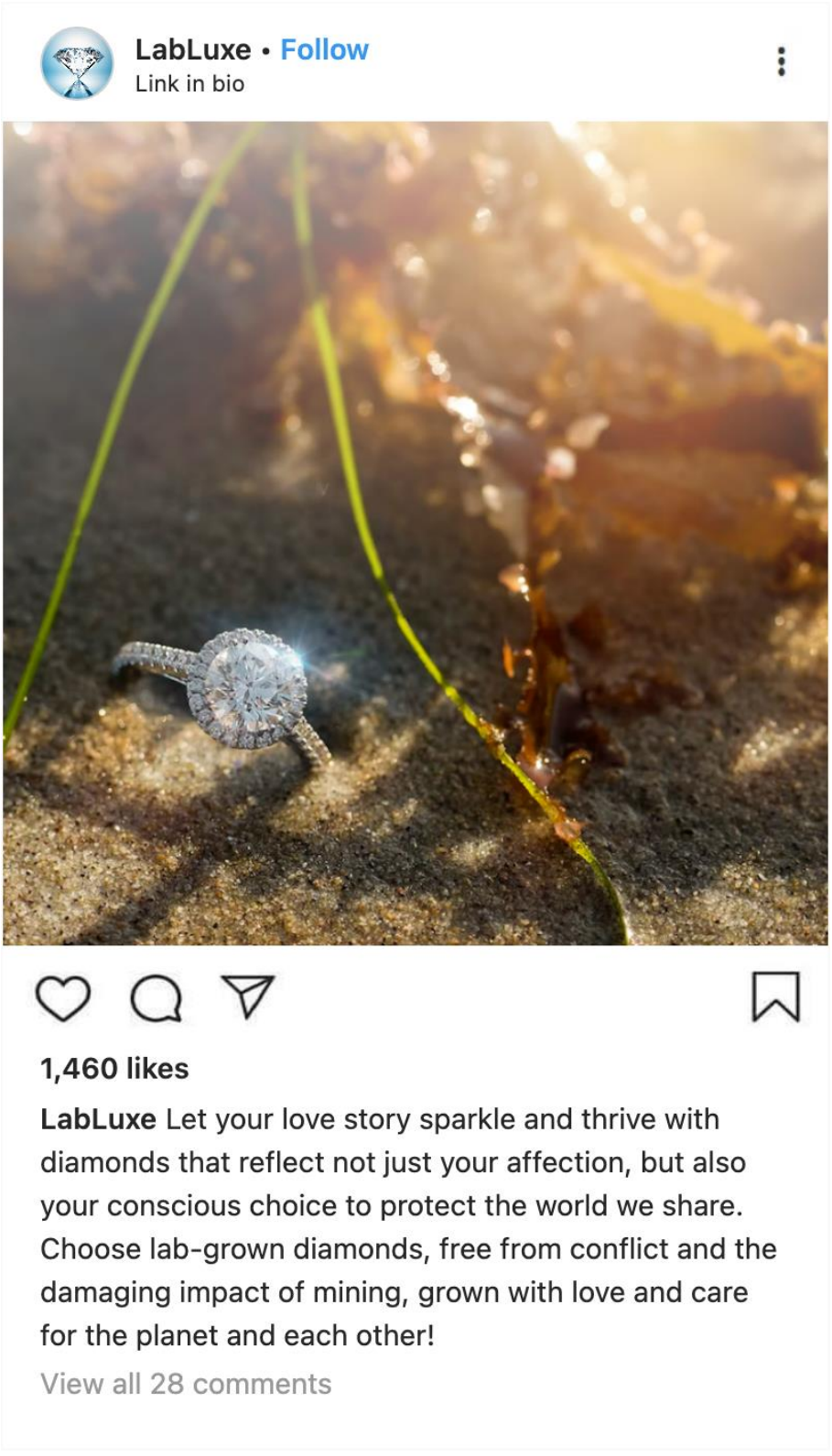


Figure A.2.3 Screenshot of condition 3 – No label x emotional advertising appeal

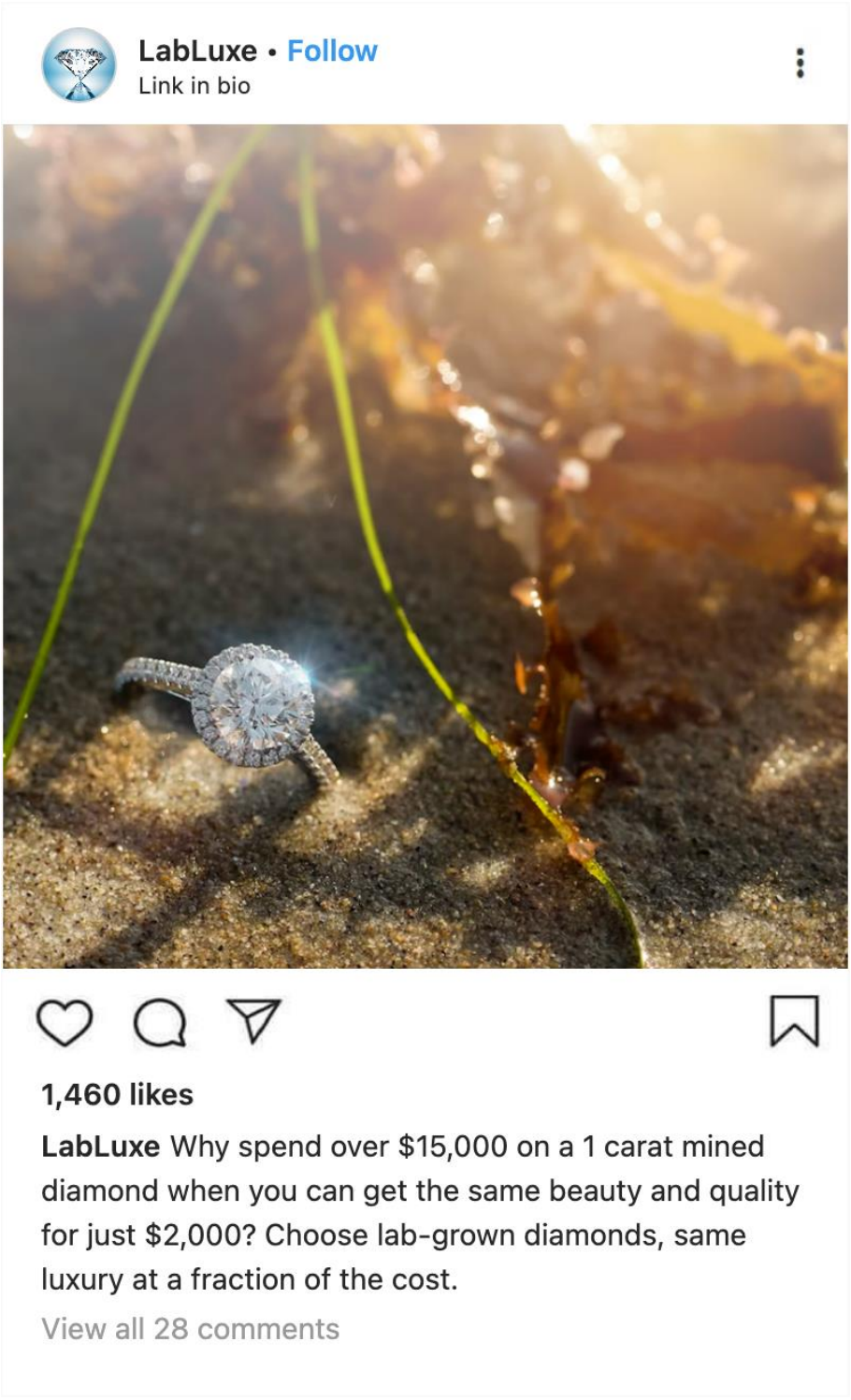


Figure A.2.4 Screenshot of condition 4 – No label x rational advertising appeal

A.3 Questions measuring dependent variables

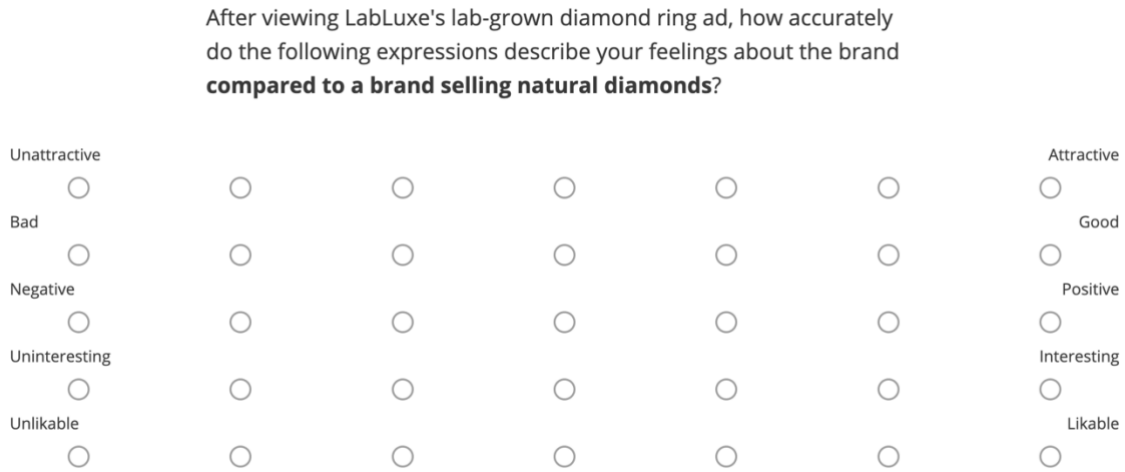


Figure A.3.1 Screenshot of items measuring brand attitudes

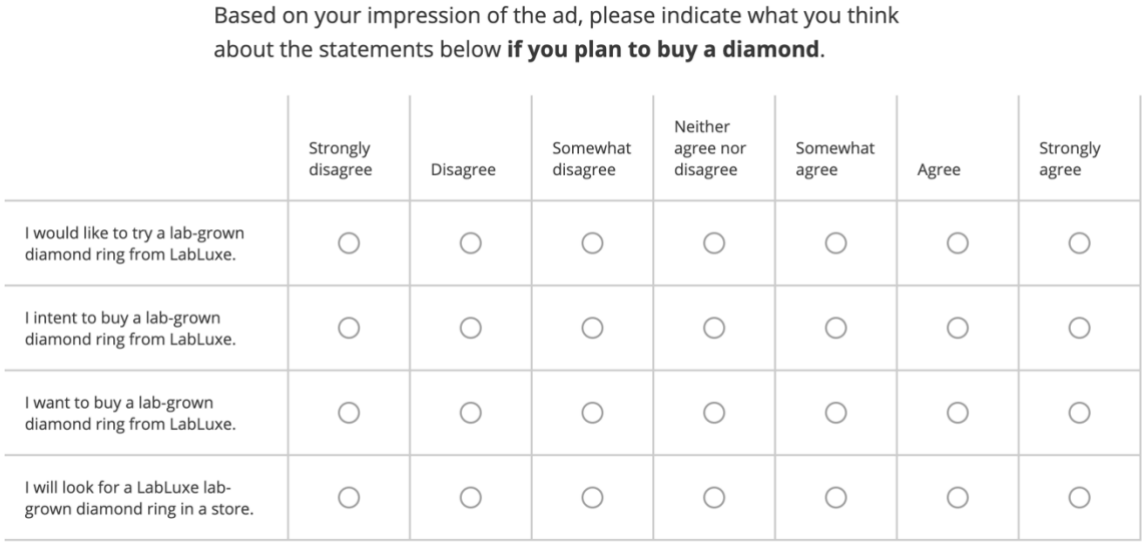
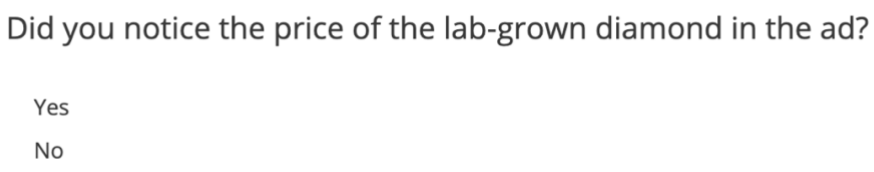


Figure A.3.2 Screenshot of items measuring purchase intention

A.4 Manipulation check questions



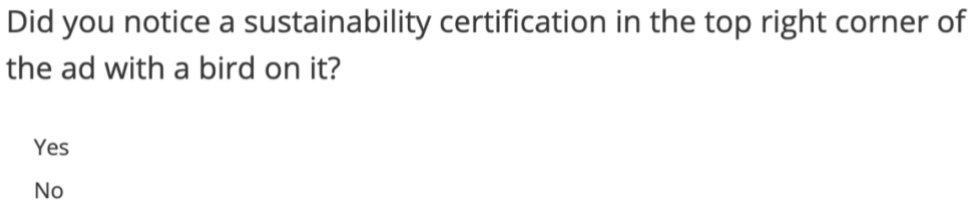


Figure A.4.1 Screenshot of manipulation check questions

A.5 Additional questions

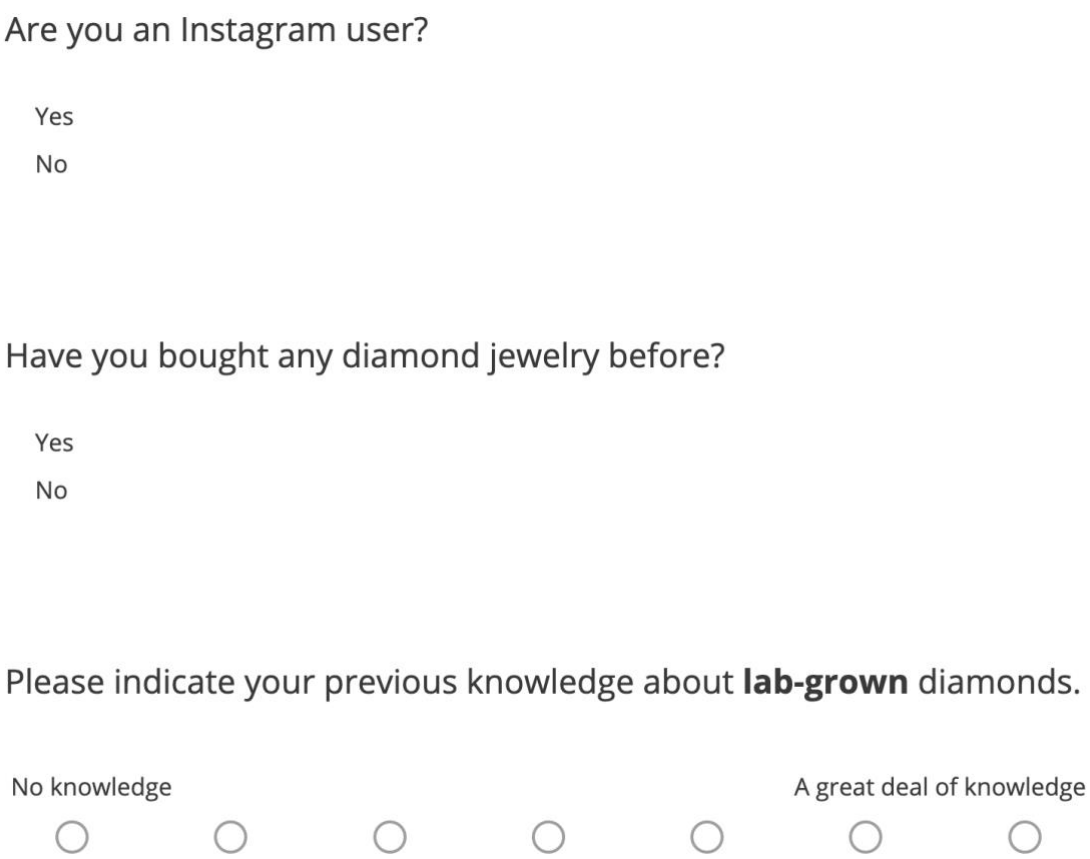
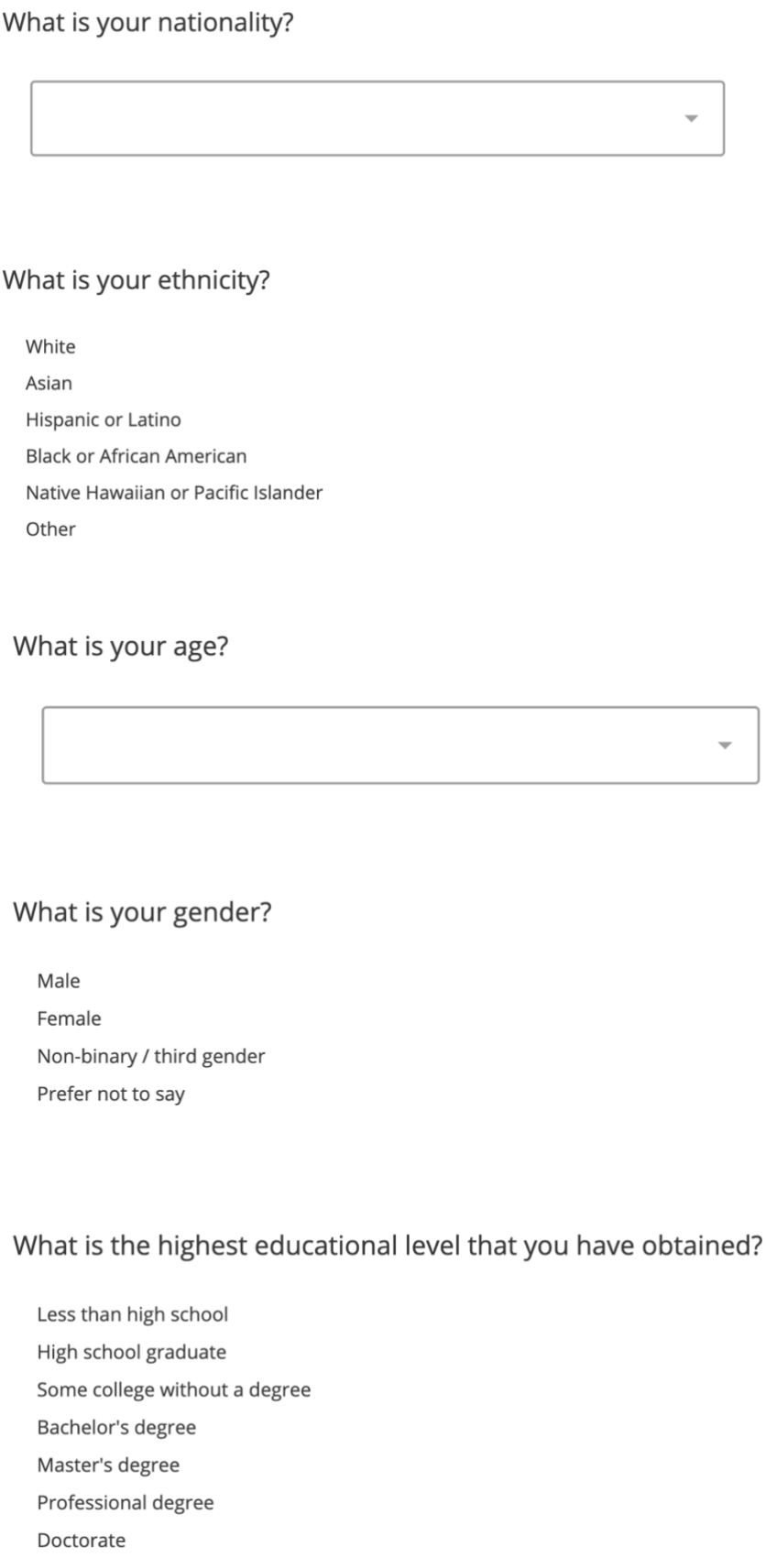


Figure A.5.1 Screenshot of additional questions

A.6 Demographic questions



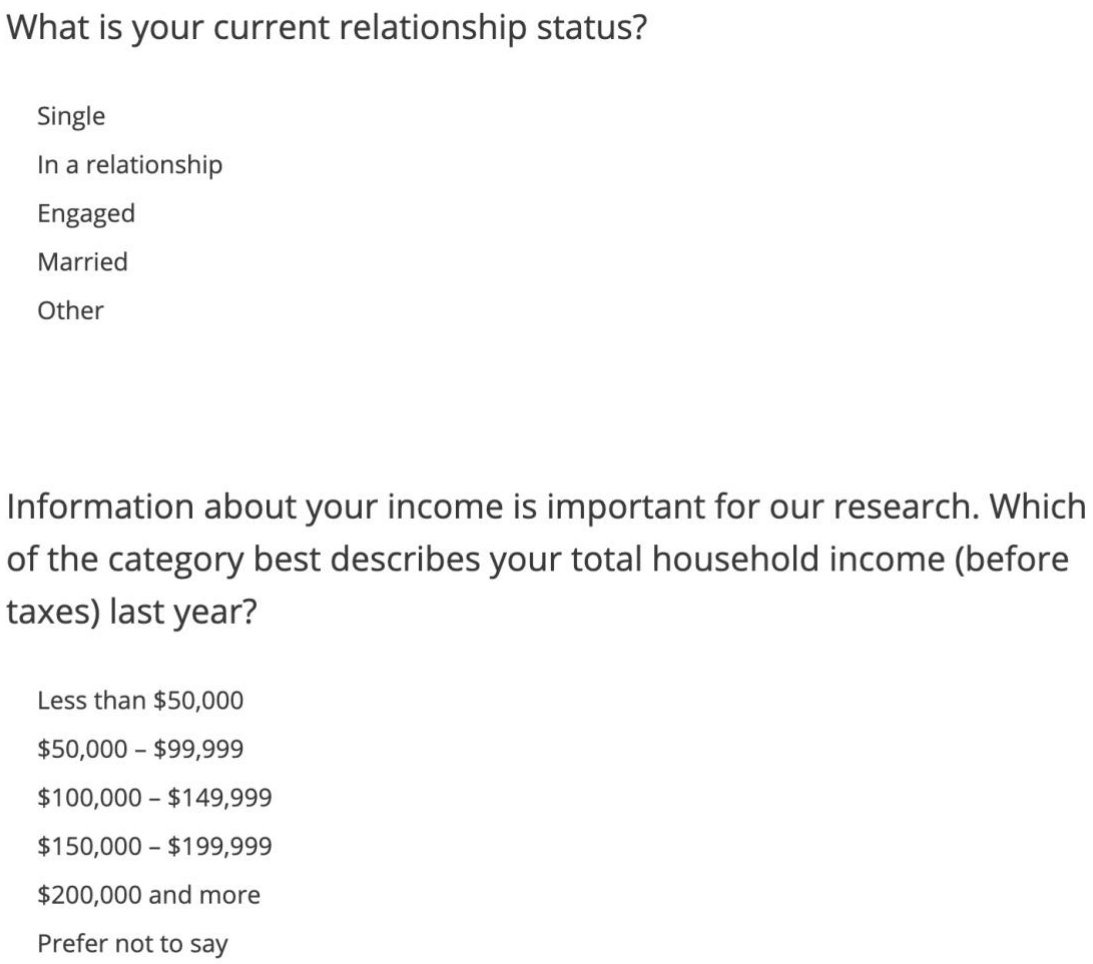


Figure A.6.1 Screenshot of demographic questions